

**Virginia Board of Housing and Community Development
CODES AND STANDARDS COMMITTEE
2024 CODE CHANGE CYCLE – BOOK 2, PART 1
May 11, 2026**

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Opening Statement

Tab 1 – Uniform Statewide Building Code (13VAC5-63) Base Document

Uniform Statewide Building Code (USBC):

- USBC Part I – Virginia Construction Code (VCC)
- USBC Part II – Virginia Existing Building Code (VEBC)
- USBC Part III – Virginia Property Maintenance Code (VPMC)

Tab 2 – USBC Proposals Recommended by the General Stakeholder Workgroup as Consensus for Approval

Proposal No.	Proposal ID	Description	Page
24	B103.7-24	Correlates the USBC with § 36-98.1 of the Code of Virginia. Some changes were a result of HB285 and HB1425 during the 2024 General Assembly (GA) session and some were from previous GA sessions.	Tab 2 – Page 1
25	B105.2-24	Deletes the requirement for building officials to notify DHCD when new technical assistants are hired. (SFPC companion proposal FP105.3.1-24; USBC Part III companion proposal PM104.4-24)	Tab 2 – Page 7
26	B108.2-24	Clarifies that the permit exemption for mechanical appliance replacements applies only when there is no change in refrigerant classification.	Tab 2 – Page 9
27	B109.1-24	Clarifies that construction documents for one-and two-family dwellings may have floor plans reversed.	Tab 2 – Page 13
28	B110.6-24	Allows the building official to grant one or more permit extensions upon request, regardless of whether the request is in writing.	Tab 2 – Page 15
29	B115.2-24	Provides the building official with flexibility to determine the appropriate party for issuing Notices of Violation.	Tab 2 – Page 17
30	B115.2(2)-24	Clarifies that electronic service is an acceptable method for delivering Notices of Violation.	Tab 2 – Page 19

31	B118.4-24	Updates legacy terminology related to “unsafe buildings”, removes outdated notes, clarifies how orders to vacate are to be issued, and consolidates the requirements for posting of placards.	Tab 2 – Page 21
32	B119.5-24	Clarifies that the reaffirmation of a prior code decision does not constitute a new application of code subject to appeal. (SFPC companion proposal FP112.5-24)	Tab 2 – Page 23
33	B119.5(1)-24	Clarifies that the written request for appeals is not considered to be complete and filed until the fee levied by the local governing body is paid. (SFPC companion proposal FP112.1-24)	Tab 2 – Page 25
34	B202-24	Adds a new definition for “Dead End Corridor”.	Tab 2 – Page 27
35	B302.1-24	Relocation of existing provisions related to day support and day treatment facilities, for correlation purposes.	Tab 2 – Page 29
36	B406.2.7-24	Adds new requirements for electric vehicle charging systems, including the installation of emergency shutoff controls, provisions for impact protection, and the posting of emergency procedures. (SFPC companion proposal FP1208-24)	Tab 2 – Page 31
37	B406.2.7(1)-24	Requires electric vehicle charging system equipment to be listed and labeled in accordance with UL 2750 (in addition to UL 2202), and parking garages with electric vehicle charging stations to comply with sections 6.4 and 6.5 of NFPA 88A.	Tab 2 – Page 39
38	B407.4.1.1-24	Deletes exiting Virginia amendment related to special locking arrangements, aligning with the 2024 International Building Code requirements.	Tab 2 – Page 47
39	B509.1-24	Adds Lithium-ion and lithium metal battery storage to the Incidental Uses table and requires compliance with Section 320 of the International Fire Code.	Tab 2 – Page 49
40	B1006.2.1(1)-24	Deletes an existing Virginia exception to the requirements for egress based on occupant load and common path of egress travel distance. Similar provisions are now covered in the 2024 International Building Code.	Tab 2 – Page 51
41	B1006.3.4-24	Allows four-story R-2 occupancy buildings to be served by a single exit when established criteria are met.	Tab 2 – Page 53
42	B1110.20-24	Adds new requirements for baby diaper changing tables in Groups A, B, E, M, R-1, and in highway rest stops.	Tab 2 – Page 77
43	B3005.4-24	Deletes existing Virginia amendments related to elevator machine rooms, control rooms, control	Tab 2 – Page 79

		spaces, and machinery spaces, aligning with the 2024 International Building Code requirements.	
44	B3301.1-24	Deletes fire safety operation and maintenance provisions from the VCC and VEBC and clarifies that fire safety plans may be required by the fire code official in accordance with the SFPC.	Tab 2 – Page 81
45	B3500(1)-24	Updates ASTM E329-02 referenced standard to the current edition, ASTM E329-25a (Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection).	Tab 2 – Page 85
46	RB311-24	Clarifies that all habitable spaces, including habitable spaces in detached accessory structures, must be provided with a compliant means of egress.	Tab 2 – Page 87
47	RB314.3-24	Relocates existing provisions for improved code readability and alignment with the structure of the 2024 International Residential Code.	Tab 2 – Page 89
48	RB318.7.6-24	Updates stairway landing provisions by incorporating changes from the ongoing 2027 International Residential Code development process to improve clarity and consistency.	Tab 2 – Page 91
49	RB322.3.6-24	Allows the installation of elevator shaft enclosures in Coastal A Zones and Coastal High Hazard Areas, provided they are designed in accordance with ASCE 24.	Tab 2 – Page 93
50	RB339-24	Allows compliance with Appendix BL Hemp-Lime (Hempcrete) Construction as an alternative to the technical provisions of the Virginia Residential Code.	Tab 2 – Page 95
51	EC-C402.1.6(1)-24	Limits the use of Appendix CD to buildings in Groups F, S, and U that are not designed or equipped to heat the interior to more than 60° F or to cool the interior other than by fans or natural ventilation.	Tab 2 – Page 101
52	EC-C402.5.2-24	Exempts data centers, and other rooms or spaces where the primary function is to house server cabinets from the minimum skylight fenestration area requirements.	Tab 2 – Page 121
53	EC-C403.7.4.1-24	Exempts qualifying individual nontransient dwelling units in Groups R-2 and R-3 from the requirement to provide air energy recovery ventilation systems.	Tab 2 – Page 123
54	REC-R402.1.2(3)-24	Adds a compliance alternative for insulating ceilings/roofs, while maintaining equivalence with the current prescriptive requirements.	Tab 2 – Page 125
55	M403.3.1.1-24	Deletes the ventilation requirements for dressing rooms within retail stores, sales floors, and showroom floors for consistency with ASHRAE 62.1.	Tab 2 – Page 127
56	M504.4-24	Clarifies that required backdraft dampers for dryer exhaust ducts must be installed at the duct	Tab 2 – Page 131

		termination, aligning the provision with the International Residential Code.	
57	M506.3.2.5-24	Removes the option for water-spray testing of grease ducts and requires a light test using lamps with a minimum output of 1600 lumens, replacing the previous requirement for 100-watt lamps.	Tab 2 – Page 133
58	M507.1-24	Editorial cleanup to correct issues stemming from the development of the 2024 International Mechanical Code.	Tab 2 – Page 135
59	M508.2-24	Restores the requirement limiting makeup air introduced directly into the exhaust hood cavity to not more than 10 percent of the hood exhaust airflow rate, correcting an omission from the 2018 code development cycle.	Tab 2 – Page 137
60	M607.6.2.2-24	Deletes the Virginia amendments addressing radiation dampers listed as static dampers, which are now addressed in the model code.	Tab 2 – Page 139
61	M1103.1-24	Updates the requirements for communicating and noncommunicating spaces to address concerns related to the flammability of A2L refrigerants.	Tab 2 – Page 141
62	M1103.1(1)-24	Updates Table 1103.1 to correct errors in the 2024 International Mechanical Code related to Refrigerant Concentration Limits (RCLs) and Lower Flammability Limits (LFLs).	Tab 2 – Page 143
63	M1109.2.5-24	Corrects limitations that were inadvertently introduced in a prior code cycle, and restores the intended application of exceptions for refrigerant piping and shaft requirements.	Tab 2 – Page 153
64	M-FG310.2-24	Eliminates the use of non–arc-resistant jacketed corrugated stainless steel tubing (CSST) and permits only arc-resistant jacketed CSST to be installed. (VRC companion proposal RM-FG2411.2-24)	Tab 2 – Page 155
65	M-FG407.2-24	Requires pipe hooks, straps, bands, brackets, and hangers used to support gas piping to be made of metal.	Tab 2 – Page 157
66	RE3702.14-24	Clarifies that branch-circuits can be shared between a dwelling unit and its accessory dwelling unit (ADU).	Tab 2 – Page 159
67	RE3705.6-24	Updates Table E3705.6 to include 10-ampere standard fuses and inverse-time circuit breakers, aligning it with the requirements of NFPA 70-2023, Section 240.6.	Tab 2 – Page 161
68	RM-FG2411.2-24	Eliminates the use of non–arc-resistant jacketed corrugated stainless steel tubing (CSST) and permits only arc-resistant jacketed CSST to be installed. (VFGC companion proposal M-FG310.2-24)	Tab 2 – Page 163

69	RM-FG2415.7-24	Clarifies that the exception exempting black steel piping from protection against physical damage applies only to piping with a wall thickness of Schedule 40 or greater.	Tab 2 – Page 165
70	RM-FG2442.3-24	Clarifies that return air may be shared between a dwelling unit and its accessory dwelling unit (ADU).	Tab 2 – Page 167
71	RP2903.10.1-24	Clarifies that a water service shutoff valve may be shared between a dwelling unit and its accessory dwelling unit (ADU).	Tab 2 – Page 169
72	EB102.2-24	Updates the scoping provisions to include alteration, change of occupancy, addition, and relocation (in addition to rehabilitation) activities, and deletes “construction” for accuracy and alignment with the International Existing Building Code.	Tab 2 – Page 171
73	EB102.2.2-24	Overhauls and relocates existing emergency escape and rescue opening requirements to new Section 307.	Tab 2 – Page 173
74	EB103.9-24	Provides clarification on the types of licensed professionals permitted to prepare elevation certificates, consistent with DPOR regulations and FEMA guidelines.	Tab 2 – Page 177
75	EB202-24	Updates the definition of “change of occupancy” to include electrical requirements in special occupancies as one of the triggers.	Tab 2 – Page 179
76	EB202(1)-24	Updates the definition of “change of occupancy” to include “change of use” as one of the conditions that constitutes a change of occupancy.	Tab 2 – Page 181
77	EB307-24	Adds three new sections to Chapter 3 to serve as placeholders for future provisions.	Tab 2 – Page 183
78	EB401.1-24	Updates the scoping provisions to include repairs, alterations, additions, and change of occupancy (in addition to rehabilitation), and deletes “construction” for accuracy and alignment with the International Existing Building Code.	Tab 2 – Page 185
79	EB403.1-24	Clarifies that existing accessible elements and features may be removed, provided that the building or facility complies with the accessibility requirements for new construction after their removal.	Tab 2 – Page 187
80	EB506.2-24	Requires replacement plumbing fixtures to comply with the maximum water flow and consumption limits applicable to new construction.	Tab 2 – Page 189
81	EB702.2-24	Clarifies the applicability of Chapter 7 to projects involving the creation of or conversion to building types or features regulated by Chapter 4 of the VCC.	Tab 2 – Page 191
82	EB706.2-24	Provides additional flexibility in meeting building height and area requirements for Group R-2	Tab 2 – Page 193

		occupancies protected throughout with an NFPA 13 automatic sprinkler system.	
83	EB801.2-24	Clarifies when elevator cars sized to accommodate ambulance stretchers are required for vertical additions.	Tab 2 – Page 195
84	EB805.2.1.1-24	Exempts additions from blower door testing requirements and permits verification of building envelope tightness through visual inspection.	Tab 2 – Page 197
85	EB901.1-24	Updates the scoping provisions to include repairs, alterations, additions, change of occupancy, rehabilitation, and relocation for alignment with the International Existing Building Code.	Tab 2 – Page 199
86	PM104.4-24	Deletes the requirement for code officials to notify DHCD when new technical assistants are hired. (USBC Part I companion proposal B105.2-24; SFPC companion proposal FP105.3.1-24)	Tab 2 – Page 201
87	PM105.2-24	Specifies the methods by which notices of violation are to be issued, aligning the process with the VCC.	Tab 2 – Page 203
88	PM106.8-24	Clarifies that emergency demolitions of unsafe structures may be authorized under this section when an imminent danger of collapse is present and life is endangered.	Tab 2 – Page 207
89	PM107.5-24	Clarifies that the written request for appeals is not considered to be complete and filed until the fee levied by the local governing body is paid. [USBC Part I companion proposal B119.5(1)-24; SFPC companion proposal FP112.1-24]	Tab 2 – Page 209
90	PM202-24	Adds “vacant and” to condition #3 of the “unsafe structure” definition, correcting an omission from a previous code development cycle.	Tab 2 – Page 211
91	PM302.5-24	Clarifies that it is the rodents, not the structures, that must be exterminated.	Tab 2 – Page 213
92	PM303.2-24	Adds new maintenance requirements specific to swimming pool power safety covers and spa or hot tub lockable safety covers similar to those for barriers.	Tab 2 – Page 215
93	PM309.1-24	Clarifies that it is the rodents and the insects, not the structures, that must be exterminated.	Tab 2 – Page 217
94	PM602.2(2)-24	Adjusts heating and cooling periods, increases HVAC transition flexibility, aligns commercial and residential heating requirements, clarifies enforcement authority, and removes obsolete language.	Tab 2 – Page 219
95	PM606.1-24	Requires platform lifts, wheelchair lifts, and moving walks to be maintained, tested and inspected in accordance with ASME A17.1 and ASME A18.1.	Tab 2 – Page 223

Tab 1

Uniform Statewide Building Code

Base Document

Part	Description	Page
Part I	Virginia Construction Code	Tab 1 – Page 1
Part II	Virginia Existing Building Code	Tab 1 – Page 211
Part III	Virginia Maintenance Code	Tab 1 – Page 299

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
2024 Virginia Uniform Statewide Building Code Base Document

6/6/2025

Summary – This document is compiled by staff of the State Building Codes Office of the Division of Building and Fire Regulation. Its purpose is to convert the 2021 USBC to the 2024 USBC by comparing the language in the 2021 USBC to the 2024 editions of the International Codes and standards which have amendments in the USBC. It is not intended to create substantive changes to the 2021 USBC. Those differences between the 2021 International Codes and standards and the 2024 International Codes and standards which are not affected by existing state amendments to the 2021 International Codes and standards are not addressed in this document. Those differences may be addressed in the full code change process for the 2024 USBC. The base document is simply to make those necessary changes to the 2021 USBC to bring in the 2024 International Codes and standards and keep the existing state amendments which were made to the 2021 International Codes and standards. If the 2024 International Codes and standards have language that is consistent with an existing state amendment to the 2021 International Codes and standards, then the existing state amendment is deleted. The staff document is intended to serve as the basis for the publishing of proposed regulations for the 2024 USBC. Once the base document is approved by the Board of Housing and Community Development, if any code change proposals are considered and approved by the Board of Housing and Community Development to also go into the proposed regulations for the 2024 USBC, those proposals would be correlated with this base document and brought back to the Board of Housing and Community Development as a separate “proposed regulations” document for review.

Part I Construction

13VAC5-63-10. Chapter 1 Administration; Section 101 General.

A. Section 101.1 Short title. The Virginia Uniform Statewide Building Code, Part I, Construction, may be cited as the Virginia Construction Code or as the VCC. The term "USBC" shall mean the VCC unless the context in which the term is used clearly indicates it to be an abbreviation for the entire Virginia Uniform Statewide Building Code or for a different part of the Virginia Uniform Statewide Building Code.

Note: This code is also known as the ~~2021~~ 2024 edition of the USBC due to the use of the ~~2021~~ 2024 editions of the model codes.

B. Section 101.2 Incorporation by reference. Chapters 2 - 35 of the ~~2021~~ 2024 International Building Code, published by the International Code Council, Inc., are adopted and incorporated by reference to be an enforceable part of the USBC. The term "IBC" means the ~~2021~~ 2024 International Building Code, published by the International Code Council, Inc. Any codes and standards referenced in the IBC are also considered to be part of the incorporation by reference, except that such codes and standards are used only to the prescribed extent of each such reference. In addition, any provisions of the appendices of

the IBC specifically identified to be part of the USBC are also considered to be part of the incorporation by reference.

Note 1: The IBC references other International Codes and standards, including the following major codes:

~~2021~~ 2024 International Plumbing Code (IPC)

~~2021~~ 2024 International Mechanical Code (IMC)

~~2020~~ 2023 National Fire Protection Association (NFPA) 70

~~2021~~ 2024 International Fuel Gas Code (IFGC)

~~2021~~ 2024 International Energy Conservation Code (IECC)

~~2021~~ 2024 International Residential Code (IRC)

Note 2: The IRC is applicable to the construction of detached one-family and two-family dwellings and townhouses as set out in Section 310.

C. Section 101.3 Numbering system. A dual numbering system is used in the USBC to correlate the numbering system of the Virginia Administrative Code with the numbering system of the IBC. IBC numbering system designations are provided in the catchlines of the Virginia Administrative Code sections. Cross references between sections or chapters of the USBC use only the IBC numbering system designations. The term "chapter" is used in the context of the numbering system of the IBC and may mean a chapter in the USBC, a chapter in the IBC, or a chapter in a referenced code or standard, depending on the context of the use of the term. The term "chapter" is not used to designate a chapter of the Virginia Administrative Code, unless clearly indicated.

D. Section 101.4 Arrangement of code provisions. The USBC is comprised of the combination of (i) the provisions of Chapter 1, Administration, which are established in this section; (ii) Chapters 2 through 35 of the IBC, which are incorporated by reference in Section 101.2; and (iii) the changes to the text of the incorporated chapters of the IBC that are specifically identified. The terminology "changes to the text of the incorporated chapters of the IBC that are specifically identified" shall also be referred to as the "state amendments to the IBC." Such state amendments to the IBC are set out using corresponding chapter and section numbers of the IBC numbering system. In addition, since Chapter 1 of the IBC is not incorporated as part of the USBC, any reference to a provision of Chapter 1 of the IBC in the provisions of Chapters 2 through 35 of the IBC is generally invalid. However, where the purpose of such a reference would clearly correspond to a provision of Chapter 1 established in this section, then the reference may be construed to be a valid reference to such corresponding Chapter 1 provision.

E. Section 101.5 Use of terminology and notes. The provisions of this code shall be used as follows:

1. The term "this code," or "the code," where used in the provisions of Chapter 1, in Chapters 2 through 35 of the IBC or in the state amendments to the IBC means the USBC, unless the context clearly indicates otherwise.

2. The term "this code," or "the code," where used in a code or standard referenced in the IBC means that code or standard, unless the context clearly indicates otherwise.

3. The use of notes in Chapter 1 is to provide information only and shall not be construed as changing the meaning of any code provision.

4. Notes in the IBC, in the codes and standards referenced in the IBC and in the state amendments to the IBC may modify the content of a related provision and shall be considered to be a valid part of the provision, unless the context clearly indicates otherwise.

5. References to International Codes and standards, where used in this code, include state amendments made to those International Codes and standards in the VCC.

F. Section 101.6 Order of precedence. The provisions of this code shall be used as follows:

1. The provisions of Chapter 1 of this code supersede any provisions of Chapters 2 through 35 of the IBC that address the same subject matter and impose differing requirements.

2. The provisions of Chapter 1 of this code supersede any provisions of the codes and standards referenced in the IBC that address the same subject matter and impose differing requirements.

3. The state amendments to the IBC supersede any provisions of Chapters 2 through 35 of the IBC that address the same subject matter and impose differing requirements.

4. The state amendments to the IBC supersede any provisions of the codes and standards referenced in the IBC that address the same subject matter and impose differing requirements.

5. The provisions of Chapters 2 through 35 of the IBC supersede any provisions of the codes and standards referenced in the IBC that address the same subject matter and impose differing requirements.

6. The provisions of the National Electrical Code (NEC), Virginia Property Maintenance Code (~~VMC~~), (VPMC), Virginia Plumbing Code (VPC), and Virginia Fuel Gas Code (VFGC) supersede any provisions of the Virginia Energy Conservation Code (VECC) that address the same subject matter and impose differing requirements.

7. The provisions of Chapters 2 through 10 and 12 through 44 of the VRC supersede any provisions of Chapter 11 of the VRC that address the same subject matter and impose differing requirements.

G. Section 101.7 Administrative provisions. The provisions of Chapter 1 establish administrative requirements, which include provisions relating to the scope of the code, enforcement, fees, permits, inspections and disputes. Any provisions of Chapters 2 through 35 of the IBC or any provisions of the codes and standards referenced in the IBC that address the same subject matter and impose differing requirements are deleted and replaced by the provisions of Chapter 1. Further, any administrative requirements contained in the state amendments to the IBC shall be given the same precedence as the provisions of Chapter 1. Notwithstanding the provisions of this subsection, where administrative

requirements of Chapters 2 through 35 of the IBC or of the codes and standards referenced in the IBC are specifically identified as valid administrative requirements in Chapter 1 of this code or in the state amendments to the IBC, then such requirements are not deleted and replaced.

Note: The purpose of this provision is to eliminate overlap, conflicts, and duplication by providing a single standard for administrative, procedural, and enforcement requirements of this code.

H. Section 101.8 Definitions. The definitions of terms used in this code are contained in Chapter 2 along with specific provisions addressing the use of definitions. Terms may be defined in other chapters or provisions of the code and such definitions are also valid.

Note: The order of precedence outlined in Section 101.6 may be determinative in establishing how to apply the definitions in the IBC and in the referenced codes and standards.

13VAC5-63-20. Section 102 Purpose and scope.

A. Section 102.1 Purpose. In accordance with § 36-99 of the Code of Virginia, the purpose of the USBC is to protect the health, safety, and welfare of the residents of the Commonwealth of Virginia, provided that buildings and structures should be permitted to be constructed at the least possible cost consistent with recognized standards of health, safety, energy conservation, and water conservation, including provisions necessary to prevent overcrowding, rodent or insect infestation, and garbage accumulation and include barrier-free provisions for the physically handicapped and aged.

B. Section 102.2 Scope. This section establishes the scope of the USBC in accordance with § 36-98 of the Code of Virginia. The USBC shall supersede the building codes and regulations of the counties, municipalities, and other political subdivisions and state agencies. This code also shall supersede the provisions of local ordinances applicable to single-family residential construction that (i) regulate dwelling foundations or crawl spaces; (ii) require the use of specific building materials or finishes in construction; or (iii) require minimum surface area or numbers of windows; however, this code shall not supersede proffered conditions accepted as a part of a rezoning application, conditions imposed upon the grant of special exceptions, special or conditional use permits or variances, conditions imposed upon a clustering of single-family homes and preservation of open space development through standards, conditions, and criteria established by a locality pursuant to subdivision 8 of § 15.2-2242 of the Code of Virginia or § 15.2-2286.1 of the Code of Virginia, or land use requirements in airport or highway overlay districts, historic districts created pursuant to § 15.2-2306 of the Code of Virginia, or local flood plain regulations adopted as a condition of participation in the National Flood Insurance Program.

Note: Requirements relating to functional design are contained in Section 103.5 of this code.

C. Section 102.2.1 Invalidity of provisions. To the extent that any provisions of this code are in conflict with Chapter 6 (§ 36-97 et seq.) of Title 36 of the Code of Virginia or in conflict with the scope of the USBC, those provisions are considered to be invalid to the extent of such conflict.

D. Section 102.3 Exemptions. The following are exempt from this code:

1. Equipment and wiring used for providing utility, communications, information, cable television, broadcast, or radio service in accordance with all of the following conditions:
 - 1.1. The equipment and wiring are located on either rights-of-way or property for which the service provider has rights of occupancy and entry.
 - 1.2. Buildings housing exempt equipment and wiring shall be subject to the USBC.
 - 1.3. The equipment and wiring exempted by this section shall not create an unsafe condition prohibited by the USBC.
2. Support structures owned or controlled by a provider of publicly regulated utility service or its affiliates for the transmission and distribution of electric service in accordance with all of the following conditions:
 - 2.1. The support structures are located on either rights-of-way or property for which the service provider has rights of occupancy and entry.
 - 2.2. The support structures exempted by this section shall not create an unsafe condition prohibited by the USBC.
3. Direct burial poles used to support equipment or wiring providing communications, information, or cable television services. The poles exempted by this section shall not create an unsafe condition prohibited by the USBC.
4. Electrical equipment, transmission equipment, and related wiring used for wireless transmission of radio, broadcast, telecommunications, or information service in accordance with all of the following conditions:
 - 4.1. Buildings housing exempt equipment and wiring and structures supporting exempt equipment and wiring shall be subject to the USBC.
 - 4.2. The equipment and wiring exempted by this section shall not create an unsafe condition prohibited by the USBC.
5. Manufacturing, processing, and product handling machines and equipment that do not produce or process hazardous materials regulated by this code, including those portions of conveyor systems used exclusively for the transport of associated materials or products, and all of the following service equipment:
 - 5.1. Electrical equipment connected after the last disconnecting means.
 - 5.2. Plumbing piping and equipment connected after the last shutoff valve or backflow device and before the equipment drain trap.
 - 5.3. Gas piping and equipment connected after the outlet shutoff valve.

Manufacturing and processing machines that produce or process hazardous materials regulated by this code are only required to comply with the code provisions regulating the hazardous materials.

6. Parking lots and sidewalks that are not part of an accessible route.

7. Playground or recreational equipment, such as swing sets, sliding boards, climbing bars, jungle gyms, skateboard ramps, and similar equipment. However, play structures installed inside all occupancies covered by this code shall be subject to the play structures section in VCC chapter 4.

8. Industrialized buildings subject to the Virginia Industrialized Building Safety Regulations (13VAC5-91) and manufactured homes subject to the Virginia Manufactured Home Safety Regulations (13VAC5-95); except as provided for in Section 429 and in the case of demolition of such industrialized buildings or manufactured homes.

9. Farm buildings and structures, except for a building or a portion of a building located on a farm that is operated as a restaurant as defined in § 35.1-1 of the Code of Virginia and licensed as such by the Virginia State Board of Health pursuant to Chapter 2 (§ 35.1-11 et seq.) of Title 35.1 of the Code of Virginia. However, farm buildings and structures lying within a flood plain or in a mudslide-prone area shall be subject to flood-proofing regulations or mudslide regulations, as applicable.

10. Federally owned buildings and structures unless federal law specifically requires a permit from the locality. Underground storage tank installations, modifications, and removals shall comply with this code in accordance with federal law.

11. Off-site manufactured intermodal freight containers, moving containers, and storage containers placed on site temporarily or permanently for use as a storage container.

12. Automotive lifts.

13VAC5-63-30. Section 103 Application of code.

A. Section 103.1 General. In accordance with § 36-99 of the Code of Virginia, the USBC shall prescribe building regulations to be complied with in the construction and rehabilitation of buildings and structures, and the equipment therein.

B. Section 103.1.1 Virginia Existing Building Code. Part II of the Virginia Uniform Statewide Building Code, also known as the "Virginia Existing Building Code," or the "VEBC" is applicable to construction and rehabilitation activities in existing buildings and structures, as those terms are defined in the VEBC, except where specifically addressed in the VCC.

C. Section 103.2 When applicable to construction. Construction for which a permit application is submitted to the local building department on or after the effective date of the ~~2021~~ 2024 edition of the code shall comply with the provisions of this code, except for permit applications submitted during a one-year period beginning on the effective date of the ~~2021~~ 2024 edition of the code. The applicant for

a permit during such one-year period shall be permitted to choose whether to comply with the provisions of this code or the provisions of the edition of the code in effect immediately prior to the 2021 2024 edition. This provision shall also apply to subsequent amendments to this code based on the effective date of such amendments. In addition, when a permit has been properly issued under a previous edition of this code, this code shall not require changes to the approved construction documents, design, or construction of such a building or structure, provided the permit has not been suspended or revoked.

D. Section 103.3 Nonrequired equipment. The following criteria for nonrequired equipment is in accordance with § 36-103 of the Code of Virginia. Building owners may elect to install partial or full fire alarms or other safety equipment that was not required by the edition of the USBC in effect at the time a building was constructed without meeting current requirements of the code, provided the installation does not create a hazardous condition. Permits for installation shall be obtained in accordance with this code. In addition, as a requirement of this code, when such nonrequired equipment is to be installed, the building official shall notify the appropriate fire official or fire chief.

E. Section 103.3.1 Reduction in function or discontinuance of nonrequired fire protection systems. When a nonrequired fire protection system is to be reduced in function or discontinued, it shall be done in such a manner so as not to create a false sense of protection. Generally, in such cases, any features visible from interior areas shall be removed, such as sprinkler heads, smoke detectors, or alarm panels or devices, but any wiring or piping hidden within the construction of the building may remain. Approval of the proposed method of reduction or discontinuance shall be obtained from the building official.

F. Section 103.4 Use of certain provisions of referenced codes. The following provisions of the IBC and of other indicated codes or standards are to be considered valid provisions of this code. Where any such provisions have been modified by the state amendments to the IBC, then the modified provisions apply.

1. Special inspection requirements in Chapters 2 through 35.
2. Testing requirements and requirements for the submittal of construction documents in any of the ICC codes referenced in Chapter 35 and in the IRC.
3. Section R301.2 of the IRC authorizing localities to determine climatic and geographic design criteria.
4. Flood load or flood-resistant construction requirements in the IBC or the IRC, including any such provisions pertaining to flood elevation certificates that are located in Chapter 1 of those codes. Any required flood elevation certificate pursuant to such provisions shall be prepared by a land surveyor licensed in Virginia or a registered design professional (RDP).
5. ~~Section N1102.1 of the IRC and Sections C402.1.1, C402.1.1.1, and R402.1 of the IECC.~~

G. Section 103.5 Functional design. The following criteria for functional design is in accordance with § 36-98 of the Code of Virginia. The USBC shall not supersede the regulations of other state agencies that require and govern the functional design and operation of building related activities not covered by the USBC, including (i) public water supply systems, (ii) waste water treatment and disposal systems, and (iii)

solid waste facilities. Nor shall state agencies be prohibited from requiring, pursuant to other state law, that buildings and equipment be maintained in accordance with provisions of this code. In addition, as established by this code, the building official may refuse to issue a permit until the applicant has supplied certificates of functional design approval from the appropriate state agency. For purposes of coordination, the locality may require reports to the building official by other departments or agencies indicating compliance with their regulations applicable to the functional design of a building or structure as a condition for issuance of a building permit or certificate of occupancy. Such reports shall be based upon review of the plans or inspection of the project as determined by the locality. All enforcement of these conditions shall not be the responsibility of the building official, but rather the agency imposing the condition.

Note: Identified state agencies with functional design approval are listed in the "Related Laws Package," which is available from DHCD.

H. Section 103.6 Amusement devices and inspections. In accordance with § 36-98.3 of the Code of Virginia, to the extent they are not superseded by the provisions of § 36-98.3 of the Code of Virginia and the ~~VADR~~, Virginia Amusement Device Regulations (VADR), the provisions of the USBC shall apply to amusement devices. In addition, as a requirement of this code, inspections for compliance with the VADR shall be conducted either by local building department personnel or private inspectors provided such persons are certified as amusement device inspectors under the ~~VCS~~, Virginia Certification Standards (VCS).

I. Section 103.7 State buildings and structures. This section establishes the application of the USBC to state-owned buildings and structures in accordance with § 36-98.1 of the Code of Virginia. The USBC shall be applicable to all state-owned buildings and structures, with the exception that §§ 2.2-1159 through 2.2-1161 of the Code of Virginia shall provide the standards for ready access to and use of state-owned buildings by the physically handicapped.

Any state-owned building or structure or building built on state-owned property for which preliminary plans were prepared or on which construction commenced after the initial effective date of the USBC, shall remain subject to the provisions of the USBC that were in effect at the time such plans were completed or such construction commenced. Subsequent reconstruction, renovation, or demolition of such building or structure shall be subject to the pertinent provisions of this code.

Acting through the Division of Engineering and Buildings, the Virginia Department of General Services shall function as the building official for state-owned buildings. The department shall review and approve plans and specifications, grant modifications, and establish such rules and regulations as may be necessary to implement this section. It shall provide for the inspection of state-owned buildings and enforcement of the USBC and standards for access by the physically handicapped by delegating inspection and USBC enforcement duties to the State Fire Marshal's Office, to other appropriate state agencies having needed expertise, and to local building departments, all of which shall provide such assistance within a reasonable time and in the manner requested. State agencies and institutions occupying buildings shall pay to the local building department the same fees as would be paid by a private citizen for the services rendered when such services are requested by the department. The

department may alter or overrule any decision of the local building department after having first considered the local building department's report or other rationale given for its decision. When altering or overruling any decision of a local building department, the department shall provide the local building department with a written summary of its reasons for doing so.

Notwithstanding any provision of this code to the contrary, roadway tunnels and bridges owned by the Virginia Department of Transportation shall be exempt from this code. The Virginia Department of General Services shall not have jurisdiction over such roadway tunnels, bridges, and other limited access highways; provided, however, that the Department of General Services shall have jurisdiction over any occupied buildings within any Department of Transportation rights-of-way that are subject to this code.

Except as provided in subsection E of § 23.1-1016 of the Code of Virginia, and notwithstanding any provision of this code to the contrary, at the request of a public institution of higher education, the Virginia Department of General Services, as further set forth in this provision, shall authorize that institution of higher education to contract with a building official of the locality in which the construction is taking place to perform any inspection and certifications required for the purpose of complying with this code. The department shall publish administrative procedures that shall be followed in contracting with a building official of the locality. The authority granted to a public institution of higher education under this provision to contract with a building official of the locality shall be subject to the institution meeting the conditions prescribed in subsection A of § 23.1-1002 of the Code of Virginia.

Note: In accordance with § 36-98.1 of the Code of Virginia, roadway tunnels and bridges shall be designed, constructed, and operated to comply with fire safety standards based on nationally recognized model codes and standards to be developed by the Virginia Department of Transportation in consultation with the State Fire Marshal. Emergency response planning and activities related to the standards shall be developed by the Department of Transportation and coordinated with the appropriate local officials and emergency service providers. On an annual basis, the Department of Transportation shall provide a report on the maintenance and operability of installed fire protection and detection systems in roadway tunnels and bridges to the State Fire Marshal.

J. Section 103.7.1 Certification of state enforcement personnel. State enforcement personnel shall comply with the applicable requirements of Section 105 for certification.

13VAC5-63-40. Section 104 Enforcement, generally.

A. Section 104.1 Scope of enforcement. This section establishes the requirements for enforcement of the USBC in accordance with § 36-105 of the Code of Virginia. Enforcement of the provisions of the USBC for construction and rehabilitation shall be the responsibility of the local building department. Whenever a county or municipality does not have such a building department, the local governing body shall enter into an agreement with the local governing body of another county or municipality or with some other agency, or a state agency approved by DHCD for such enforcement. For the purposes of this section, towns with a population of less than 3,500 may elect to administer and enforce the USBC; however, where the town does not elect to administer and enforce the code, the county in which the town is situated shall administer and enforce the code for the town. In the event such town is situated in

two or more counties, those counties shall administer and enforce the USBC for that portion of the town situated within their respective boundaries.

However, upon a finding by the local building department, following a complaint by a tenant of a residential dwelling unit that is the subject of such complaint, that there may be a violation of the unsafe structures provisions of Part III of the Virginia Uniform Statewide Building Code, also known as the "Virginia Property Maintenance Code," or the "~~VMC~~," "VPMC" the local building department shall enforce such provisions.

If the local building department receives a complaint that a violation of the ~~VMC~~ VPMC exists that is an immediate and imminent threat to the health or safety of the owner, tenant, or occupants of any building or structure, or the owner, occupant, or tenant of any nearby building or structure, and the owner, occupant, or tenant of the building or structure that is the subject of the complaint has refused to allow the local building official or his agent to have access to the subject building or structure, the local building official or his agent may make an affidavit under oath before a magistrate or a court of competent jurisdiction and request that the magistrate or court grant the local building official or his agent an inspection warrant to enable the building official or his agent to enter the subject building or structure for the purpose of determining whether violations of the ~~VMC~~ VPMC exist. After issuing a warrant under this section, the magistrate or judge shall file the affidavit in the manner prescribed by § 19.2-54 of the Code of Virginia. After executing the warrant, the local building official or his agents shall return the warrant to the clerk of the circuit court of the city or county wherein the inspection was made. The local building official or his agent shall make a reasonable effort to obtain consent from the owner, occupant, or tenant of the subject building or structure prior to seeking the issuance of an inspection warrant under this section.

The local governing body shall, however, inspect and enforce the provisions of the ~~VMC~~ VPMC for elevators, escalators, and related conveyances, except for elevators in single-family and two-family homes and townhouses. Such inspection and enforcement shall be carried out by an agency or department designated by the local governing body.

B. Section 104.2 Interagency coordination. When any inspection functions under this code are assigned to a local agency other than the local building department, such agency shall coordinate its reports of inspection with the local building department.

13VAC5-63-50. Section 105 Local building department.

A. Section 105.1 Appointment of building official. Every local building department shall have a building official as the executive official in charge of the department. The building official shall be appointed in a manner selected by the local governing body. After permanent appointment, the building official shall not be removed from office except for cause after having been afforded a full opportunity to be heard on specific and relevant charges by and before the appointing authority. DHCD shall be notified by the appointing authority within 30 days of the appointment or release of a permanent or acting building official.

Note: Building officials are subject to sanctions in accordance with the VCS.

B. Section 105.1.1 Qualifications of building official. The building official shall have at least five years of building experience as a licensed professional engineer or architect, building, fire or trade inspector, contractor, housing inspector or superintendent of building, fire or trade construction or at least five years of building experience after obtaining a degree in architecture or engineering, with at least three years in responsible charge of work. Any combination of education and experience that would confer equivalent knowledge and ability shall be deemed to satisfy this requirement. The building official shall have general knowledge of sound engineering practice in respect to the design and construction of structures, the basic principles of fire prevention, the accepted requirements for means of egress and the installation of elevators and other service equipment necessary for the health, safety and general welfare of the occupants and the public. The local governing body may establish additional qualification requirements.

C. Section 105.1.2 Certification of building official. An acting or permanent building official shall be certified as a building official in accordance with the VCS within one year after being appointed as acting or permanent building official.

Exception: A building official in place prior to April 1, 1983, shall not be required to meet the certification requirements in this section while continuing to serve in the same capacity in the same locality.

D. Section 105.1.3 Noncertified building official. Except for a building official exempt from certification under the exception to Section 105.1.2, any acting or permanent building official who is not certified as a building official in accordance with the VCS shall attend the core module of the Virginia Building Code Academy or an equivalent course in an individual or regional code academy accredited by DHCD within 180 days of appointment. This requirement is in addition to meeting the certification requirement in Section 105.1.2.

Note: Continuing education and periodic training requirements for DHCD certifications are set out in the VCS.

E. Section 105.2 Technical assistants. The building official, subject to any limitations imposed by the locality, shall be permitted to utilize technical assistants to assist the building official in the enforcement of the USBC. DHCD shall be notified by the building official within 60 days of the employment of, contracting with or termination of all technical assistants.

Note: Technical assistants are subject to sanctions in accordance with the VCS.

F. Section 105.2.1 Qualifications of technical assistants. A technical assistant shall have at least three years of experience and general knowledge in at least one of the following areas: building construction; building construction conceptual and administrative processes; building, fire or housing inspections; plumbing, electrical or mechanical trades; or fire protection, elevator or property maintenance work. Any combination of education and experience that would confer equivalent knowledge and ability, including high school technical training programs or college engineering, architecture, or construction degree programs, shall be deemed to satisfy this requirement. The locality may establish additional qualification requirements.

G. Section 105.2.2 Certification of technical assistants. A technical assistant shall be certified in the appropriate subject area within 18 months after becoming a technical assistant. When required by local policy to have two or more certifications, a technical assistant shall obtain the additional certifications within three years from the date of such requirement.

Exceptions:

1. A technical assistant in place prior to March 1, 1988, shall not be required to meet the certification requirements in this section while continuing to serve in the same capacity in the same locality.
2. A permit technician in place prior to the effective date of the 2015 edition of the code shall not be required to meet the certification requirements in this section while continuing to serve in the same capacity in the same locality.

Note: Continuing education and periodic training requirements for DHCD certifications are set out in the VCS.

H. Section 105.3 Conflict of interest. The standards of conduct for building officials and technical assistants shall be in accordance with the provisions of the State and Local Government Conflict of Interests Act, Chapter 31 (§ 2.2-3100 et seq.) of Title 2.2 of the Code of Virginia.

I. Section 105.4 Records. The local building department shall retain a record of applications received, permits, certificates, notices and orders issued, fees collected and reports of inspection in accordance with The Library of Virginia's General Schedule Number Six.

13VAC5-63-60. Section 106 Powers and duties of the building official.

A. Section 106.1 Powers and duties, generally. The building official shall enforce this code as set out herein and as interpreted by the State Review Board.

B. Section 106.2 Delegation of authority. The building official may delegate powers and duties except where such authority is limited by the local government. However, such limitations of authority by the local government are not applicable to the third-party inspector policy required by Section 113.7.1 nor shall such limitations of authority by the local government have the effect of altering the provisions of this code or creating building regulations. When such delegations are made, the building official shall be responsible for assuring that they are carried out in accordance with the provisions of this code.

C. Section 106.3 Issuance of modifications. Upon written application by an owner or an owner's agent, the building official may approve a modification of any provision of the USBC provided the spirit and functional intent of the code are observed and public health, welfare and safety are assured. The decision of the building official concerning a modification shall be made in writing and the application for a modification and the decision of the building official concerning such modification shall be retained in the permanent records of the local building department.

Note: The USBC references nationally recognized model codes and standards. Future amendments to such codes and standards are not automatically included in the USBC; however the building official should give them due consideration in deciding whether to approve a modification.

D. Section 106.3.1 Substantiation of modification. The building official may require or may consider a statement from a registered design professional (RDP) or other person competent in the subject area of the application as to the equivalency of the proposed modification. In addition, the building official may require the application to include construction documents sealed by an RDP. The building official may also consider nationally recognized guidelines in deciding whether to approve a modification.

E. Section 106.3.2 Use of performance code. Compliance with the provisions of a nationally recognized performance code when approved as a modification shall be considered to constitute compliance with this code. All documents submitted as part of such consideration shall be retained in the permanent records of the local building department.

13VAC5-63-70. Section 107 Fees.

A. Section 107.1 Authority for charging fees. In accordance with § 36-105 of the Code of Virginia, fees may be levied by the local governing body in order to defray the cost of enforcement of the USBC. With the exception of the levy collected pursuant to Section 107.2, fees levied pursuant to this section shall be used only to support the functions of the local building department.

Note: See subsection D of § 36-105 of the Code of Virginia for rules for permit fees involving property with easements or liens.

B. Section 107.1.1 Fee schedule. The local governing body shall establish a fee schedule incorporating unit rates, which may be based on square footage, cubic footage, estimated cost of construction, or other appropriate criteria. A permit or any amendments to an existing permit shall not be issued until the designated fees have been paid, except that the building official may authorize the delayed payment of fees.

C. Section 107.1.2 Refunds. When requested in writing by a permit holder, the locality shall provide a fee refund in the case of the revocation of a permit or the abandonment or cancellation of a building project. The refund shall not be required to exceed an amount that correlates to work not completed.

D. Section 107.1.3 Fees for generators used with amusement devices. Fees for generators and associated wiring used with amusement devices shall only be charged under the Virginia Amusement Device Regulations (13VAC5-31).

E. Section 107.2 Code academy fee levy. In accordance with subdivision 7 of § 36-137 of the Code of Virginia, the local building department shall collect a 2.0% levy of fees charged for permits issued under this code and transmit it quarterly to DHCD to support training programs of the Virginia Building Code Academy. Localities that maintain individual or regional training academies accredited by DHCD shall retain such levy.

13VAC5-63-80. Section 108 Application for permit.

A. Section 108.1 When applications are required. Application for a permit shall be made to the building official and a permit shall be obtained prior to the commencement of any of the following activities, except that applications for emergency construction, alterations, or equipment replacement shall be submitted by the end of the first working day that follows the day such work commences. In addition, the building official may authorize work to commence pending the receipt of an application or the issuance of a permit.

1. Construction or demolition of a building or structure. Installations or alterations involving (i) the removal or addition of any wall, partition, or portion thereof; (ii) any structural component; (iii) the repair or replacement of any required component of a fire or smoke rated assembly; (iv) the alteration of any required means of egress system, including the addition or removal of emergency supplemental hardware; (v) water supply and distribution system, sanitary drainage system, or vent system; (vi) electric wiring; (vii) fire protection system, mechanical systems, or fuel supply systems; or (viii) any equipment regulated by the USBC.
2. For change of occupancy, application for a permit shall be made when a new certificate of occupancy is required by the VEBC.
3. Movement of a lot line that increases the hazard to or decreases the level of safety of an existing building or structure in comparison to the building code under which such building or structure was constructed.
4. Removal or disturbing of any asbestos containing materials during the construction or demolition of a building or structure, including additions.

B. Section 108.2 Exemptions from application for permit. Notwithstanding the requirements of Section 108.1, application for a permit and any related inspections shall not be required for the following; however, this section shall not be construed to exempt such activities from other applicable requirements of this code. In addition, when an owner or an owner's agent requests that a permit be issued for any of the following, then a permit shall be issued and any related inspections shall be required.

1. Installation of wiring and equipment that (i) operates at less than 50 volts, (ii) is for broadband communications systems, (iii) is exempt under Section 102.3(1) or 102.3(4), or (iv) is for monitoring or automation systems in dwelling units, except when any such installations are located in a plenum, penetrate fire rated or smoke protected construction, or are a component of any of the following:
 - 1.1. Fire alarm system.
 - 1.2. Fire detection system.
 - 1.3. Fire suppression system.
 - 1.4. Smoke control system.

- 1.5. Fire protection supervisory system.
- 1.6. Elevator fire safety control system.
- 1.7. Access or egress control system or delayed egress locking or latching system.
- 1.8. Fire damper.
- 1.9. Door control system.
2. One story detached structures used as tool and storage sheds, playhouses, or similar uses, provided the building area does not exceed 256 square feet (23.78 m²) and the structures are not classified as a Group F-1 or H occupancy.
3. Detached prefabricated buildings housing the equipment of a publicly regulated utility service, provided the floor area does not exceed 150 square feet (14 m²).
4. Tents, air-supported structures, or both that cover an area of 900 square feet (84 m²) or less, including within that area all connecting areas or spaces with a common means of egress or entrance, provided such tents or structures have an occupant load of 50 or less persons.
5. Fences of any height unless required for pedestrian safety as provided for by Section 3306 or used for the barrier for a swimming pool.
6. Concrete or masonry walls, provided such walls do not exceed six feet (1829 mm) in height above the finished grade. Ornamental column caps shall not be considered to contribute to the height of the wall and shall be permitted to extend above the six feet height measurement.
7. Retaining walls supporting less than three feet (914 mm) of unbalanced fill that are not constructed for the purpose of impounding Class I, II, or III-A liquids or supporting a surcharge other than ordinary unbalanced fill.
8. Swimming pools that have a surface area not greater than 150 square feet (13.95 m²) and are less than 24 inches (610 mm) deep.
9. Signs under the conditions in Section H101.2 of Appendix H.
10. Replacement of aboveground existing LP-gas containers of the same capacity in the same location and associated regulators when installed by the serving gas supplier.
11. Flagpoles 30 feet (9144 mm) or less in height.
12. Temporary ramps serving dwelling units in Groups R-3 and R-5 occupancies where the height of the entrance served by the ramp is no more than 30 inches (762 mm) above grade.
13. Construction work deemed by the building official to be minor and ordinary and that does not adversely affect public health or general safety.
14. Ordinary repairs that include the following:

14.1. Replacement of windows and doors with windows and doors of similar operation and opening dimensions that do not require changes to the existing framed opening and that are not required to be fire rated in Group R-2 where serving a single dwelling unit and in Groups R-3, R-4, and R-5.

14.2. Replacement of plumbing fixtures and well pumps in all groups without alteration of the water supply and distribution systems, sanitary drainage systems, or vent systems.

14.3. Replacement of general use snap switches, dimmer and control switches, 125 volt-15 or 20 ampere receptacles, luminaires (lighting fixtures), and ceiling (paddle) fans in Group R-2 where serving a single dwelling unit and in Groups R-3, R-4, and R-5.

14.4. Replacement of mechanical appliances provided such equipment is not fueled by gas or oil in Group R-2 where serving a single-family dwelling and in Groups R-3, R-4, and R-5.

14.5. Replacement of an unlimited amount of roof covering or siding in Group R-3, R-4, or R-5 provided the building or structure is not in an area where the nominal design wind speed is greater than 100 miles per hour (44.7 meters per second) and replacement of 100 square feet (9.29 m²) or less of roof covering in all groups and all wind zones.

14.6. Replacement of 256 square feet (23.78 m²) or less of roof decking in Group R-3, R-4, or R-5 unless the decking to be replaced was required at the time of original construction to be fire-retardant-treated or protected in some other way to form a fire-rated wall termination.

14.7. Installation or replacement of floor finishes in all occupancies.

14.8. Replacement of Class C interior wall or ceiling finishes installed in Groups A, E, and I and replacement of all classes of interior wall or ceiling finishes in other groups.

14.9. Installation or replacement of cabinetry or trim.

14.10. Application of paint or wallpaper.

14.11. Other repair work deemed by the building official to be minor and ordinary which does not adversely affect public health or general safety.

15. Crypts, mausoleums, and columbaria structures not exceeding 1,500 square feet (139.35 m²) in area if the building or structure is not for occupancy and used solely for the interment of human or animal remains and is not subject to special inspections.

16. Billboard safety upgrades to add or replace steel catwalks, steel ladders, or steel safety cable.

Exceptions:

1. Application for a permit may be required by the building official for the installation of replacement siding, roofing, and windows in buildings within a historic district designated by a locality pursuant to § 15.2-2306 of the Code of Virginia.

2. Application for a permit may be required by the building official for any items exempted in this section that are located in a special flood hazard area.

C. Section 108.3 Applicant information, processing by mail. Application for a permit shall be made by the owner or lessee of the relevant property or the agent of either or by the RDP, contractor, or subcontractor associated with the work or any of their agents. The full name and address of the owner, lessee, and applicant shall be provided in the application. If the owner or lessee is a corporate body, when and to the extent determined necessary by the building official, the full name and address of the responsible officers shall also be provided.

A permit application may be submitted by mail and such permit applications shall be processed by mail, unless the jurisdiction offers an online permit option for permit application and processing or the permit applicant voluntarily chooses otherwise. In no case shall an applicant be required to appear in person.

The building official may accept applications for a permit through electronic submissions provided the information required by this section is obtained.

D. Section 108.4 Prerequisites to obtaining permit. In accordance with § 54.1-1111 of the Code of Virginia, any person applying to the building department for the construction, removal, or improvement of any structure shall furnish prior to the issuance of the permit either (i) satisfactory proof to the building official that the person is duly licensed or certified under the terms ~~of~~ of Chapter 11 (§ 54.1-1100 et seq.) of Title 54.1 of the Code of Virginia to carry out or superintend the same or (ii) file a written statement that the person is not subject to licensure or certification as a contractor or subcontractor pursuant to Chapter 11 of Title 54.1 of the Code of Virginia. The applicant shall also furnish satisfactory proof that the taxes or license fees required by any county, city, or town have been paid so as to be qualified to bid upon or contract for the work for which the permit has been applied.

E. Section 108.5 Mechanics' lien agent designation. In accordance with § 36-98.01 of the Code of Virginia, a building permit issued for any one-family or two-family residential dwelling shall at the time of issuance contain, at the request of the applicant, the name, mailing address, and telephone number of the mechanics' lien agent as defined in § 43-1 of the Code of Virginia. If the designation of a mechanics' lien agent is not so requested by the applicant, the building permit shall at the time of issuance state that none has been designated with the words "None Designated."

Note: In accordance with § 43-4.01 A of the Code of Virginia, a permit may be amended after it has been initially issued to name a mechanics' lien agent or a new mechanics' lien agent.

F. Section 108.6 Application form, description of work. The application for a permit shall be submitted on a form supplied by the local building department. The application shall contain a general description and location of the proposed work and such other information as determined necessary by the building official.

G. Section 108.7 Amendments to application. An application for a permit may be amended at any time prior to the completion of the work governed by the permit. Additional construction documents or other records may also be submitted in a like manner. All such submittals shall have the same effect as if filed with the original application for a permit and shall be retained in a like manner as the original filings.

H. Section 108.8 Time limitation of application. An application for a permit for any proposed work shall be deemed to have been abandoned six months after the date of filing unless such application has been pursued in good faith or a permit has been issued, except that the building official is authorized to grant one or more extensions of time if a justifiable cause is demonstrated.

13VAC5-63-90. Section 109 Construction documents.

A. Section 109.1 Submittal of documents. Construction documents shall be submitted with the application for a permit. The number of sets of such documents to be submitted shall be determined by the locality. Construction documents for one- and two-family dwellings may have floor plans reversed provided an accompanying site plan is approved.

Exception: Construction documents do not need to be submitted when the building official determines the proposed work is of a minor nature.

Note: Information on the types of construction required to be designed by an RDP is included in the "Related Laws Package" available from DHCD.

B. Section 109.2 Site plan. When determined necessary by the building official, a site plan shall be submitted with the application for a permit. The site plan shall show to scale the size and location of all proposed construction, including any associated wells, septic tanks or drain fields. The site plan shall also show to scale the size and location of all existing structures on the site, the distances from lot lines to all proposed construction, the established street grades and the proposed finished grades. When determined necessary by the building official, the site plan shall contain the elevation of the lowest floor of any proposed buildings. The site plan shall also be drawn in accordance with an accurate boundary line survey. When the application for a permit is for demolition, the site plan shall show all construction to be demolished and the location and size of all existing structures that are to remain on the site.

Note: Site plans are generally not necessary for alterations, renovations, repairs or the installation of equipment.

C. Section 109.3 Engineering details. When determined necessary by the building official, construction documents shall include adequate detail of the structural, mechanical, plumbing or electrical components. Adequate detail may include computations, stress diagrams or other essential technical data and when proposed buildings are more than two stories in height, adequate detail may specifically be required to include where floor penetrations will be made for pipes, wires, conduits, and other components of the electrical, mechanical and plumbing systems and how such floor penetrations will be protected to maintain the required structural integrity or fire-resistance rating, or both. When dry floodproofing is provided, the engineering details shall include detail of the walls, floors, and flood

shields designed to resist flood-related loads, including the sealing of floor and wall penetrations. All engineered documents, including relevant computations, shall be sealed by the RDP responsible for the design.

D. Section 109.4 Examination of documents. The building official shall examine or cause to be examined all construction documents or site plans, or both, within a reasonable time after filing. If such documents or plans do not comply with the provisions of this code, the permit applicant shall be notified in writing of the reasons, which shall include any adverse construction document review comments or determinations that additional information or engineering details need to be submitted. The review of construction documents for new one- and two-family dwellings for determining compliance with the technical provisions of this code not relating to the site, location or soil conditions associated with the dwellings shall not be required when identical construction documents for identical dwellings have been previously approved in the same locality under the same edition of the code and such construction documents are on file with the local building department.

E. Section 109.4.1 Expedited construction document review. The building official may accept reports from an approved person or agency that the construction documents have been examined and conform to the requirements of the USBC and may establish requirements for the person or agency submitting such reports. In addition, where such reports have been submitted, the building official may expedite the issuance of the permit.

F. Section 109.5 Approval of construction documents. The approval of construction documents shall be limited to only those items within the scope of the USBC. Either the word "Approved" shall be stamped on all required sets of approved construction documents or an equivalent endorsement in writing shall be provided. One set of the approved construction documents shall be retained for the records of the local building department and one set shall be kept at the building site and shall be available to the building official at all reasonable times.

G. Section 109.6 Phased approval. The building official is authorized to issue a permit for the construction of foundations or any other part of a building or structure before the construction documents for the whole building or structure have been submitted, provided that adequate information and detailed statements have been filed complying with pertinent requirements of this code. The holder of such permit for the foundation or other parts of a building or structure shall proceed at the holder's own risk with the building operation and without assurance that a permit for the entire structure will be granted.

13VAC5-63-100. Section 110 Permits.

A. Section 110.1 Approval and issuance of permits. The building official shall examine or cause to be examined all applications for permits or amendments to such applications within a reasonable time after filing. If the applications or amendments do not comply with the provisions of this code or all pertinent laws and ordinances, the permit shall not be issued and the permit applicant shall be notified in writing of the reasons for not issuing the permit. If the application complies with the applicable requirements of

this code, a permit shall be issued as soon as practicable. The issuance of permits shall not be delayed in an effort to control the pace of construction of new detached one-family or two-family dwellings.

B. Section 110.1.1 Consultation and notification. Prior to approval or removal of emergency supplemental hardware, the building code official shall consult with the local fire code official, or state fire code official if no local fire code official exists, and head of the local law-enforcement agency. The local fire code official; the state fire code official; and the local fire, EMS, and law-enforcement first responders shall be notified by the building code official of such approval or removal after approval or removal of such emergency supplemental hardware.

C. Section 110.2 Types of permits. Separate or combined permits may be required for different areas of construction, such as building construction, plumbing, electrical, and mechanical work, or for special construction as determined appropriate by the locality. In addition, permits for two or more buildings or structures on the same lot may be combined. Annual permits may also be issued for any construction regulated by this code. The annual permit holder shall maintain a detailed record of all alterations made under the annual permit. Such record shall be available to the building official and shall be submitted to the local building department if requested by the building official.

D. Section 110.3 Asbestos inspection in buildings to be renovated or demolished; exceptions. In accordance with § 36-99.7 of the Code of Virginia, the local building department shall not issue a building permit allowing a building for which an initial building permit was issued before January 1, 1985, to be renovated or demolished until the local building department receives certification from the owner or the owner's agent that the affected portions of the building have been inspected for the presence of asbestos by an individual licensed to perform such inspections pursuant to § 54.1-503 of the Code of Virginia and that no asbestos-containing materials were found or that appropriate response actions will be undertaken in accordance with the requirements of the Clean Air Act National Emission Standard for the Hazardous Air Pollutant (NESHAPS) (40 CFR Part 61, Subpart M), and the asbestos worker protection requirements established by the U.S. Occupational Safety and Health Administration for construction workers (29 CFR 1926.1101). Local educational agencies that are subject to the requirements established by the Environmental Protection Agency under the Asbestos Hazard Emergency Response Act (AHERA) shall also certify compliance with 40 CFR Part 763 and subsequent amendments thereto.

To meet the inspection requirements in this section, except with respect to schools, asbestos inspection of renovation projects consisting only of repair or replacement of roofing, floorcovering, or siding materials may be satisfied by a statement that the materials to be repaired or replaced are assumed to contain friable asbestos and that asbestos installation, removal, or encapsulation will be accomplished by a licensed asbestos contractor.

The provisions of this section shall not apply to single-family dwellings or residential housing with four or fewer units unless the renovation or demolition of such buildings is for commercial or public development purposes. The provisions of this section shall not apply if the combined amount of regulated asbestos-containing material involved in the renovation or demolition is less than 260 linear feet (79248 mm) on pipes or less than 160 (14.86 m²) square feet on other facility components or less

than 35 cubic feet (1 m³) off facility components where the length or area could not be measured previously.

An abatement area shall not be reoccupied until the building official receives certification from the owner that the response actions have been completed and final clearances have been measured. The final clearance levels for reoccupancy of the abatement area shall be 0.01 or fewer asbestos fibers per cubic centimeter if determined by Phase Contrast Microscopy analysis (PCM) or 70 or fewer structures per square millimeter if determined by Transmission Electron Microscopy analysis (TEM).

E. Section 110.4 Fire apparatus access road requirements. The permit applicant shall be informed of any requirements for providing or maintaining fire apparatus access roads prior to the issuance of a building permit.

F. Section 110.5 Posting of permits; limitation of approval. A copy of the permit shall be posted on the construction site for public inspection until the work is completed. Such posting shall include the street or lot number if one has been assigned, to be readable from a public way. In addition, each building or structure to which a street number has been assigned shall, upon completion, have the number displayed so as to be readable from the public way.

A permit shall be considered authority to proceed with construction in accordance with this code, the approved construction documents, the permit application, and any approved amendments or modifications. The permit shall not be construed to otherwise authorize the omission or amendment of any provision of this code.

G. Section 110.6 Abandonment of work. A building official shall be permitted to revoke a permit if work on the site authorized by the permit is not commenced within six months after issuance of the permit or if the authorized work on the site is suspended or abandoned for a period of six months after the permit is issued; however, permits issued for plumbing, electrical, and mechanical work shall not be revoked if the building permit is still in effect. It shall be the responsibility of the permit applicant to prove to the building official that authorized work includes substantive progress, characterized by approved inspections as specified in Section 113.3 of at least one inspection within a period of six months or other evidence that would indicate substantial work has been performed. Upon written request, the building official may grant one or more extensions of time, not to exceed one year per extension.

H. Section 110.7 Single-family dwelling permits. The building official shall be permitted to require a three-year time limit to complete construction of new detached single-family dwellings, additions to detached single-family dwellings, and residential accessory structures. The time limit shall begin from the issuance date of the permit. The building official may grant extensions of time if the applicant can demonstrate substantive progress, characterized by approved inspections as specified in Section 113.3 of at least one inspection within a period of six months or other evidence that would indicate substantial work has been performed.

I. Section 110.8 Revocation of a permit. The building official may revoke a permit or approval issued under this code in the case of any false statement, misrepresentation of fact, abandonment of work, failure to complete construction as required by Section 110.7, noncompliance with provisions of this

code and pertinent laws and ordinances, or incorrect information supplied by the applicant in the application or construction documents on which the permit or approval was based.

J. Section 110.9 Cancellation of permit. The building official shall cancel a permit at the request of the permit holder or the owner. An incomplete building or structure shall not be left as an unsafe building or structure.

13VAC5-63-110. Section 111 RDP services.

A. Section 111.1 When required. In accordance with § 54.1-410 of the Code of Virginia and under the general authority of this code, the local building department shall establish a procedure to ensure that construction documents under Section 109 are prepared by an RDP in any case in which the exemptions contained in § 54.1-401, 54.1-402 or 54.1-402.1 of the Code of Virginia are not applicable or in any case where the building official determines it necessary. When required under § 54.1-402 of the Code of Virginia or when required by the building official, or both, construction documents shall bear the name and address of the author and his occupation.

Note: Information on the types of construction required to be designed by an RDP is included in the "Related Laws Package" available from DHCD.

B. Section 111.2 Special inspection requirements. Special inspections shall be conducted when required by Section 1704. Individuals or agencies, or both, conducting special inspections shall meet the qualification requirements of Sections 1703 and 1704.2.1. The permit applicant shall submit a completed statement of special inspections with the permit application. The building official shall review, and if satisfied that the requirements have been met, approve the statement of special inspections as required in Sections 1704.2.3 and 1705 as a requisite to the issuance of a building permit. The building official may require interim inspection reports. The building official shall receive, and if satisfied that the requirements have been met, approve a final report of special inspections as specified in Section 1704.2.4. All fees and costs related to the special inspections shall be the responsibility of the building owner.

13VAC5-63-120. Section 112 Workmanship, materials and equipment.

A. Section 112.1 General. It shall be the duty of any person performing work covered by this code to comply with all applicable provisions of this code and to perform and complete such work so as to secure the results intended by the USBC. Damage to regulated building components caused by violations of this code or by the use of faulty materials or installations shall be considered as separate violations of this code and shall be subject to the applicable provisions of Section 115.

B. Section 112.2 Alternative methods or materials. In accordance with § 36-99 of the Code of Virginia, where practical, the provisions of this code are stated in terms of required level of performance so as to facilitate the prompt acceptance of new building materials and methods. When generally recognized standards of performance are not available, this section and other applicable requirements of this code provide for acceptance of materials and methods whose performance is substantially equal in safety to those specified on the basis of reliable test and evaluation data presented by the proponent. In addition,

as a requirement of this code, the building official shall require that sufficient technical data be submitted to substantiate the proposed use of any material, equipment, device, assembly or method of construction. The building official may consider nationally recognized guidelines in making a determination.

C. Section 112.3 Documentation and approval. In determining whether any material, equipment, device, assembly or method of construction complies with this code, the building official shall approve items listed by nationally recognized testing laboratories, when such items are listed for the intended use and application, and in addition, may consider the recommendations of RDPs. Approval shall be issued when the building official finds that the proposed design is satisfactory and complies with the intent of the provisions of this code and that the material, equipment, device, assembly or method of construction offered is, for the purpose intended, at least the equivalent of that prescribed by the code. Such approval is subject to all applicable requirements of this code and the material, equipment, device, assembly or method of construction shall be installed in accordance with the conditions of the approval and their listings. In addition, the building official may revoke such approval whenever it is discovered that such approval was issued in error or on the basis of incorrect information, or where there are repeated violations of the USBC.

D. Section 112.3.1 Conditions of listings. Where conflicts between this code and conditions of the listing or the manufacturer's installation instructions occur, the provisions of this code shall apply.

Exception: Where a code provision is less restrictive than the conditions of the listing of the equipment or appliance or the manufacturer's installation instructions, the conditions of the listing and the manufacturer's installation instructions shall apply.

E. Section 112.4 Used material and equipment. Used materials, equipment and devices may be approved provided they have been reconditioned, tested or examined and found to be in good and proper working condition and acceptable for use by the building official.

F. Section 112.5 Defective materials. Notwithstanding any provision of this code to the contrary, where action has been taken and completed by the BHCD Virginia Board of Housing and Community Development (BHCD) under subsection D of § 36-99 of the Code of Virginia establishing new performance standards for identified defective materials, this section sets forth the new performance standards addressing the prospective use of such materials and establishes remediation standards for the removal of any defective materials already installed, which when complied with enables the building official to certify that the building is deemed to comply with the edition of the USBC under which the building was originally constructed with respect to the remediation of the defective materials.

G. Section 112.5.1 Drywall, performance standard. All newly installed gypsum wallboard shall not be defective drywall as defined in Section 112.5.1.1.1.

H. Section 112.5.1.1 Remediation standards. The following provisions establish remediation standards where defective drywall was installed in buildings.

I. Section 112.5.1.1.1 Definition. For the purposes of this section the term "defective drywall" means gypsum wallboard that (i) contains elemental sulfur exceeding 10 parts per million that when exposed to heat or humidity, or both, emits volatile sulfur compounds in quantities that cause observable corrosion on electrical wiring, plumbing pipes, fuel gas lines, or HVAC equipment, or any components of the foregoing or (ii) has been designated by the U.S. Consumer Product Safety Commission as a product with a product defect that constitutes a substantial product hazard within the meaning of § 15(a)(2) of the Consumer Product Safety Act (15 USC § 2064(a)(2)).

J. Section 112.5.1.1.2 Permit. Application for a permit shall be made to the building official, and a permit shall be obtained prior to the commencement of remediation work undertaken to remove defective drywall from a building and for the removal, replacement, or repair of corroded electrical, plumbing, mechanical, or fuel gas equipment and components.

K. Section 112.5.1.1.3 Protocol. Where remediation of defective drywall is undertaken, the following standards shall be met. The building official shall be permitted to consider and approve modifications to these standards in accordance with Section 106.3.

L. Section 112.5.1.1.3.1 Drywall. Drywall in the building, whether defective or nondefective, shall be removed and discarded, including fasteners that held any defective drywall to prevent small pieces of drywall from remaining under fasteners.

Exceptions:

1. Nondefective drywall not subject to the corrosive effects of any defective drywall shall be permitted to be left in place in buildings where the defective drywall is limited to a defined room or space or isolated from the rest of the building and the defective drywall can be positively identified. If the room or space containing the defective drywall also contains any nondefective drywall, the nondefective drywall in that room or space shall also be removed.
2. In multifamily buildings where defective drywall was not used in the firewalls between units and there are no affected building systems behind the firewalls, the firewalls shall be permitted to be left in place.

M. Section 112.5.1.1.3.2 Insulation and other building components. Insulation in walls and ceilings shall be removed and discarded. Carpet and vinyl flooring shall be removed and discarded. Woodwork, trim, cabinets, and tile or wood floors may be left in place or may be reused.

Exceptions:

1. Closed-cell foam insulation is permitted to be left in place if testing for off-gassing from defective drywall is negative, unless its removal is required to gain access.
2. Insulation, carpet, or vinyl flooring in areas not exposed to defective drywall or to the effects of defective drywall, may be left in place or reused.

N. Section 112.5.1.1.3.3 Electrical wiring, equipment, devices, and components. All electrical wiring regulated by this code shall be permitted to be left in place, but removal or cleaning of exposed ends of the wiring to reveal clean or uncorroded surfaces is required. All electrical equipment, devices, and components of the electrical system of the building regulated by this code shall be removed and discarded. This shall include all smoke detectors.

Exceptions:

1. Electrical equipment, devices, or components in areas not exposed to the corrosive effects of defective drywall shall be permitted to be left in place or reused. Electrical equipment, devices, or components in areas exposed to the corrosive effects of defective drywall shall be cleaned, repaired, or replaced.
2. Cord and plug connected appliances are not subject to this code and, therefore, cannot be required to be removed or replaced.

Note: All low-voltage wiring associated with security systems, door bells, elevator controls, and other such components shall be removed and replaced or repaired.

O. Section 112.5.1.1.3.4 Plumbing and fuel gas piping, fittings, fixtures, and equipment. All copper fuel gas piping and all equipment utilizing fuel gas with copper, silver, or aluminum components shall be removed and discarded. All copper plumbing pipes and fittings shall be removed and discarded. Plumbing fixtures with copper, silver, or aluminum components shall be removed and discarded.

Exception: Plumbing or fuel gas piping, fittings, fixtures, equipment, or components in areas not exposed to the corrosive effects of defective drywall shall be permitted to be left in place or reused.

P. Section 112.5.1.1.3.5 Mechanical systems. All heating, air-conditioning, and ventilation system components, including ductwork, air-handling units, furnaces, heat pumps, refrigerant lines, and thermostats and associated wiring, shall be removed and discarded.

Exception: Mechanical system components in areas not exposed to the corrosive effects of defective drywall shall be permitted to be left in place or reused.

Q. Section 112.5.1.1.3.6 Cleaning. Following the removal of all materials and components in accordance with Sections 112.5.1.1.3.1 through 112.5.1.1.3.5, the building shall be thoroughly cleaned to remove any particulate matter and dust.

R. Section 112.5.1.1.3.7 Airing out. Following cleaning in accordance with Section 112.5.1.1.3.6, the building shall be thoroughly aired out with the use of open windows and doors and fans.

S. Section 112.5.1.1.3.8 Pre-rebuilding clearance testing. Following the steps outlined above for removal of all materials and components, cleaning and airing out, a pre-rebuilding clearance test shall be conducted with the use of copper or silver coupons and the methodology outlined in the April 2, 2010, joint report by the Consumer Products Safety Commission and the Department of Housing and Urban Development "Interim Remediation Guidance for Homes with Corrosion from Problem Drywall" or with

the use of a copper probe and dosimeter. The clearance testing shall confirm that all airborne compounds associated with the defective drywall are at usual environmental background levels. The clearance testing report, certifying compliance, shall be submitted to the building official.

Notes:

1. Where the building is served by a well and prior to conducting clearance tests, all outlets in piping served by the well should be capped or otherwise plugged to prevent contamination of the air sample.
2. To prevent siphoning and evaporation of the trap seals, fixtures should be capped or otherwise plugged to prevent sewer gases from contaminating the air sample.

T. Section 112.5.1.1.3.9 Testing agencies and personnel. Agencies and personnel performing pre-rebuilding or post-rebuilding clearance testing shall be independent of those responsible for all other remediation work and the agencies and personnel shall be appropriately certified or accredited by the Council of Engineering and Scientific Specialty Boards, the American Indoor Air Quality Council, or the World Safety Organization.

Exception: Testing agencies and personnel shall be accepted if certified by an RDP or if the agency employs an RDP to be in responsible charge of the work.

U. Section 112.5.1.1.3.10 Rebuilding standards. The rebuilding of the building shall comply with the edition of the USBC that was in effect when the building was originally built.

V. Section 112.5.1.1.3.11 Post-rebuilding clearance testing. A post-rebuilding clearance test prior to reoccupancy of the building or structure shall be conducted with the use of copper or silver coupons and the methodology outlined in the April 2, 2010, joint report by the U.S. Consumer Products Safety Commission and by the Department of Housing and Urban Development "Interim Remediation Guidance for Homes with Corrosion from Problem Drywall" or with the use of a copper probe and dosimeter. The clearance testing shall confirm that all airborne compounds associated with the defective drywall are at usual environmental background levels. The clearance testing report certifying compliance shall be submitted to the building official.

Notes:

1. Where the building is served by a well and prior to conducting clearance tests, all outlets in piping served by the well should be capped or otherwise plugged to prevent contamination of the air sample.
2. To prevent siphoning and evaporation of the trap seals, fixtures should be capped or otherwise plugged to prevent sewer gases from contaminating the air sample.

W. Section 112.5.1.1.4 Final approval by the building official. Once remediation has been completed in accordance with this section, a certificate or letter of approval shall be issued by the building official. The certificate or letter shall state that the remediation and rebuilding is deemed to comply with this code.

X. Section 112.5.1.1.4.1 Approval of remediation occurring prior to these standards. The building official shall issue a certificate or letter of approval for remediation of defective drywall that occurred prior to the effective date of these standards provided post-rebuilding clearance testing has been performed in accordance with Section 112.5.1.1.3.11, by agencies and personnel complying with Section 112.5.1.1.3.9, and the clearance testing confirms that all airborne compounds associated with the defective drywall are at usual environmental background levels. The clearance testing report certifying compliance shall be submitted to the building official.

13VAC5-63-130. Section 113 Inspections.

A. Section 113.1 General. In accordance with § 36-105 of the Code of Virginia, any building or structure may be inspected at any time before completion and shall not be deemed in compliance until approved by the inspecting authority. Where the construction cost is less than \$2,500, however, the inspection may, in the discretion of the inspecting authority, be waived. The building official shall coordinate all reports of inspections for compliance with the USBC, with inspections of fire and health officials delegated such authority, prior to the issuance of an occupancy permit.

B. Section 113.1.1 Equipment required. Any ladder, scaffolding, or test equipment necessary to conduct or witness a requested inspection shall be provided by the permit holder.

C. Section 113.1.2 Duty to notify. When construction reaches a stage of completion that requires an inspection, the permit holder shall notify the building official.

D. Section 113.1.3 Duty to inspect. Except as provided for in Section 113.7, the building official shall perform the requested inspection in accordance with Section 113.6 when notified in accordance with Section 113.1.2.

E. Section 113.2 Prerequisites. The building official may conduct a site inspection prior to issuing a permit. When conducting inspections pursuant to this code, all personnel shall carry proper credentials.

F. Section 113.3 Minimum inspections. The following minimum inspections shall be conducted by the building official when applicable to the construction or permit:

1. Inspection of footing excavations and reinforcement material for concrete footings prior to the placement of concrete.
2. Inspection of foundation systems during phases of construction necessary to ensure compliance with this code.
3. Inspection of preparatory work prior to the placement of concrete.
4. Inspection of structural members and fasteners prior to concealment.
5. Inspection of electrical, mechanical and plumbing materials, equipment, and systems prior to concealment.
6. Inspection of energy conservation material prior to concealment.

7. Final inspection.

G. 113.3.1 Equipment changes. Upon the replacement or new installation of any fuel-burning appliances or equipment in existing Group R-5 occupancies, an inspection shall be conducted to ensure that the connected vent or chimney systems comply with the following:

1. Vent or chimney systems are sized in accordance with the IRC.
2. Vent or chimney systems are clean, free of any obstruction or blockages, defects, or deterioration, and are in operable condition. Where not inspected by the local building department, persons performing such changes or installations shall certify to the building official that the requirements of Items 1 and 2 of this section are met.

H. 113.3.2 Lowest floor elevation. In flood hazard areas, upon placement of the lowest floor, including the basement, and prior to further vertical construction, the elevation certification required in Section 1612.4 shall be submitted to the building official.

I. 113.3.3 Flood hazard documentation. If located in a flood hazard area, documentation of the elevation of the lowest floor or the elevation of dry floodproofing, if applicable, as required in Section 1612.4 shall be submitted to the building official prior to the final inspection.

J. Section 113.4 Additional inspections. The building official may designate additional inspections and tests to be conducted during the construction of a building or structure and shall so notify the permit holder.

K. Section 113.5 In-plant and factory inspections. When required by the provisions of this code, materials, equipment, or assemblies shall be inspected at the point of manufacture or fabrication. The building official shall require the submittal of an evaluation report of such materials, equipment, or assemblies. The evaluation report shall indicate the complete details of the assembly including a description of the assembly and its components and describe the basis upon which the assembly is being evaluated. In addition, test results and other data as necessary for the building official to determine conformance with the USBC shall be submitted. For factory inspections, an identifying label or stamp permanently affixed to materials, equipment, or assemblies indicating that a factory inspection has been made shall be acceptable instead of a written inspection report, provided the intent or meaning of such identifying label or stamp is properly substantiated.

L. Section 113.6 Approval or notice of defective work. The building official shall either approve the work in writing or give written notice of defective work to the permit holder. Upon request of the permit holder, the notice shall reference the USBC section that serves as the basis for the defects, and such defects shall be corrected and reinspected before any work proceeds that would conceal such defects. A record of all reports of inspections, tests, examinations, discrepancies, and approvals issued shall be maintained by the building official and shall be communicated promptly in writing to the permit holder. Approval issued under this section may be revoked whenever it is discovered that such approval was issued in error or on the basis of incorrect information, or where there are repeated violations of the

USBC. Notices issued pursuant to this section shall be permitted to be communicated electronically, provided the notice is reasonably calculated to get to the permit holder.

M. Section 113.7 Approved inspection agencies. The building official may accept reports of inspections and tests from individuals or inspection agencies approved in accordance with the building official's written policy required by Section 113.7.1. The individual or inspection agency shall meet the qualifications and reliability requirements established by the written policy. Under circumstances where the building official is unable to make the inspection or test required by Section 113.3 or 113.4 within two working days of a request or an agreed upon date or if authorized for other circumstances in the building official's written policy, the building official shall accept reports for review. The building official shall approve the report from such approved individuals or agencies unless there is cause to reject it. Failure to approve a report shall be in writing within two working days of receiving it stating the reason for the rejection. Reports of inspections conducted by approved third-party inspectors or agencies shall be in writing, shall indicate if compliance with the applicable provisions of the USBC have been met, and shall be certified by the individual inspector or by the responsible officer when the report is from an agency. Reports of inspections conducted for the purpose of verifying compliance with the requirements of the USBC for elevators, escalators, and related conveyances shall include the name and certification number of the elevator mechanic performing the tests witnessed by the third-party inspector or agency.

Exception: The licensed mechanical contractor installing the mechanical system shall be permitted to perform duct tests required by Section R403.3.5 of the IECC or Section N1103.3.5 of the IRC. The contractor shall have been trained on the equipment used to perform the test.

Note: Photographs, videotapes, or other sources of pertinent data or information may be considered as constituting such reports and tests.

N. Section 113.7.1 Third-party inspectors. Each building official charged with the enforcement of the USBC shall have a written policy establishing the minimum acceptable qualifications for third-party inspectors. The policy shall include the format and timeframe required for submission of reports, any prequalification, or preapproval requirements before conducting a third-party inspection and any other requirements and procedures established by the building official.

O. Section 113.7.2 Qualifications. In determining third-party inspector qualifications, the building official may consider such items as DHCD inspector certification, other state or national certifications, state professional registrations, related experience, education, and any other factors that would demonstrate competency and reliability to conduct inspections.

P. Section 113.8 Final inspection. Upon completion of construction for which a permit was issued, a final inspection shall be conducted to ensure that any defective work has been corrected and that all work complies with the USBC and has been approved, including any work associated with modifications under Section 106.3. The building official shall be permitted to require the electrical service to a building or structure to be energized prior to conducting the final inspection. Approval of the final inspection indicates that all work associated with the permit complies with this code, and the permit is complete.

Prior to occupancy or change of occupancy of a building or structure, a certificate of occupancy shall be issued in accordance with Section 116.

13VAC5-63-140. Section 114 Stop work orders.

A. Section 114.1 Issuance of order. When the building official finds that work on any building or structure is being executed contrary to the provisions of this code or any pertinent laws or ordinances, or in a manner endangering the general public, a written stop work order may be issued. The order shall identify the nature of the work to be stopped and be given either to the owner of the property involved, to the owner's agent or to the person performing the work. Following the issuance of such an order, the affected work shall cease immediately. The order shall state the conditions under which such work may be resumed.

B. Section 114.2 Limitation of order. A stop work order shall apply only to the work identified in the order, provided that other work on the building or structure may be continued if not concealing the work covered by the order.

13VAC5-63-150. Section 115 Violations.

A. Section 115.1 Violation a misdemeanor; civil penalty. In accordance with § 36-106 of the Code of Virginia, it shall be unlawful for any owner or any other person, firm or corporation, on or after the effective date of any code provisions, to violate any such provisions. Any locality may adopt an ordinance that establishes a uniform schedule of civil penalties for violations of specified provisions of the code that are not abated or remedied promptly after receipt of a notice of violation from the local enforcement officer.

Note: See the full text of § 36-106 of the Code of Virginia for additional requirements and criteria pertaining to legal action relative to violations of the code.

B. Section 115.2 Notice of violation. The building official shall issue a written notice of violation to the permit holder if any violations of this code or any directives or orders of the building official have not been corrected or complied with within a reasonable time. The building official may also issue a notice of violation to other persons found to be responsible in addition to the permit holder. If the violations, directives, or orders involve work without a permit, the notice of violation shall be issued to the responsible party. The notice shall reference the code section upon which the notice is based and direct the correction of the violation or the compliance with such directive or order and specify a reasonable time period within which the corrections or compliance must occur. The notice shall be issued by either delivering a copy by mail to the last known address of the permit holder or responsible party, by delivering the notice in person, by leaving it in the possession of any person in charge of the premises, or by posting the notice in a conspicuous place if the person in charge of the premises cannot be found. The notice of violation shall indicate the right of appeal by referencing the appeals section. When the owner of the building or structure or the tenants of such building or structure are not the party to whom the notice of violation is issued, then a copy of the notice shall also be delivered to the owner or tenants.

Note: A notice of unsafe building or structure for structures that become unsafe during the construction process are issued in accordance with Section 118.

C. Section 115.2.1 Notice not to be issued under certain circumstances. When violations are discovered more than two years after the certificate of occupancy is issued or the date of initial occupancy, whichever occurred later, or more than two years after the approved final inspection for an alteration or renovation, a notice of violation shall only be issued upon advice from the legal counsel of the locality that action may be taken to compel correction of the violation. When compliance can no longer be compelled by prosecution under § 36-106 of the Code of Virginia, the building official, when requested by the building owner, shall document in writing the existence of the violation noting the edition of the USBC the violation is under.

D. Section 115.3 Further action when violation not corrected. Upon failure to comply with the notice of violation, the building official may initiate legal proceedings by requesting the legal counsel of the locality to institute the appropriate legal proceedings to restrain, correct or abate the violation or to require the removal or termination of the use of the building or structure involved. In cases where the locality so authorizes, the building official may issue or obtain a summons or warrant. Compliance with a notice of violation notwithstanding, the building official may request legal proceedings be instituted for prosecution when a person, firm or corporation is served with three or more notices of violation within one calendar year for failure to obtain a required construction permit prior to commencement of work subject to this code.

Note: See § 19.2-8 of the Code of Virginia concerning the statute of limitations for building code prosecutions.

E. Section 115.4 Penalties and abatement. Penalties for violations of the USBC shall be as set out in § 36-106 of the Code of Virginia. The successful prosecution of a violation of the USBC shall not preclude the institution of appropriate legal action to require correction or abatement of a violation.

F. Section 115.5 Transfer of ownership. In accordance with § 36-105 of the Code of Virginia, if the local building department has initiated an enforcement action against the owner of a building or structure and such owner subsequently transfers the ownership of the building or structure to an entity in which the owner holds an ownership interest greater than 50%, the pending enforcement action shall continue to be enforced against the owner.

13VAC5-63-160. Section 116 Certificates of occupancy.

A. Section 116.1 General; when to be issued. Prior to occupancy or change of occupancy of a building or structure, a certificate of occupancy shall be obtained in accordance with this section. The building official shall issue the certificate of occupancy within five working days after approval of the final inspection and when the building or structure or portion thereof is determined to be in compliance with this code and any pertinent laws or ordinances, or when otherwise entitled.

Exceptions:

1. A certificate of occupancy is not required for an accessory structure as defined in the IRC.

2. A new certificate of occupancy is not required for an addition to an existing Group R-5 building that already has a certificate of occupancy.

B. Section 116.1.1 Temporary certificate of occupancy. Upon the request of a permit holder, a temporary certificate of occupancy may be issued before the completion of the work covered by a permit, provided that such portion of a building ~~or~~ or structure may be occupied safely prior to full completion of the building or structure without endangering life or public safety.

C. Section 116.2 Contents of certificate. A certificate of occupancy shall specify the following:

1. The edition of the USBC under which the permit is issued.
2. The group classification and occupancy in accordance with the provisions of Chapter 3.
3. The type of construction as defined in Chapter 6.
4. If an automatic sprinkler system is provided and whether or not such system was required.
5. Any special stipulations and conditions of the building permit and if any modifications were issued under the permit, there shall be a notation on the certificate that modifications were issued.
6. Group R-5 occupancies complying with Section R320.3 of the VRC shall have a notation of compliance with that section on the certificate.

D. Section 116.3 Suspension or revocation of certificate. A certificate of occupancy may be revoked or suspended whenever the building official discovers that such certificate was issued in error or on the basis of incorrect information, or where there are repeated violations of the USBC after the certificate has been issued or when requested by the code official under Section 106.6 of the ~~VMC~~ VPMC. The revocation or suspension shall be in writing and shall state the necessary corrections or conditions for the certificate to be reissued or reinstated in accordance with Section 116.3.1.

E. Section 116.3.1 Reissuance or reinstatement of certificate of occupancy. When a certificate of occupancy has been revoked or suspended, it shall be reissued or reinstated upon correction of the specific conditions cited as the cause of the revocation or suspension, and the revocation or suspension of a certificate of occupancy shall not be used as justification for requiring a building or structure to be subject to a later edition of the code than that under which such building or structure was initially constructed.

F. Section 116.4 When no certificate exists. When the local building department does not have a certificate of occupancy for a building or structure, the owner or owner's agent may submit a written request for a certificate to be created. The building official, after receipt of the request, shall issue a certificate provided a determination is made that there are no current violations of the ~~VMC~~ VPMC or the Virginia Statewide Fire Prevention Code (13VAC5-52) and the occupancy classification of the building or structure has not changed. Such buildings and structures shall not be prevented from continued use.

When the local building department has records indicating that a certificate did exist but does not have a copy of the certificate itself, then the building official may either verify in writing that a certificate did exist or issue a certificate based upon the records.

13VAC5-63-170. Section 117 Temporary and moved buildings and structures; demolition.

A. Section 117.1 Temporary buildings and structures. The building official is authorized to issue a permit for temporary buildings or structures. Such permits shall be limited as to time of service but shall not be permitted for more than one year, except that upon the permit holder's written request, the building official may grant one or more extensions of time, not to exceed one year per extension. The building official is authorized to terminate the approval and order the demolition or removal of temporary buildings or structures during the period authorized by the permit when determined necessary.

B. Section 117.1.1 Temporary uses within existing buildings and structures. The building official shall review and may approve conditions or modifications for temporary uses, including hypothermia and hyperthermia shelters, that may be necessary as long as the use meets the spirit and functional intent intended by this code. The building official is authorized to terminate the approval and order the discontinuance of the temporary use during the period authorized by the permit when determined necessary. The building official shall notify the appropriate fire official or fire chief of the approved temporary use.

C. Section 117.2 Moved buildings and structures. Any building or structure moved into a locality or moved to a new location within a locality shall not be occupied or used until the flood hazard documentation, if required by Section 1612.4 has been approved by the building official and a certificate of occupancy is issued for the new location. Such moved buildings or structures shall be required to comply with the requirements of the VEBC.

D. Section 117.3 Demolition of buildings and structures. Prior to the issuance of a permit for the demolition of any building or structure, the owner or the owner's agent shall provide certification to the building official that all service connections of utilities have been removed, sealed, or plugged satisfactorily and a release has been obtained from the associated utility company. The certification shall further provide that written notice has been given to the owners of adjoining lots and any other lots that may be affected by the temporary removal of utility wires or the temporary disconnection or termination of other services or facilities relative to the demolition. In addition, the requirements of Chapter 33 of the IBC for any necessary retaining walls or fences during demolition shall be applicable and when a building or structure is demolished or removed, the established grades shall be restored.

13VAC5-63-180. Section 118 Buildings or structures that become a threat to public safety during construction.

A. Section 118.1 General. Any building or structure that is under construction and has not received a permanent certificate of occupancy (CO), or final inspection if a CO will not be issued, that has been determined by the building official to be an immediate threat to public safety due to faulty construction, deterioration, damage, or structural instability shall be made safe through compliance with this code or shall be demolished and removed if determined necessary by the building official.

B. Section 118.2 Correction notice. The building official shall issue a correction notice that describes the condition of the structure that is the basis for the determination that a violation of Section 118 exists. The correction notice shall state what is required to correct the violation and provide a reasonable time to make the corrections, or if the structure is required to be demolished, the notice shall specify the time period within which the demolition must occur.

C. Section 118.3 Notice of violation. When the violation has not been corrected in accordance with the correction notice issued per Section 118.2, the building official is authorized to issue a notice of violation in accordance with Section 115 of this code.

D. Section 118.3.1 Vacating unsafe building or structure. If the building official determines there is actual and immediate danger to the occupants or public, or when life is endangered by the occupancy of an unsafe building or structure, the building official shall be authorized to order the occupants to immediately vacate the unsafe building or structure. When an unsafe building or structure is ordered to be vacated, the building official shall post a notice at each entrance that reads as follows:

"This Building (or Structure) is Unsafe and its Occupancy (or Use) is Prohibited by the Building Official."

After posting, occupancy or use of the unsafe building or structure shall be prohibited except when authorized to enter to conduct inspections, make required repairs, or as necessary to demolish the building or structure.

E. Section 118.4 Posting of notice. The notice shall be sent by registered or certified mail to the last known address of the responsible party and a copy of the notice shall be posted in a conspicuous place on the premises.

F. Section 118.5 Posting of placard. In the case of an unsafe building or structure, if the notice is not complied with, a placard with the following wording shall be posted at the entrance to the building or structure:

"This Building (or Structure) is Unfit for Habitation and its Use or Occupancy has been Prohibited by the Building Official."

After an unsafe building or structure is placarded, entering the unsafe building or structure shall be prohibited except as authorized by the building official to make inspections, to perform required repairs, or to demolish the unsafe building or structure. In addition, the placard shall not be removed until the unsafe building or structure is determined by the building official to be safe to occupy. The placard shall not be defaced.

G. Section 118.6 Emergency repairs and demolition. To the extent permitted by the locality, the building official may authorize emergency repairs or securing of the site when it is determined that there is an imminent threat to the life and safety of the public. The building official shall be permitted to authorize the necessary work to make the structure temporarily safe whether or not legal action to compel compliance has been instituted.

In addition, if the notice of violation included an order to demolish the structure and the demolition has not occurred in the time period stipulated, the building official shall be permitted to cause the unsafe structure to be demolished. In accordance with §§ 15.2-906 and 15.2-1115 of the Code of Virginia, the legal counsel of the locality may be requested to institute appropriate action against the property owner to recover the costs associated with any such emergency repairs or demolition and every such charge that remains unpaid shall constitute a lien against the property on which the emergency repairs or demolition were made and shall be enforceable in the same manner as provided in Articles 3 (§ 58.1-3940 et seq.) and 4 (§ 58.1-3965 et seq.) of Chapter 39 of Title 58.1 of the Code of Virginia.

Note: Building officials and local governing bodies should be aware that other statutes and court decisions may impact on matters relating to demolition, in particular whether newspaper publication is required if the owner cannot be located and whether the demolition order must be delayed until the owner has been given the opportunity for a hearing.

H. Section 118.7 Closing of streets. When necessary for public safety, the building official shall be permitted to order the temporary closing of sidewalks, streets, public ways, or premises adjacent to a structure that has become a threat to public safety during construction.

13VAC5-63-190. Section 119 Appeals.

A. Section 119.1 Establishment of appeals board. In accordance with § 36-105 of the Code of Virginia, there shall be established within each local building department a LBBCA. Whenever a county or a municipality does not have such a LBBCA, the local governing body shall enter into an agreement with the local governing body of another county or municipality or with some other agency, or a state agency approved by DHCD for such appeals resulting therefrom. Fees may be levied by the local governing body in order to defray the cost of such appeals. In addition, as an authorization in this code, separate LBBCAs may be established to hear appeals of different enforcement areas such as electrical, plumbing or mechanical requirements. Each such LBBCA shall comply with the requirements of this section. The locality is responsible for maintaining a duly constituted LBBCA prepared to hear appeals within the time limits established in this section. The LBBCA shall meet as necessary to assure a duly constituted board, appoint officers as necessary, and receive such training on the code as may be appropriate or necessary from staff of the locality.

B. Section 119.2 Membership of board. The LBBCA shall consist of at least five members appointed by the locality for a specific term of office established by written policy. Alternate members may be appointed to serve in the absence of any regular members and as such, shall have the full power and authority of the regular members. Regular and alternate members may be reappointed. Written records of current membership, including a record of the current chairman and secretary shall be maintained in the office of the locality. In order to provide continuity, the terms of the members may be of different length so that less than half will expire in any one-year period.

C. Section 119.3 Officers and qualifications of members. The LBBCA shall annually select one of its regular members to serve as chairman. When the chairman is not present at an appeal hearing, the members present shall select an acting chairman. The locality or the chief executive officer of the

locality shall appoint a secretary to the LBBCA to maintain a detailed record of all proceedings. Members of the LBBCA shall be selected by the locality on the basis of their ability to render fair and competent decisions regarding application of the USBC and shall to the extent possible, represent different occupational or professional fields relating to the construction industry. At least one member should be an experienced builder; at least one member should be an RDP, and at least one member should be an experienced property manager. Employees or officials of the locality shall not serve as members of the LBBCA.

D. Section 119.4 Conduct of members. No member shall hear an appeal in which that member has a conflict of interest in accordance with the State and Local Government Conflict of Interests Act (§ 2.2-3100 et seq. of the Code of Virginia). Members shall not discuss the substance of an appeal with any other party or their representatives prior to any hearings.

E. Section 119.5 Right of appeal; filing of appeal application. Any person aggrieved by the local building department's application of the USBC or the refusal to grant a modification to the provisions of the USBC may appeal to the LBBCA. The applicant shall submit a written request for appeal to the LBBCA within 30 calendar days of the receipt of the decision being appealed. The application shall contain the name and address of the owner of the building or structure and in addition, the name and address of the person appealing, when the applicant is not the owner. A copy of the building official's decision shall be submitted along with the application for appeal and maintained as part of the record. The application shall be marked by the LBBCA to indicate the date received. Failure to submit an application for appeal within the time limit established by this section shall constitute acceptance of a building official's decision.

Note: To the extent that a decision of a building official pertains to amusement devices there may be a right of appeal under the VADR.

F. Section 119.6 Meetings and postponements. The LBBCA shall meet within 30 calendar days after the date of receipt of the application for appeal, except that a period of up to 45 calendar days shall be permitted where the LBBCA has regularly scheduled monthly meetings. A longer time period shall be permitted if agreed to by all the parties involved in the appeal. Notice indicating the time and place of the hearing shall be sent to the parties in writing to the addresses listed on the application if requested or by electronic means at least 14 calendar days prior to the date of the hearing unless a lesser time period is agreed to by all the parties involved in the appeal. When a quorum of the LBBCA is not present at a hearing to hear an appeal, any party involved in the appeal shall have the right to request a postponement of the hearing. The LBBCA shall reschedule the appeal within 30 calendar days of the postponement, except that a longer time period shall be permitted if agreed to by all the parties involved in the appeal.

G. Section 119.7 Hearings and decision. All hearings before the LBBCA shall be open meetings and the appellant, the appellant's representative, the locality's representative and any person whose interests are affected by the building official's decision in question shall be given an opportunity to be heard. The chairman shall have the power and duty to direct the hearing, rule upon the acceptance of evidence and oversee the record of all proceedings. The LBBCA shall have the power to uphold, reverse or modify the

decision of the official by a concurring vote of a majority of those present. Decisions of the LBBCA shall be final if no further appeal is made. The decision of the LBBCA shall be explained in writing, signed by the chairman and retained as part of the record of the appeal. Copies of the written decision shall be sent to all parties by certified mail. In addition, the written decision shall contain the following wording:

"Any person who was a party to the appeal may appeal to the State Review Board by submitting an application to such Board within 21 calendar days upon receipt by certified mail of this decision. Application forms are available from the Office of the State Review Board, 600 East Main Street, Richmond, Virginia 23219, (804) 371-7150."

H. Section 119.8 Appeals to the State Review Board. After final determination by the LBBCA in an appeal, any person who was a party to the appeal may further appeal to the State Review Board. In accordance with Section 36-114 of the Code of Virginia, the State Review Board shall have the power and duty to hear all appeals from decisions arising under the application of the USBC and to render its decision on any such appeal, which decision shall be final if no appeal is made therefrom. In accordance with § 36-98.2 of the Code of Virginia for state-owned buildings and structures, appeals by an involved state agency from the decision of the building official for state-owned buildings or structures shall be made directly to the State Review Board. The application for appeal shall be made to the State Review Board within 21 calendar days of the receipt of the decision to be appealed. Failure to submit an application within that time limit shall constitute an acceptance of the building official's decision. For appeals from a LBBCA, a copy of the building official's decision and the written decision of the LBBCA shall be submitted with the application for appeal to the State Review Board. Upon request by the office of the State Review Board, the LBBCA shall submit a copy of all pertinent information from the record of the appeal. In the case of appeals involving state-owned buildings or structures, the involved state agency shall submit a copy of the building official's decision and other relevant information with the application for appeal to the State Review Board. Procedures of the State Review Board are in accordance with Article 2 (§ 36-108 et seq.) of Chapter 6 of Title 36 of the Code of Virginia.

I. Section 119.9 Hearings and decision. All hearings before the State Review Board shall be open meetings and the chair shall have the power and duty to direct the hearing, rule upon the acceptance of evidence and oversee the record of all proceedings. The State Review Board shall have the power to uphold, reverse, or modify the decision of the LBBCA by a concurring vote of a majority of those present. Proceedings of the Review Board shall be governed by the provisions of the Administrative Process Act (§ 2.2-4000 et seq. of the Code of Virginia), except that an informal conference pursuant to § 2.2-4019 of the Code of Virginia shall not be required. Decisions of the State Review Board shall be final if no further appeal is made. The decision of the State Review Board shall be explained in writing, signed by the chair and retained as part of the record of the appeal. Copies of the written decision shall be sent to all parties by certified mail. In addition, the written decision shall contain the following wording: "As provided by Rule 2A:2 of the Supreme Court of Virginia, you have thirty (30) days from the date of service (the date you actually received this decision or the date it was mailed to you, whichever occurred first) within which to appeal this decision by filing a Notice of Appeal with the Secretary of the Review Board. In the event that this decision is served on you by mail, three (3) days are added to that period."

13VAC5-63-200. Chapter 2 Definitions.

A. Add the following definitions to Section 202 of the IBC to read:

Aboveground liquid fertilizer storage tank (ALFST). A device that contains an accumulation of liquid fertilizer (i) constructed of nonearthen materials, such as concrete, steel, or plastic, that provide structural support; (ii) having a capacity of 100,000 gallons (378,500 L) or greater and (iii) the volume of which is more than 90% above the surface of the ground. The term does not include any wastewater treatment or wastewater storage tank, utility, or industry pollution control equipment.

Building regulations. Any law, rule, resolution, regulation, ordinance, or code, general or special, or compilation thereof enacted or adopted by the Commonwealth or any county or municipality, including departments, boards, bureaus, commissions, or other agencies thereof relating to construction, reconstruction, alteration, conversion, repair, maintenance, or use of structures and buildings and installation of equipment therein. The term does not include zoning ordinances or other land use controls that do not affect the manner of construction or materials to be used in the erection, alteration, or repair of a building or structure.

Chemical fume hood. A ventilated enclosure designed to contain and exhaust fumes, gases, vapors, mists, and particulate matter generated within the hood.

Construction. The construction, reconstruction, alteration, repair, or conversion of buildings and structures.

Day-night average sound level (Ldn). A 24-hour energy average sound level expressed in dBA with a 10 decibel penalty applied to noise occurring between 10 p.m. and 7 a.m.

DHCD. The Virginia Department of Housing and Community Development.

Emergency communication equipment. Emergency communication equipment, includes two-way radio communications, signal booster, bi-directional amplifiers, radiating cable systems, internal multiple antenna, or a combination of these.

Emergency public safety personnel. Emergency public safety personnel and includes firefighters, emergency medical personnel, law-enforcement officers, and other emergency public safety personnel routinely called upon to provide emergency assistance to members of the public in a wide variety of emergency situations, including fires, medical emergencies, violent crimes, and terrorist attacks.

Emergency supplemental hardware. Any approved hardware used only for emergency events or drills to keep intruders from entering the room during an active shooter or hostile threat event or drill.

Equipment. Plumbing, heating, electrical, ventilating, air-conditioning and refrigeration equipment, elevators, dumbwaiters, escalators, and other mechanical additions or installations.

Farm building or structure. A building or structure not used for residential purposes, located on property where farming operations take place, and used primarily for any of the following uses:

1. Storage, handling, production, display, sampling or sale of agricultural, horticultural, floricultural, or silvicultural products produced in the farm.
2. Sheltering, raising, handling, processing, or sale of agricultural animals or agricultural animal products.
3. Business or office uses relating to the farm operations.
4. Use of farm machinery or equipment or maintenance or storage of vehicles, machinery, or equipment on the farm.
5. Storage or use of supplies and materials used on the farm.
6. Implementation of best management practices associated with farm operations.

Hospice facility. An institution, place, or building owned or operated by a hospice provider and licensed by the Virginia Department of Health as a hospice facility to provide room, board, and palliative and supportive medical and other health services to terminally ill patients and their families, including respite and symptom management, on a 24-hour basis to individuals requiring such care pursuant to the orders of a physician.

Industrialized building. A combination of one or more closed panels, sections, or modules, subject to state regulations and including the necessary electrical, plumbing, heating, ventilating, and other service systems, manufactured off-site and transported to the point of use for installation or erection, with or without other specified components, to comprise a finished building. Manufactured homes defined in § 36-85.3 of the Code of Virginia and certified under the provisions of the National Manufactured Home Construction and Safety Standards Act (42 USC § 5401 et seq.) shall not be considered industrialized buildings for the purpose of this code.

LBBCA. Local board of building code appeals.

Liquid fertilizer. A fluid in which a fertilizer is in true solution. This term does not include anhydrous ammonia or a solution used in pollution control.

Local building department. Any agency of any local governing body charged with the administration, supervision, or enforcement of this code, approval of construction documents, inspection of buildings or structures, or issuance of permits, licenses, certificates, or similar documents.

Local governing body. The governing body of any city, county, or town in this Commonwealth.

Locality. A city, county, or town in this Commonwealth.

Manufactured home. A structure subject to federal regulation that regulation, which is transportable in one or more sections; is eight body feet or more in width and 40 body feet or

more in length in the traveling mode, or is 320 or more square feet when erected on site; is built on a permanent chassis; is designed to be used as a single-family dwelling, with or without a permanent foundation when connected to the required utilities; and includes the plumbing, heating, air-conditioning, and electrical systems contained in the structure.

Marina. Any installation, operating under public or private ownership, that has a structure providing dockage or moorage for boats, other than paddleboats or rowboats, and provides, through sale, rental, fee, or on a free basis, any equipment, supply, or service, including fuel, electricity, or water, for the convenience of the public or its lessees, renters, or users of its facilities. A dock or pier with or without slips that exclusively serves a single-family residential lot for the use of the owner of the lot is not a marina.

Night club. Any building in which the main use is a place of public assembly that provides exhibition, performance, or other forms of entertainment; serves alcoholic beverages; and provides music and space for dancing.

Permissible fireworks. Any sparklers, fountains, Pharaoh's serpents, caps for pistols, or pinwheels commonly known as whirligigs or spinning jennies.

Permit holder. The person to whom the permit is issued.

Public building. A structure or building that is owned, leased, or otherwise occupied by a municipality or the state and used for any municipal or public purposes by the municipality or the state.

Short-term holding area. An area containing a holding cell, or a holding room, including associated rooms or spaces where the occupants are restrained or detained by the use of security measures not under the occupant's control for less than 24 hours.

~~**Skirting.** A weather-resistant material used to enclose the space from the bottom of the manufactured home to grade.~~

Slip. A berth or space where a boat may be secured to a fixed or floating structure, including a dock, finger pier, boat lift, or mooring buoy.

Sound transmission class (STC) rating. A single number characterizing the sound reduction performance of a material tested in accordance with ~~ASTM E90-90~~, ASTM E90, "Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions."

State regulated care facility (SRCF). A building occupied by persons in the care of others where program oversight is provided by the Virginia Department of Social Services, the Virginia Department of Behavioral Health and Developmental Services, the Virginia Department of Education, the Virginia Department of Health, or the Virginia Department of Juvenile Justice.

State Review Board. The Virginia State Building Code Technical Review Board as established under § 36-108 of the Code of Virginia.

Teaching and research laboratory. ~~A building or portion of a building where hazardous materials are stored, used, and handled for the purpose of testing, analysis, teaching, research, or developmental activities on a nonproduction basis rather than in a manufacturing process.~~

Technical assistant. Any person employed by or under an extended contract to a local building department or local enforcing agency for enforcing the USBC, including inspectors, plans reviewers, and permit technicians. For the purpose of this definition, an extended contract shall be a contract with an aggregate term of 18 months or longer.

Tenable environment. An environment in which the products of combustion, including smoke, toxic gases, particulates, and heat are limited or otherwise restricted in order to maintain the impact on occupants, including those in the area of fire origin, to a level that is not life threatening and permits the rescue of occupants for a limited time.

VADR. The Virginia Amusement Device Regulations (13VAC5-31).

VCS. The Virginia Certification Standards (13VAC5-21).

Working day. A day other than Saturday, Sunday, or a legal local, state or national holiday.

B. Change the following definitions in Section 202 of the IBC to read:

Ambulatory care facility. Buildings or portions thereof used to provide medical care on less than a 24-hour basis that are licensed by the Virginia Department of Health as outpatient surgical hospitals.

Automatic fire-extinguishing system. An approved system of devices and equipment that automatically detects a fire and discharges an approved fire-extinguishing agent onto or in the area of a fire and includes among other systems an automatic sprinkler system, unless otherwise expressly stated.

Base flood elevation. The elevation of the base flood, including wave height, relative to the National Geodetic Vertical Datum (NGVD), North American Vertical Datum (NAVD) or other datum specified on the Flood Insurance Rate Map (FIRM), and as shown in the Flood Insurance Study.

Building. A combination of materials, whether portable or fixed, having a roof to form a structure for the use or occupancy by persons, or property. The word "building" shall be construed as though followed by the words "or part or parts thereof" unless the context clearly requires a different meaning. "Building" shall not include roadway tunnels and bridges owned by the Virginia Department of Transportation, which shall be governed by construction and design standards approved by the Virginia Commonwealth Transportation Board.

Change of occupancy. See Section 202 of the VEBC.

Clinic, outpatient. Buildings or portions thereof used to provide medical care on less than a 24-hour basis that are not licensed by the Virginia Department of Health as outpatient surgical hospitals.

Custodial care. Assistance with day-to-day living tasks, such as assistance with cooking, taking medication, bathing, using toilet facilities, and other tasks of daily living. In other than in hospice facilities, custodial care includes care for occupants who have the ability to respond to emergency situations and evacuate at a slower rate, who have mental and psychiatric complications, or both.

Coastal high-hazard area. Area within the special flood hazard area extending from offshore to the inland limit of a coastal primary sand dune, as defined in § 28.2-1400 of the Code of Virginia, along an open coast and any other area that is subject to high-velocity wave action from storms or seismic sources and shown either in the Flood Insurance Study or on the Flood Insurance Rate Map (FIRM) or other flood hazard map as velocity Zone V, VO, VE, or V1-30 (areas subject to wave heights of three feet (914.4 mm) or more).

Essential facilities. Buildings and other structures that are intended to remain operational in the event of extreme environmental loading from flood, wind, tornadoes, snow, or earthquakes.

Existing building. A building for which a legal certificate of occupancy has been issued under any edition of the USBC or approved by the building official when no legal certificate of occupancy exists and that has been occupied for its intended use or a building built prior to the initial edition of the USBC.

Existing structure. A structure (i) for which a legal building permit has been issued under any edition of the USBC, (ii) that has been previously approved, or (iii) that was built prior to the initial edition of the USBC. For application of provisions in flood hazard areas, an existing structure is any building or structure for which the start of construction commenced before the effective date of the community's first flood plain management code, ordinance, or standard.

Flood or flooding.

1. A general and temporary condition of partial or complete inundation of normally dry land from either of the following:
 - 1.1 The overflow of inland or tidal waters.
 - 1.2 The unusual and rapid accumulation or runoff of surface waters from any source.
2. The collapse or subsidence of land along the shore of a lake or other body of water as a result of erosion or undermining caused by waves or currents of water exceeding anticipated cyclical levels or suddenly caused by an unusually high water level in a natural body of water, accompanied by a severe storm or by an unanticipated force of nature, such as flash flood or an abnormal tidal surge, or by some similarly unusual and unforeseeable event that results in flooding as defined in subdivision 1.1 of this definition.

3. Mudflows that are proximately caused by flooding as defined in subdivision 1.2 of this definition and are akin to a river of liquid and flowing mud on the surface of normally dry land areas, as when earth is carried by a current of water and disposed along the path of the current.

Flood hazard area. The greater of the following two areas:

1. The area within a flood plain subject to a 1.0% or greater chance of flooding in any year (also known as the 100-year floodplain).
2. The area designated as a flood hazard area on a community's flood hazard map or otherwise legally designated, including areas in either the Flood Insurance Study or on the Flood Insurance Rate Map (FIRM) and including areas added to account for future flooding conditions based on the locally adopted sea level rise projected to occur by 2070.

Laboratory suite. A fire-rated enclosed laboratory area that will provide one or more laboratory spaces, within a Group B educational occupancy, that are permitted to include ancillary uses such as offices, bathrooms, and corridors that are contiguous with the laboratory area and are constructed in accordance with Section 428.3.

Merchandise pad. A merchandise pad is an area for display of merchandise surrounded by aisles, permanent fixtures or walls. Merchandise pads contain elements such as nonfixed and movable fixtures, cases, racks, counters and partitions from which customers browse or shop.

Nominal loads. ~~The magnitudes of the loads specified in Chapter 16 (dead, live, soil, wind, tornado, snow, rain, flood, and earthquake).~~

Owner. The owner of the freehold of the premises or lesser estate therein, a mortgagee or vendee in possession, assignee of rents, receiver, executor, trustee, or lessee in control of a building or structure.

Registered design professional (RDP). An architect or professional engineer, licensed to practice architecture or engineering, as defined under § 54.1-400 of the Code of Virginia.

Risk category. ~~A categorization of buildings and other structures for determination of flood, wind, tornado, snow, ice, and earthquake loads based on the risk associated with unacceptable performance.~~

Special flood hazard area. The land area subject to flood hazards and shown on a Flood Insurance Rate Map or the Flood Insurance Study as Zone A, AE, A1-30, A99, AR, AO, AH, V, VO, VE, or V1-30.

Structure. An assembly of materials forming a construction for occupancy or use, including stadiums, gospel and circus tents, reviewing stands, platforms, stagings, observation towers, radio towers, water tanks, storage tanks (underground and aboveground), trestles, piers, wharves, swimming pools, amusement devices, storage bins, and other structures of this general nature but excluding water wells. The word "structure" shall be construed as though

followed by the words "or part or parts thereof" unless the context clearly requires a different meaning. "Structure" shall not include roadway tunnels and bridges owned by the Virginia Department of Transportation, which shall be governed by construction and design standards approved by the Virginia Commonwealth Transportation Board.

Swimming pool. A pool or spa as defined in the International Swimming Pool and Spa Code (ISPSC).

Wall. A vertical element with a horizontal length-to-thickness ratio greater than three used to enclose space.

C. Delete the following definitions from Section 202 of the IBC:

Agricultural building

Historic buildings

13VAC5-63-210. Chapter 3 ~~Use and occupancy classification.~~ Occupancy classification and use.

A. Change Items 6 and 8 of Section 302.1 of the IBC to read:

~~1- 6.~~ Institutional (see Section 308 and Section 313 for SRCFs): State Regulated Care Facilities (SRCFs).

~~2- 8.~~ Residential (see Section 310 and Section 313 for SRCFs): Groups R-1, R-2, R-3, R-4, and R-5.

B. Change Sections 303.1.1 and 303.1.2 of the IBC to read:

303.1.1 Small buildings and tenant spaces. A building or tenant space used for assembly purposes with an occupant load of less than 50 persons shall be permitted to be classified as a Group B occupancy.

303.1.2 Small assembly spaces. The following rooms and spaces shall be permitted to be classified as Group B occupancies or as part of the assembly occupancy:

1. A room or space used for assembly purposes with an occupant load of less than 50 persons and ancillary to another occupancy.

2. A room or space used for assembly purposes that is less than 750 square feet (70 m²) in area and ancillary to another occupancy.

C. Change Section 303.6 of the IBC to read:

303.6 Assembly Group A-5. Assembly uses intended for participation in or viewing outdoor activities, including:

Amusement park structures

Bleachers

Grandstands

Stadiums

Swimming pools

D. Add Section 304.1.1 to the IBC to read:

304.1.1 Day support and day treatment facilities. Day support and day treatment facilities licensed by the Virginia Department of Behavioral Health and Developmental Services shall be permitted to be classified as Group B occupancies provided all of the following conditions are met:

1. Participants who may require physical assistance from staff to respond to an emergency situation shall be located on the level of exit discharge.
2. Any change in elevation within the exit access on the level of exit discharge shall be made by means of a ramp or sloped walkway.
3. Where the facilities are located more than two stories above grade, an automatic sprinkler system shall be provided throughout the building in accordance with Section 903.3.1.1.

E. Delete Exception 19 of Section 307.1.1 of the IBC and change Exceptions 14 and 18 to Section 307.1.1 of the IBC to read:

~~14. The storage of black powder, smokeless propellant and small arms primers in Groups M, R-3 and R-5 and special industrial explosive devices in Groups B, F, M and S, provided such storage conforms to the quantity limits and requirements prescribed in the IFC, as amended in Section 307.9.~~

~~18. The storage of distilled spirits and wines in wooden barrels and casks. Distillation, blending, bottling, and other hazardous materials storage or processing shall be in separate control areas complying with Section 414.2. Combine the two explosives rows in Table 307.1.1 of the IBC and revise to read:~~

<u>Explosives</u>	<u>Groups M, R-3, R-5, B, F, M and S</u>	<u>The storage of black powder, smokeless propellant and small arms primers in Groups M, R-3 and R-5 and special industrial explosive devices in Groups B, F, M and S, provided such storage conforms to the quantity limits and requirements prescribed in the International Fire Code, as amended in Section 307.9 of this code.</u>

F. Change the "Flammable liquid, combination (IA, IB, IC)" row in Table 307.1(1), add a new "Permissible fireworks" row to Table 307.1(1) of the IBC, and add footnote "r" to Table 307.1(1) of the IBC to read:

Flammable liquid, combination (IA, IB, IC)	NA	H-2 or H-3	NA	120 ^{d,e,h}	NA	NA	120 ^{d,h}	NA	NA	30 ^{d,h,r}
Permissible fireworks	1.4G	H-3	125 ^{d,e,l}	NA	NA	NA	NA	NA	NA	NA
r. The tabular value for distilled spirit distillation and blending rooms is 120 gallons.										

G. Add Section 307.9 to the IBC to read:

307.9 Amendments. The following changes shall be made to the IFC for the use of Exception 14 in Section 307.1.1:

1. Change the following definition in Section 202 of the IFC to read:

Smokeless propellants. Solid propellants, commonly referred to as smokeless powders, or any propellants classified by DOTn as smokeless propellants in accordance with NA3178 (Smokeless Powder for Small Arms), used in small arms ammunition, firearms, cannons, rockets, propellant-actuated devices, and similar articles.

2. Change Section 314.1 of the IFC to read as follows:

314.1 General. Indoor displays constructed within any building or structure shall comply with Sections 314.2 through 314.5.

3. Add new Section 314.5 to the IFC to read as follows:

314.5 Smokeless powder and small arms primers. Vendors shall not store, display, or sell smokeless powder or small arms primers during trade shows inside exhibition halls except as follows:

1. The amount of smokeless powder each vendor may store is limited to the storage arrangements and storage amounts established in Section 5606.5.2.1.
2. Smokeless powder shall remain in the manufacturer's original sealed container and the container shall remain sealed while inside the building. The repackaging of smokeless powder shall not be performed inside the building. Damaged containers shall not be repackaged inside the building and shall be immediately removed from the building in such manner to avoid spilling any powder.
3. There shall be at least 50 feet separation between vendors and 20 feet from any exit.
4. Small arms primers shall be displayed and stored in the manufacturer's original packaging and in accordance with the requirements of Section 5606.5.2.3.

4. Change Exception 4 and add Exceptions 10 and 11 to Section 5601.1 of the IFC as follows:

4. The possession, storage and use of not more than 15 pounds (6.75 kg) of commercially manufactured sporting black powder, 20 pounds (9 kg) of smokeless powder, and any amount of small arms primers for hand loading of small arms ammunition for personal consumption.

10. The display of small arms primers in Group M when in the original manufacturer's packaging.

11. The possession, storage, and use of not more than 50 pounds (23 kg) of commercially manufactured sporting black powder, 100 pounds (45 kg) of smokeless powder, and small arms primers for hand loading of small arms ammunition for personal consumption in Group R-3 or R-5, or 200 pounds (91 kg) of smokeless powder when stored in the manufacturer's original containers in detached Group U structures at least 10 feet (3048 mm) from inhabited buildings and are accessory to Group R-3 or R-5.

5. Change Section 5606.4 of the IFC to read as follows:

5606.4 Storage in residences. Propellants for personal use in quantities not exceeding 50 pounds (23 kg) of black powder or 100 pounds (45 kg) of smokeless powder shall be stored in original containers in occupancies limited to Groups R-3 and R-5 or 200 pounds (91 kg) of smokeless powder when stored in the manufacturer's original containers in detached Group U structures at least 10 feet (3048 mm) from inhabited buildings and are accessory to Group R-3 or R-5. In other than Group R-3 or R-5, smokeless powder in quantities exceeding 20 pounds (9 kg) but not exceeding 50 pounds (23 kg) shall be kept in a wooden box or cabinet having walls of at least one inch (25 mm) nominal thickness or equivalent.

6. Delete Sections 5606.4.1 and 5606.4.2 of the IFC.

7. Change Section 5606.5.1.1 of the IFC to read as follows:

5606.5.1.1 Smokeless propellant. No more than 100 pounds (45 kg) of smokeless propellants in containers of eight pounds (3.6 kg) or less capacity shall be displayed in Group M occupancies.

8. Delete Section 5606.5.1.3 of the IFC.

9. Change Section 5606.5.2.1 of the IFC as follows:

5606.5.2.1 Smokeless propellant. Commercial stocks of smokeless propellants shall be stored as follows:

1. Quantities exceeding 20 pounds (9 kg), but not exceeding 100 pounds (45 kg), shall be stored in portable wooden boxes having walls of at least one inch (25 mm) nominal thickness or equivalent.

2. Quantities exceeding 100 pounds (45 kg), but not exceeding 800 pounds (363 kg), shall be stored in storage cabinets having walls at least one inch (25 mm) nominal thickness or equivalent. Not more than 400 pounds (182 kg) shall be stored in any one cabinet, and cabinets shall be separated by a distance of at least 25 feet (7620 mm) or by a fire partition having a fire-resistance rating of at least one hour.

3. Storage of quantities exceeding 800 pounds (363 kg), but not exceeding 5,000 pounds (2270 kg), in a building shall comply with all of the following:

3.1. The warehouse or storage room is not open to unauthorized personnel.

3.2. Smokeless propellant shall be stored in nonportable storage cabinets having wood walls at least one inch (25 mm) nominal thickness or equivalent and having shelves with no more than three feet (914 mm) of vertical separation between shelves.

3.3. No more than 400 pounds (182 kg) is stored in any one cabinet.

3.4. Cabinets shall be located against walls with at least 40 feet (12,192 mm) between cabinets. The minimum required separation between cabinets may be reduced to 20 feet (6096 mm) provided that barricades twice the height of the cabinets are attached to the wall, midway between each cabinet. The barricades must extend a minimum of 10 feet (3048 mm) outward, be firmly attached to the wall, and be constructed of steel not less than 0.25 inch thick (6.4 mm), two-inch (51 mm) nominal thickness wood, brick, or concrete block.

3.5. Smokeless propellant shall be separated from materials classified as combustible liquids, flammable liquids, flammable solids, or oxidizing materials by a distance of 25 feet (7620 mm) or by a fire partition having a fire-resistance rating of one hour.

3.6. The building shall be equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1.

4. Smokeless propellants not stored according to Item 1, 2, or 3 shall be stored in a Type 2 or 4 magazine in accordance with Section 5604 and NFPA 495.

H. Change Section 308.2 of the IBC to read:

308.2 Institutional Group I-1. This occupancy shall include buildings, structures, or portions thereof for more than 16 persons, excluding staff, who reside on a 24-hour basis in a supervised environment and receive custodial care. Buildings of Group I-1, shall be classified as the occupancy condition indicated in Section 308.2.1 or 308.2.2. Assisted living facilities licensed by the Virginia Department of Social Services shall be classified as one of the occupancy conditions indicated in Section 308.2.1 or 308.2.2.

I. Change Sections 308.2.1 and 308.2.2 of the IBC to read:

308.2.1 Condition 1. This occupancy condition shall include buildings in which all persons receiving custodial care who, without any assistance, are capable of responding to an emergency situation to complete building evacuation. Not more than five of the residents may require physical assistance from staff to respond to an emergency situation when all residents who may require the physical assistance reside on a level of exit discharge and the path of egress to the exit does not include steps.

308.2.2 Condition 2. This occupancy condition shall include buildings in which there are persons receiving custodial care who require assistance by not more than one staff member while responding to an emergency situation to complete building evacuation. Five of the residents may require physical assistance from more than one staff member to respond to an emergency.

J. Change Section 308.3 of the IBC to read:

308.3 Institutional Group I-2. This occupancy shall include buildings and structures used for medical care on a 24-hour basis for more than five persons who are incapable of self-preservation.

K. Add an exception to Section 308.5 of the IBC to read:

Exception: Family day homes under Section 313.3.

L. Change Sections 310.1 and 310.2 of the IBC to read:

310.1 Residential Group R. Residential Group R includes, among others, the use of a building or structure, or portion thereof, for sleeping purposes when not classified as an Institutional Group I or when not regulated by the IRC. Group R occupancies not constructed in accordance with the IRC as permitted by Section 310.4.2 shall comply with Section 420.

310.2 Residential Group R-1. Residential occupancies containing sleeping units or more than two dwelling units, and:

1. The occupants are primarily transient, and
2. There are more than 10 occupants.

M. Change Section 310.3 of the IBC to read:

Residential Group R-2. Residential occupancies containing sleeping units or more than two dwelling units where the occupants are not primarily transient.

N. Change Sections 310.4, 310.4.1, 310.4.2, 310.5, and 310.5.1 and add Section 310.5.3 of the IBC to read:

310.4 Residential Group R-3. Residential occupancies containing no more than two dwelling units and where the occupancy is not classified as Group R-1, R-2, R-4, R-5, or I, and:

1. The occupants are not primarily transient, or
2. There are no more than 10 transient occupants per dwelling unit.

310.4.1 Radon-resistant construction. Group R-3 buildings and structures shall be subject to the radon-resistant construction requirements in Appendix F BE of the IRC in localities enforcing such requirements pursuant to Section ~~R331~~ R333 of the ~~IRC~~ VRC.

310.4.2 Lodging houses. Owner-occupied or proprietor-occupied lodging houses and other transient boarding facilities not more than three stories above grade plane in height, with five or

fewer guest rooms and 10 or fewer total occupants shall be permitted to be classified as either Group R-3 or R-5, provided that smoke alarms are installed in compliance with Section 907.2.11.2 for Group R-3 or Section ~~R314~~ R310 of the IRC for Group R-5.

310.5 Residential Group R-4. Residential occupancies with more than five but not more than 16 persons, excluding staff, who reside on a 24-hour basis in a supervised environment and receive custodial care. Buildings of Group R-4, other than assisted living facilities licensed by the Virginia Department of Social Services, shall be classified as the occupancy condition indicated in Section 310.5. Assisted living facilities licensed by the Virginia Department of Social Services shall be classified as one of the occupancy conditions indicated in Section 310.5.1 or 310.5.2.

310.5.1 Condition 1. This occupancy condition shall include buildings in which all persons receiving custodial care who, without any assistance, are capable of responding to an emergency situation to complete building evacuation or, in which not more than five of the residents may require physical assistance from staff to respond to an emergency situation when all residents who may require the physical assistance from staff reside on a level of exit discharge and the path of egress to the exit does not include steps.

310.5.3 Radon-resistant construction. Group R-4 buildings and structures shall be subject to the radon-resistant construction requirements in Appendix F BE of the VRC in localities enforcing such requirements pursuant to Section ~~R331~~ R333 of the VRC.

O. Add Section 310.6 to the IBC to read:

310.6 Residential Group R-5. Residential Group R-5 occupancies shall include residential occupancies within the scope of Section 310.6.1 and manufactured homes in accordance with the Virginia Manufactured Home Safety Regulations (13VAC5-91).

310.6.1 Virginia Residential Code. The provisions of the IRC for detached one-family and two-family dwellings and townhouses as amended by VCC Section 310.8, also referred to as the Virginia Residential Code (VRC) printed by the ICC, shall apply to construction, rehabilitation, and demolition of the types of buildings and structures listed in this subsection, and the equipment therein, provided the building or structure is not more than three stories above grade plane in height with a separate means of egress:

1. Detached single-family and two-family dwellings.
2. Townhouses.
3. Care facilities for five or fewer people.
4. Owner-occupied or proprietor-occupied lodging houses with no more than five guest rooms and 10 or fewer total occupants.
5. Accessory structures of Group R-5 occupancies.
6. Other occupancies specifically permitted in this code to be classified as Group R-5.

All references to the IRC in the IBC shall be considered to be references to this section.

P. Add Section 310.6.1.1 to the IBC to read:

310.6.1.1 Additional requirements. Methods of construction, materials, systems, equipment, or components for Group R-5 structures not addressed by prescriptive or performance provisions of the VRC shall comply with applicable VCC requirements.

Q. Add Section 310.7 to the IBC to read:

310.7 Radon-resistant construction in Groups R-3 and R-4 structures. Groups R-3 and R-4 structures shall be subject to the radon-resistant construction requirements in Appendix ~~F~~ BE of the IRC in localities enforcing such requirements pursuant to Section ~~R331~~ R333 of the IRC.

R. Add Section 310.8 to the IBC to read:

310.8 Amendments to the IRC. The following changes shall be made to the IRC for its use as part of this code:

1. Add the following definitions to read:

Accessory dwelling unit. A dwelling unit in a two-family dwelling that is accessory to the primary dwelling unit. An accessory dwelling unit provides for separate living, sleeping, eating, cooking, and sanitation facilities for one or more occupants but may share living space, means of egress, utilities, or other components. An accessory dwelling unit fully complies with the requirements of this code for a dwelling unit except where specified otherwise.

Living area. Space within a dwelling unit utilized for living and entertainment, including family rooms, great rooms, living rooms, dens, media rooms, and similar spaces.

Nonpotable fixtures and outlets. Fixtures and outlets that are not dependent on potable water for the safe operation to perform their intended use. Such fixtures and outlets may include water closets, urinals, irrigation, mechanical equipment, and hose connections to perform operations, such as vehicle washing and lawn maintenance.

Nonpotable water systems. Water systems for the collection, treatment, storage, distribution, and use or reuse of nonpotable water. Nonpotable systems include reclaimed water, rainwater, and gray water systems.

Rainwater. Natural precipitation, including snow melt, from roof surfaces only.

Stormwater. Precipitation that is discharged across the land surface or through conveyances to one or more waterways and that may include stormwater runoff, snow melt runoff, and surface runoff and drainage.

Substantial damage. ~~Damage of any origin sustained by a structure whereby the cost of restoring the structure to its before-damaged condition would equal or exceed 50% of the market value of the structure before the damage occurred.~~

~~Substantial Improvement. Any repair, reconstruction, rehabilitation, alteration, addition, or other improvement of a building or structure, the cost of which equals or exceeds 50% of the market value of the structure before the improvement or repair is started. If the structure has sustained substantial damage, any repairs are considered substantial improvement regardless of the actual repair work performed. The term does not, however, include either:~~

- ~~1. Any project for improvement of a building required to correct existing health, sanitary, or safety code violations identified by the building official and that are the minimum necessary to assure safe living conditions.~~
- ~~2. Any alteration of a historic structure, provided that the alteration will not preclude the building or structure's continued designation as a historic structure.~~

Two-family dwelling. A dwelling that includes two dwelling units or one dwelling unit and one accessory dwelling unit.

2. Change the following definitions to read:

Building. A combination of materials, whether portable or fixed, having a roof to form a structure for the use or occupancy by persons, or property. The word “building” shall be construed as though followed by the words “or part or parts thereof” unless the context clearly requires a different meaning. “Building” shall not include roadway tunnels and bridges owned by the Virginia Department of Transportation, which shall be governed by construction and design standards approved by the Virginia Commonwealth Transportation Board.

Dwelling. Any building that contains one or two dwelling units or one dwelling unit and one accessory dwelling unit used, intended, or designed to be built, used, rented, leased, let, or hired out to be occupied or that are occupied for living purposes.

Flood hazard area. The greater of the following two areas:

1. The area within a floodplain subject to a 1.0% or greater chance of flooding in any given year (also known as the 100-year floodplain).
2. The area designated as a flood hazard area on a community's flood hazard map or otherwise legally designated, including areas shown in either the Flood Insurance Study or on the Flood Insurance Rate Map (FIRM) and including areas added to account for future flooding conditions based on the locally adopted sea level rise projected to occur by 2070.

~~Gray water. Water discharged from lavatories, bathtubs, showers, clothes washers, and laundry trays.~~

Manufactured home. A structure subject to federal ~~regulation that~~ regulation, which is transportable in one or more sections; is eight body feet or more in width and 40 body feet or more in length in the traveling mode or is 320 or more square feet when erected on site; is built on a permanent chassis; is designed to be used as a single-family dwelling, with or without a permanent foundation when

connected to the required utilities; and includes the plumbing, heating, air conditioning, and electrical systems contained in the structure.

Substantial Improvement. For the purpose of determining compliance with the flood provisions of this code, any *repair, alteration, addition* or improvement of a building or structure, the cost of which equals or exceeds 50 percent of the market value of the structure, before the improvement or *repair* is started. If the structure has sustained *substantial damage*, any *repairs* are considered *substantial improvement* regardless of the actual *repair* work performed. The term does not, however, include either of the following:

1. Any project for improvement of a building required to correct existing health, sanitary or safety code violations identified by the *code official* and that is the minimum necessary to ensure safe living conditions.
2. Any *alteration* of a historic structure, provided that the *alteration* will not preclude the structure's continued designation as a historic structure.

3. Add the following paragraph to the end of Section R301.2.1 to read:

Wind speeds for localities in special wind regions, near mountainous terrain, and near gorges shall be based on elevation. Areas at 4,000 feet in elevation or higher shall use the ultimate design wind speed of 140 mph (62.6 m/s) and areas lower than 4,000 feet in elevation shall use the ultimate design wind speed of 110 mph (49.2 m/s). Gorge areas shall be based on the highest recorded speed per locality or in accordance with local jurisdiction requirements determined in accordance with Section 26.5.2 of ASCE 7.

4. Change Section R301.2.2 by replacing references to "Section R101.2" with "Section 310.6 of the Virginia Construction Code".

5. Add Exceptions 6 and 7 to Section R302.1 to read:

6. Decks and open porches.

7. Walls of dwellings and accessory structures located on lots in subdivisions or zoning districts where building setbacks established by local ordinance prohibit the walls of the structures on adjacent lots from being closer than 10 feet (3048 mm) to each other at any point along the exterior walls.

5. ~~6.~~ Change the Projections row of table R302.1(1) to remove the top row and change the Minimum Fire Separation Distance for Fire-resistance rated Exterior Wall Elements to less than five feet.

6. ~~7.~~ Change Exception 6 to Section R302.2.6 to read:

6. Townhouse units protected by a fire sprinkler system complying with Section P2904, NFPA 13, NFPA 13R, or NFPA 13D.

7. ~~8.~~ Change Delete Sections R302.3.1 through R302.3.3.2 and change Section R302.3, including Exception 1, and add Exception 3 to read (Exception 2 remains): R302.3 to read:

Dwelling units in two-family dwellings shall be separated from each other by wall and floor assemblies having not less than a one-hour fire-resistance rating where tested in accordance with ASTM E119, UL 263, or Section 703.2.2 of the International Building Code. Fire-resistance-rated floor or ceiling and wall assemblies shall extend to and be tight against the exterior wall, and wall assemblies shall extend from the foundation to the underside of the roof sheathing. Dwelling unit separation wall assemblies that are constructed on a lot line shall be constructed as required in Section R302.2 for townhouses.

1. A fire-resistance rating of 1/2 hour shall be permitted in buildings equipped throughout with an automatic sprinkler system installed in accordance with NFPA 13, NFPA 13R, or Section P2904.

2. Wall assemblies need not extend through attic spaces where the ceiling is protected by not less than 5/8-inch (15.9 mm) Type X gypsum board, an attic draft stop constructed as specified in Section R302.12.1 is provided above and along the wall assembly separating the dwellings and the structural framing supporting the ceiling is protected by not less than 1/2-inch (12.7 mm) gypsum board or equivalent.

3. Fire resistant rated assemblies are not required to separate a dwelling unit and accessory dwelling unit where both units are located on the same lot and comply with Sections R314.7 and R315.5.

~~8.~~ 9. Change Section R302.5.1 to read:

R302.5.1 Opening protection. Openings from a private garage directly into a room used for sleeping purposes shall not be permitted. Other openings between the garage and residence shall be equipped with solid wood doors not less than 1-3/8 inches (35 mm) thick, solid or honeycomb-core steel doors not less than 1-3/8 inches (35 mm) thick, or 20-minute fire-rated doors.

~~9.~~ 10. Delete Section R302.13 in its entirety.

11. Change Sections R306.1.5, R306.1.8, and R306.2 to read:

R306.1.5 Lowest floor. The lowest floor shall be the lowest floor of the lowest enclosed area, including basement and excluding any unfinished flood-resistant enclosure that is usable solely for vehicle parking, building access, or limited (200 square feet or less) storage, provided that such enclosure is not built so as to render the building or structure in violation of this section.

R306.1.8 Flood-resistant materials. Building materials and installation methods used for flooring and interior and exterior walls and wall coverings below the elevation required in Section R306.2 or R306.3 shall be flood damage-resistant materials that conform to the provisions of FEMA TB-2 and ASCE 24.

R306.2 Flood hazard areas (including A Zones). Areas that have been determined to be prone to flooding and that are not subject to high-velocity wave action shall be designated as flood hazard areas. Flood hazard areas that have been delineated as subject to wave heights greater than or equal

to 1-1/2 feet (457 mm) or otherwise designated by the jurisdiction shall be designated as either Coastal A Zones or V, VE, or V1-30 Zones and are subject to the requirements of Section R306.3. Buildings and structures constructed in whole or in part in flood hazard areas shall be designed and constructed in accordance with Sections R306.2.1 through R306.2.4.

12. Change Item 4.2 of Section R306.2.1 to read (exception and other items remain):

4.2 The floors shall be at or above grade on not less than one side. Where a garage or carport is enclosed by walls, the garage or carport shall be used solely for parking, building access, or storage, and the walls shall be constructed of flood damage resistant materials.

13. Change Section R306.3.1 to read:

R306.3.1 Location and site preparation.

1. New buildings and buildings that are determined to be substantially improved shall be located landward of the reach of mean high tide.

2. For any alteration of sand dunes and mangrove stands, the building official shall require submission of an engineering analysis and a satisfactory Comment Document from FEMA for a Conditional Letter of Map Revision (CLOMR) that demonstrates that the proposed alteration will not increase the potential for flood damage.

14. Change Sections R306.3.6 and R306.3.10 to read:

R306.3.6 Enclosed areas below required elevation. Enclosed areas lower than the design flood elevation required in Section R306.3.2 are prohibited in Coastal A Zones and Coastal High Hazard Areas.

R306.3.10 Tanks. Underground tanks are prohibited in Coastal A Zones or Coastal High Hazard Areas. Aboveground tanks shall be installed at or above the design flood elevation required in Section R306.3.2. Where elevated on platforms, the platforms shall be cantilevered from or knee braced to the building or shall be supported on foundations that conform to the requirements of Section R306.3.

10. Add an exception to Section R303.10 to read:

Exception: Seasonal structures not used as a primary residence for more than 90 days per year, unless rented, leased or let on terms expressed or implied to furnish heat, shall not be required to comply with this section.

11. Add Section R303.10.1 to read:

R303.10.1 Nonowner occupied required heating. Every dwelling unit or portion thereof that is to be rented, leased, or let on terms either expressed or implied to furnish heat to the occupants thereof shall be provided with facilities in accordance with Section R303.10 during the period from October 15 to May 1.

12. Add Section R303.11 to read:

~~R303.11 Insect screens. Every door, window, and other outside opening required for ventilation purposes shall be supplied with approved tightly fitted screens of not less than 16 mesh per inch (16 mesh per 25 mm), and every screen door used for insect control shall have a self-closing device.~~

13. Add Section R306.5 to read:

~~R306.5 Water supply sources and sewage disposal systems. The water and drainage system of any building or premises where plumbing fixtures are installed shall be connected to a public or private water supply and a public or private sewer system. As provided for in Section 103.5 of Part I of the Virginia Uniform Statewide Building Code (13VAC5-63), for functional design, water supply sources and sewage disposal systems are regulated and approved by the Virginia Department of Health and the Virginia Department of Environmental Quality.~~

~~Note: See also the Memorandums of Agreement in the "Related Laws Package," which is available from the Virginia Department of Housing and Community Development.~~

14. Change Section R308.4.5 to read:

~~R308.4.5 Glazing and wet surfaces. Glazing in walls, enclosures, or fences containing or facing hot tubs, spas, whirlpools, saunas, steam rooms, bathtubs, showers, and indoor or outdoor swimming pools shall be considered a hazardous location if located less than 60 inches (1524 mm) measured horizontally, in a straight line, from the water's edge and the bottom exposed edge of the glazing is less than 60 inches (1524 mm) measured vertically above any standing or walking surface. This shall apply to single glazing and each pane in multiple glazing.~~

15. Change Section R310.1, including Exception 2 to read (Exceptions 1 and 3 remain):

~~R310.1 Emergency escape and rescue opening required. Basements, habitable attics, and every sleeping room designated on the construction documents shall have not less than one operable emergency escape and rescue opening. Where basements contain one or more sleeping rooms, an emergency egress and rescue opening shall be required in each sleeping room. Emergency escape and rescue openings shall open directly into a public way, or to a yard or court having a minimum width of 36 inches (914 mm) that opens to a public way.~~

~~2. Dwelling units equipped throughout with an approved automatic sprinkler system installed in accordance with NFPA 13, NFPA 13R, or NFPA 13D or Section P2904.~~

16. Delete Section R310.2.2 and change Section R310.2.1 to read:

~~R310.2.1 Minimum opening area. Emergency and escape rescue openings shall have a net clear opening of not less than 5.7 square feet (0.530 m²). The net clear opening dimensions required by this section shall be obtained by the normal operation of the emergency escape and rescue opening from the inside, including the tilting or removal of the sash as the normal operation. The net clear height opening shall be not less than 24 inches (610 mm), and the net clear width shall be not less than 20 inches (508 mm).~~

Exception: Grade floor or below grade openings shall have a net clear opening of not less than five square feet (0.465 m²).

17. Change Section R311.1 to read:

R311.1 Means of egress. Dwellings and each dwelling unit in a two-family dwelling shall be provided with a means of egress in accordance with this section. The means of egress shall provide a continuous and unobstructed path of vertical and horizontal egress travel from all portions of the dwelling to the required egress door without requiring travel through a garage. The required egress door shall open directly into a public way or to a yard or court that opens to a public way.

19. Change the exception to Section R311.3.1 to read:

Exception: The landing or floor on the exterior side shall be not more than 8-1/4 inches (210 mm) below the top of the threshold provided the door does not swing over the landing or floor.

20. Change Section R311.3.2 to read:

R311.3.2 Floor elevations for other exterior doors. Doors other than the required egress door shall be provided with landings or floors not more than 8-1/4 inches (210 mm) below the top of the threshold.

Exception: A top landing is not required where a stairway of not more than two risers is located on the exterior side of the door, provided that the door does not swing over the stairway.

21. Change Section R311.7.5.1 to read:

R311.7.5.1 Risers. The riser height shall be not more than 8-1/4 inches (210 mm). The riser shall be measured vertically between the leading edges of the adjacent treads. The greatest riser height within any flight of stairs shall not exceed the smallest by more than 3/8 inch (9.5 mm). Risers shall be vertical or sloped from the underside of the nosing of the tread above at an angle not more than 30 degrees (0.51 rad) from the vertical. Open risers are permitted, provided that the openings located more than 30 inches (762 mm), as measured vertically, to the floor or grade below do not permit the passage of a four-inch-diameter (102 mm) sphere.

Exceptions:

1. The opening between adjacent treads is not limited on spiral stairways.
2. The riser height of spiral stairways shall be in accordance with Section R311.7.10.1.

22. Change Section R311.7.5.2 to read:

R311.7.5.2 Treads. The tread depth shall be not less than nine inches (229 mm). The tread depth shall be measured horizontally between the vertical planes of the foremost projection of adjacent treads and at a right angle to the tread's leading edge. The greatest tread depth within any flight of stairs shall not exceed the smallest by more than 3/8 inch (9.5 mm).

23. Change Section R312.2.1 to read (items 1 and 2 remain):

~~R312.2.1 Window sills. In dwelling units, where the top of the sill of an operable window opening is located less than 18 inches (457 mm) above the finished floor and greater than 72 inches (1829 mm) above the finished grade or other surface below on the exterior of the building, the operable window shall comply with one of the following:~~

24. ~~15.~~ Replace Section ~~R313~~ R309 with the following:

Section ~~R313~~ R309. Automatic Fire Sprinkler Systems.

~~R313.1~~ R309.1 Townhouse automatic fire sprinkler systems. Notwithstanding the requirements of Section 103.3, where installed, an automatic residential fire sprinkler system for townhouses shall be designed and installed in accordance with NFPA 13D or Section P2904.

Exception: An automatic residential fire sprinkler system shall not be required when additions or alterations are made to existing townhouses that do not have an automatic residential fire sprinkler system installed.

~~R313.1.1~~ R309.1.1 Design and installation. Automatic residential fire sprinkler systems for townhouses shall be designed and installed in accordance with Section P2904 or NFPA 13D, NFPA 13, or NFPA 13R.

~~R313.2~~ R309.2 One-family and two-family dwellings automatic fire sprinkler systems. Notwithstanding the requirements of Section 103.3, where installed, an automatic residential fire sprinkler system shall be designed and installed in accordance with Section P2904, or NFPA 13D, NFPA 13, or NFPA 13R.

Exception: An automatic residential fire sprinkler system shall not be required for additions or alterations to existing buildings that are not already provided with an automatic residential fire sprinkler system.

~~R313.2.1~~ R309.2.1 Design and installation. Automatic residential fire sprinkler systems shall be designed and installed in accordance with Section P2904 or NFPA 13D, 13, or 13R.

25. ~~16.~~ Delete Section ~~R314.2.2~~ R310.2.2.

26. ~~17.~~ Delete Exception 2 and change Exception 1 to Section ~~R314.6~~ R310.6 to read:

Exception: Smoke alarms shall be permitted to be battery operated with a minimum 10-year battery where installed in buildings without commercial power.

27. ~~18.~~ Change Section ~~R314.7~~ R310.7 to read:

~~R314.7~~ R310.7 Fire alarm systems. A fire alarm system complying with Sections ~~R314.7.1~~ R310.7.1 through ~~R314.7.4~~ R310.7.4 shall be installed within a two-family dwelling that is constructed without fire separations in accordance with Exception 3 of Section R302.3 and shall be installed in such a manner that the actuation of an alarm will activate all notification appliances within both dwelling units. Fire alarm systems shall be permitted to be used in other dwelling units in lieu of smoke alarms and shall comply with Sections ~~R314.7.1~~ R310.7.1 through ~~R314.7.4~~ R310.7.4.

~~28.~~ 19. Change Section ~~R314.7.3~~ R310.7.3 to read:

~~R314.7.3~~ R310.7.3 Permanent fixture. Where a household fire alarm system is installed, it shall become a permanent fixture of the dwelling unit.

~~29.~~ 20. Change Section ~~R315.1.1~~ R311.1.1 to read:

~~R315.1.1~~ R311.1.1 Listings. Carbon monoxide alarms shall be hard wired, plug-in or battery type; listed as complying with UL 2034; and installed in accordance with this code and the manufacturer's installation instructions. Combination carbon monoxide and smoke alarms shall be listed in accordance with UL 2034 and UL 217.

~~30.~~ 21. Change Section ~~R315.2~~ R311.2 to read:

~~R315.2~~ R311.2 Where required. Carbon monoxide alarms shall be provided in accordance with this section.

~~31.~~ 22. Delete Section ~~R315.2.2~~ R311.2.2.

~~32.~~ 23. Change Section ~~R315.5~~ R311.5 to read (exception remains):

~~R315.5~~ R311.5 Interconnectivity. Where more than one carbon monoxide alarm is required to be installed within an individual dwelling unit in accordance with Section ~~R315.3~~ R311.3, the alarm devices shall be interconnected in such a manner that the actuation of one alarm will activate all of the alarms in the dwelling. Alarm devices within a two-family dwelling constructed without fire separations in accordance with Exception 3 of Section R302.3 shall be interconnected in such a manner that the actuation of one alarm within either unit will activate all alarms within both dwelling units. Physical interconnection of carbon monoxide alarms shall not be required where listed wireless alarms are installed and all alarms sound upon activation of one alarm.

~~33.~~ 24. Delete Section ~~R315.6~~ R311.6.

~~34.~~ 25. Change Section ~~R315.7.3~~ R311.7.3 to read:

~~R315.7.3~~ R311.7.3 Permanent fixture. Where a household carbon monoxide detection system is installed, it shall become a permanent fixture of the occupancy.

26. Change Exception 1 and delete Exceptions 1.1, 1.2, 3, and 4 to Section R316.3 (Exception 2 remains) to read:

1. The aggregate area of the habitable attic is not greater than two-thirds of the floor area of the story below or a maximum of 400 square feet.

~~35.~~ Add Section R320.3 to read:

~~R320.3 Universal design features for accessibility in dwellings. Dwellings constructed under the IRC not subject to Section R320.1 may comply with Section 1110.17 of the USBC and be approved by the local building department as dwellings containing universal design features for accessibility.~~

36. Change Sections R322.1.5, R322.1.8, and R322.2 to read:

~~R322.1.5 Lowest floor. The lowest floor shall be the lowest floor of the lowest enclosed area, including basement and excluding any unfinished flood-resistant enclosure that is usable solely for vehicle parking, building access, or limited (200 square feet or less) storage, provided that such enclosure is not built so as to render the building or structure in violation of this section.~~

~~R322.1.8 Flood-resistant materials. Building materials and installation methods used for flooring and interior and exterior walls and wall coverings below the elevation required in Section R322.2 or R322.3 shall be flood damage-resistant materials that conform to the provisions of FEMA TB-2 and ASCE 24.~~

~~R322.2 Flood hazard areas (including A Zones). Areas that have been determined to be prone to flooding and that are not subject to high-velocity wave action shall be designated as flood hazard areas. Flood hazard areas that have been delineated as subject to wave heights greater than or equal to 1-1/2 feet (457 mm) or otherwise designated by the jurisdiction shall be designated as either Coastal A Zones or V, VE, or V1-30 Zones and are subject to the requirements of Section R322.3. Buildings and structures constructed in whole or in part in flood hazard areas shall be designed and constructed in accordance with Sections R322.2.1 through R322.2.4.~~

37. Change Item 4.2 of Section R322.2.1 to read (exception and other items remain):

~~R322.2.1 Elevation requirements:~~

~~4.2 They shall be at or above grade on not less than one side. Where a garage or carport is enclosed by walls, the garage or carport shall be used solely for parking, building access, or storage, and the walls shall be constructed of flood-resistant materials.~~

38. Change Section R322.3.1 to read:

~~R322.3.1 Location and site preparation.~~

- ~~1. New buildings and buildings that are determined to be substantially improved shall be located landward of the reach of mean high tide.~~
- ~~2. For any alteration of sand dunes and mangrove stands, the building official shall require submission of an engineering analysis and a satisfactory Comment Document from FEMA for a Conditional Letter of Map Revision (CLOMR) that demonstrates that the proposed alteration will not increase the potential for flood damage.~~

39. Change Sections R322.3.6 and R322.3.10 to read:

~~R322.3.6 Enclosed areas below required elevation. Enclosed areas lower than the design flood elevation required in Section R322.3.2 are prohibited in Coastal A Zones and Coastal High Hazard Areas.~~

~~R322.3.10 Tanks. Underground tanks are prohibited in Coastal A Zones or Coastal High Hazard Areas. Aboveground tanks shall be installed at or above the design flood elevation required in Section~~

~~R322.3.2. Where elevated on platforms, the platforms shall be cantilevered from or knee-braced to the building or shall be supported on foundations that conform to the requirements of Section R322.3.2.~~

27. Change the exception to Section R318.3.1 to read:

Exception: The landing or floor on the exterior side shall be not more than 8-1/4 inches (210 mm) below the top of the threshold provided the door does not swing over the landing or floor.

28. Change Section R318.3.2 (exception remains) to read:

R311.3.2 Floor elevations at other exterior doors. Exterior doors other than the required egress door shall be provided with landings or floors not more than 8-1/4 inches (210 mm) below the top of the threshold.

29. Change Section R318.7.5.1 (exceptions remain) to read:

R318.7.5.1 Risers. The riser height shall be not more than 8-1/4 inches (210 mm). The riser shall be measured vertically between the leading edges of the adjacent treads. The greatest riser height within any flight of stairs shall not exceed the smallest by more than 3/8 inch (9.5 mm). Risers shall be vertical or sloped from the underside of the nosing of the tread above at an angle not more than 30 degrees (0.51 rad) from the vertical. Open risers are permitted, provided that the openings located more than 30 inches (762 mm), as measured vertically, to the floor or grade below do not permit the passage of a four-inch-diameter (102 mm) sphere.

30. Change Section R318.7.5.2 to read:

R318.7.5.2 Treads. The tread depth shall be not less than nine inches (229 mm). The tread depth shall be measured horizontally between the vertical planes of the foremost projection of adjacent treads and at a right angle to the tread's leading edge. The greatest tread depth within any flight of stairs shall not exceed the smallest by more than 3/8 inch (9.5 mm).

31. Change Exception 2 to Section R318.7.6 (remainder of Section and Exceptions 1, 3, and 4 remain) to read:

2. At an enclosed garage, the top landing at the stair shall be permitted to be not more than 8-1/4 inches (197 mm) below the top of the threshold.

32. Change Section R319.1, including Exception 3 to read (Exceptions 1, 2, and 4 remain):

319.1 Emergency escape and rescue opening required. Basements, habitable attics, and every sleeping room designated on the construction documents shall have not less than one operable emergency escape and rescue opening. Where basements contain one or more sleeping rooms, an emergency egress and rescue opening shall be required in each sleeping room. Emergency escape and rescue openings shall open directly into a public way, or to a yard or court having a minimum width of 36 inches (914 mm) that opens to a public way.

3. Dwelling units equipped throughout with an approved automatic sprinkler system installed in accordance with NFPA 13, NFPA 13R, or NFPA 13D or Section P2904.

33. Delete Section R319.2.2 and change Section R319.2.1 to read:

R319.2.1 Minimum opening area. Emergency and escape rescue openings shall have a net clear opening of not less than 5.7 square feet (0.530 m²). The net clear opening dimensions required by this section shall be obtained by the normal operation of the emergency escape and rescue opening from the inside, including the tilting or removal of the sash as the normal operation. The net clear height opening shall be not less than 24 inches (610 mm), and the net clear width shall be not less than 20 inches (508 mm).

Exception: Grade floor or below grade openings shall have a net clear opening of not less than five square feet (0.465 m²).

34. Change Section R319.4.4 by deleting “through R319.2.2” from the first sentence (remainder of Section remains).

35. Change Section R321.2.1 to read (items 1 and 2 remain):

R321.2.1 Window sills. In dwelling units, where the top of the sill of an operable window opening is located less than 18 inches (457 mm) above the finished floor and greater than 72 inches (1829 mm) above the finished grade or other surface below on the exterior of the building, the operable window shall comply with one of the following:

36. Change Section R321.2.2 by deleting the reference to Section “R319.2.2”.

37. Change Section R322.3 by replacing reference to “Section R101.2” with “Section 310.6 of the Virginia Construction Code”.

38. Add Section R322.4 to read:

R322.4 Universal design features for accessibility in dwellings. Dwellings constructed under the IRC not subject to Section R320.1 may comply with Section 1110.17 of the USBC and be approved by the local building department as dwellings containing universal design features for accessibility.

39. Change Section R324.4.5 to read:

R324.4.5 Glazing and wet surfaces. Glazing in walls, enclosures, or fences containing or facing hot tubs, spas, whirlpools, saunas, steam rooms, bathtubs, showers, and indoor or outdoor swimming pools shall be considered a hazardous location if located less than 60 inches (1524 mm) measured horizontally, in a straight line, from the water's edge and the bottom exposed edge of the glazing is less than 60 inches (1524 mm) measured vertically above any standing or walking surface. This shall apply to single glazing and each pane in multiple glazing.

40. Add an exception to Section R325.8 to read:

Exception: Seasonal structures not used as a primary residence for more than 90 days per year, unless rented, leased or let on terms expressed or implied to furnish heat, shall not be required to comply with this section.

41. Add Section R325.8.1 to read:

R325.8.1 Nonowner occupied required heating. Every dwelling unit or portion thereof that is to be rented, leased, or let on terms either expressed or implied to furnish heat to the occupants thereof shall be provided with facilities in accordance with Section R325.8 during the period from October 15 to May 1.

42. Add Section R325.9 to read:

R325.9 Insect screens. Every door, window, and other outside opening required for ventilation purposes shall be supplied with approved tightly fitted screens of not less than 16 mesh per inch (16 mesh per 25 mm), and every screen door used for insect control shall have a self-closing device.

43. Add Section R326.5 to read:

R326.5 Water supply sources and sewage disposal systems. The water and drainage system of any building or premises where plumbing fixtures are installed shall be connected to a public or private water supply and a public or private sewer system. As provided for in Section 103.5 of Part I of the Virginia Uniform Statewide Building Code (13VAC5-63), for functional design, water supply sources and sewage disposal systems are regulated and approved by the Virginia Department of Health and the Virginia Department of Environmental Quality.

Note: See also the Memorandums of Agreement in the "Related Laws Package," which is available from the Virginia Department of Housing and Community Development.

40. ~~44. Change~~ Delete Section R329.6.2.1 and change Section ~~R324.6.2~~ R329.6.2 to read:

~~324.6.2~~ R329.6.2 Setback at ridge. Not less than an 18-inch (457 mm) clear setback is required on both sides of a horizontal ridge.

41. Change Exception 1 and delete Exceptions 1.1, 1.2, 3, and 4 to Section R326.3 to read (Exception 2 remains):

~~R326.3 Story above grade plane. A habitable attic shall be considered a story above grade plane.~~

~~Exceptions: A habitable attic shall not be considered to be a story above grade plane provided that the habitable attic meets all the following:~~

- ~~1. The aggregate area of the habitable attic is not greater than two thirds of the floor area of the story below or a maximum of 400 square feet.~~

42. ~~45.~~ Add Section ~~R331~~ R333 Radon-Resistant Construction.

43. ~~46.~~ Add Section ~~R331.1~~ R333.1 to read:

~~R331.1~~ R333.1 Local enforcement of radon requirements. Following official action under Article 7 (§ 15.2-2280 et seq.) of Chapter 22 of Title 15.2 of the Code of Virginia by a locality in areas of high radon potential, as indicated by Zone 1 on the U.S. EPA Map of Radon Zones (IRC Figure ~~AF101~~, BE101.1), such locality shall enforce the provisions contained in Appendix ~~AF~~, BE.

Exception: Buildings or portions thereof with crawl space foundations that are ventilated to the exterior shall not be required to provide radon-resistant construction.

44. ~~47~~. Add Section ~~R332~~ R334 Patio Covers.

45. ~~48~~. Add Section ~~R332.1~~ R334.1 to read:

~~R332.1~~ R334.1 Use of Appendix ~~AH~~ BF for patio covers. Patio covers shall comply with the provisions in Appendix ~~AH~~, BF.

46. ~~49~~. Add Section ~~R333~~ R335 Sound Transmission.

47. ~~50~~. Add Section ~~R333.1~~ R335.1 to read:

~~R333.1~~ R335.1 Sound transmission between dwelling units. Construction assemblies separating dwelling units shall provide airborne sound insulation as required in Appendix ~~AK~~, BG.

Exception: Accessory dwelling units.

48. ~~51~~. Add Section ~~R333.2~~ R335.2 to read:

~~R333.2~~ R335.2 Airport noise attenuation. This section applies to the construction of the exterior envelope of detached one-family and two-family dwellings and multiple single-family dwellings (townhouses) not more than three stories high with separate means of egress within airport noise zones when enforced by a locality pursuant to § 15.2-2295 of the Code of Virginia. The exterior envelope of such structures shall comply with Section 1206.4 of the state amendments to the IBC.

49. ~~52~~. Add Section ~~R334~~ R336 Fire Extinguishers.

50. ~~53~~. Add Section ~~R334.1~~ R336.1 to read:

~~R334.1~~ R336.1 Kitchen areas. Other than where the dwelling is equipped with an approved sprinkler system in accordance with Section ~~R313~~, R309, a fire extinguisher having a rating of 2-A:10-B:C or an approved equivalent type of fire extinguisher shall be installed in the kitchen area.

51. ~~54~~. Add Section ~~R335~~ R337 Interior Passage.

52. ~~55~~. Add Sections ~~R335.1~~ R337.1 through ~~R335.6~~ R337.6 to read:

~~R335.1~~ R337.1 General. This section applies to new dwelling units that have both a kitchen and a living area on the same floor level as the egress door required by Section ~~R311.2~~, R318.2. This section is not applicable to additions, reconstruction, alteration, or repair.

~~R335.2~~ R337.2 Kitchen. One interior passage route from the egress door to the kitchen shall comply with ~~R335.6~~, R337.6.

~~R335.3~~ R337.3 Living area. One interior passage route from the egress door to at least one living area shall comply with ~~R335.6.~~ R337.6.

~~R335.4~~ R337.4 Bedroom. Where the dwelling unit has a bedroom on the same floor level as the egress door, one interior passage route from the egress door to at least one bedroom shall comply with ~~R335.6.~~ R337.6.

~~R335.5~~ R337.5 Bathroom. Where a dwelling unit has a bathroom on the same floor level as the egress door, and the bathroom contains a water closet, lavatory, and bathtub or shower, one interior passage route from the egress door to at least one bathroom shall comply with ~~R335.6.~~ R337.6. Bathroom fixture clearances shall comply with R307 and access to fixtures is not required to comply with ~~R335.6.~~ R337.6.

~~R335.6~~ R337.6 Opening widths. Opening widths along the interior passage route required by this section shall comply with the following:

1. Cased openings shall provide a minimum 34 inch (864 mm) clear width.
2. Doors shall be a nominal 34 inch (864 mm) minimum width. Double doors are permitted to be used to meet this requirement.

~~53. 56.~~ Add Section ~~R336~~ R338 Tiny Houses.

~~54. 57.~~ Add Section ~~R336.1~~ R338.1 to read:

~~R336.1~~ R338.1 General. Appendix AQ ~~BB~~ may be used as an alternative to the requirements of this code where a dwelling is 400 square feet (37 m²) or less in floor area.

~~55. 58.~~ Change Section R401.3 to read:

R401.3 Drainage. Surface drainage shall be diverted to a storm sewer conveyance or other approved point of collection that does not create a hazard to the dwelling unit. Lots shall be graded to drain surface water away from foundation walls. The grade shall fall a minimum of six inches (152 mm) within the first 10 feet (3048 mm).

Exception: Where lot lines, walls, slopes, or other physical barriers prohibit six inches (152 mm) of fall within 10 feet (3048 mm), drains or swales shall be constructed to ensure drainage away from the structure. Impervious surfaces within 10 feet (3048 mm) of the building foundation shall be sloped a minimum of 1.0% away from the building.

~~56. 59.~~ Add the following exceptions to Section R403.1 to read:

Exceptions:

1. One-story detached accessory structures used as tool and storage sheds, playhouses, and similar uses, not exceeding 256 square feet (24 m²) of building area, provided that all of the following conditions are met:

- 1.1. The building eave height is 10 feet or less.

1.2. The maximum height from the finished floor level to grade does not exceed 18 inches (457 mm).

1.3. The supporting structural elements in direct contact with the ground shall be placed level on firm soil and when such elements are wood they shall be approved pressure preservative treated suitable for ground contact use.

1.4. The structure is anchored to withstand wind loads as required by this code.

1.5. The structure shall be of light-frame construction whose vertical and horizontal structural elements are primarily formed by a system of repetitive wood or light gauge steel framing members, with walls and roof of light weight material, not slate, tile, brick, or masonry.

2. Footings are not required for ramps serving dwelling units in Groups R-3 and R-5 occupancies where the height of the entrance is no more than 30 inches (762 mm) above grade.

~~57- 60.~~ Change Section R403.1.6 to read (exceptions remain):

R403.1.6 Foundation anchorage. Wood sill plates and wood walls supported directly on continuous foundations shall be anchored to the foundation in accordance with this section.

Cold-formed steel framing shall be anchored directly to the foundation or fastened to wood sill plates in accordance with Section R505.3.1 or R603.3.1, as applicable. Wood sill plates supporting cold-formed steel framing shall be anchored to the foundation in accordance with this section.

Wood foundation plates or sills shall be bolted or anchored to the foundation with not less than 1/2-inch-diameter (12.7 mm) steel bolts or approved anchors spaced to provide equivalent anchorage as the steel bolts. Bolts shall be embedded not less than seven inches (178 mm) into concrete or grouted cells of concrete masonry units. The centerline of the bolts shall be located a minimum of 1.75 inches (44.5mm) from the edge of the sill plate. Bolts shall be spaced not more than six feet (1829 mm) on center and there shall be not less than two bolts or anchor straps per piece with one bolt or anchor strap located not more than 12 inches (305 mm) or less than four inches (102 mm) from each end of each piece. A properly sized nut and washer shall be tightened on each bolt to the plate. Interior bearing wall sole plates on monolithic slab foundation that are not part of a braced wall panel shall be positively anchored with approved fasteners. Sill plates and sole plates shall be protected against decay and termites where required by Sections ~~R317~~ R304 and ~~R318~~ R305. Anchor bolts shall be permitted to be located while concrete is still plastic and before it has set. Where anchor bolts resist placement or the consolidation of concrete around anchor bolts is impeded, the concrete shall be vibrated to ensure full contact between the anchor bolts and concrete.

~~58- 61.~~ Delete Section R404.1.9.2.

62. Change Section R404.5.1 by replacing the reference to "Section R106.1" with reference to "Section 109".

~~59- 63.~~ Change Item 2.4 in Section R408.3 to read:

2.4. Dehumidification sized to provide 70 pints (33 liters) of moisture removal per day for every 1,000 square feet (93 m²) of crawl space floor area.

~~60.~~ 64. Add Section R408.3.1 to read:

R408.3.1 Termite inspection. Where an unvented crawl space is installed and meets the criteria in Section R408, the vertical face of the sill plate shall be clear and unobstructed and an inspection gap shall be provided below the sill plate along the top of any interior foundation wall covering. The gap shall be a minimum of one inch (25.4 mm) and a maximum of two inches (50.8 mm) in width and shall extend throughout all parts of any foundation that is enclosed. Joints between the sill plate and the top of any interior wall covering may be sealed.

Exceptions:

1. In areas not subject to damage by termites as indicated by Table R301.2.
2. Where other approved means are provided to inspect for potential damage.

Where pier and curtain foundations are installed as depicted in Figure R404.1.5.3, the inside face of the rim joist and sill plate shall be clear and unobstructed except for construction joints, which may be sealed.

Exception: Fiberglass or similar insulation may be installed if easily removable.

65. Change Section R502.12.1 by replacing the reference to "Section R106.1" with reference to "Section 109".

~~61.~~ 66. Change Section ~~R506.2.1~~ R506.3.1 to read:

~~R506.2.1~~ R506.3.1 Fill. Fill material shall be free of vegetation and foreign material and shall be natural nonorganic material that is not susceptible to swelling when exposed to moisture. The fill shall be compacted to assure uniform support of the slab, and except where approved, the fill depth shall not exceed 24 inches (610 mm) for clean sand or gravel and eight inches (203 mm) for earth.

Exception: Material other than natural material may be used as fill material when accompanied by a certification from an RDP and approved by the building official.

~~62.~~ 67. Change Section ~~R506.2.2~~ R506.3.2 to read:

~~R506.2.2~~ R506.3.2 Base. A four-inch-thick (102 mm) base course consisting of clean graded sand, gravel, or crushed stone passing a two-inch (51 mm) sieve shall be placed on the prepared subgrade when the slab is below grade.

Exception: A base course is not required when the concrete slab is installed on well drained or sand-gravel mixture soils classified as Group I according to the United Soil Classification System in accordance with Table ~~R405.1~~ R401.4.1(2). Material other than natural material may be used as base course material when accompanied by a certification from an RDP and approved by the building official.

68. Change reference to "Section R104.2.2" in footnote "a" to Table R602.3(1) with reference to "Section 112.2".

~~63.~~ 69. Change Section R602.10 to read:

R602.10 Wall bracing. Buildings shall be braced in accordance with this section or Section R602.12. Where a building, or portion thereof, does not comply with one or more of the bracing requirements in this section, those portions shall be designed and constructed in accordance with Section R301.1.

The building official shall be permitted to require the permit applicant to identify braced wall lines and braced wall panels on the construction documents as described in this section and provide associated analysis. The building official shall be permitted to waive the analysis of the upper floors where the cumulative length of wall openings of each upper floor wall is less than or equal to the length of the openings of the wall directly below.

~~64.~~ 70. Add an exception to Section R602.10.9 to read:

Exception: For masonry stem walls, an approved post-installed adhesive anchoring system shall be permitted as an alternative to the Optional Stem Wall Reinforcement detail in Figure R602.10.9. A minimum of two anchors shall be installed as indicated in Figure R602.10.9. Anchors shall be located not more than four inches (102 mm) from each end of the stem wall. Anchors shall be installed into the concrete footing as follows:

1. Five-eighth inch (16 mm) threaded rod using a 3/4 inch (19 mm) diameter drilled hole with a minimum embedment of six inches (152 mm).
2. Number 4 size reinforcing bar using a 5/8-inch (16 mm) diameter drilled hole with a minimum embedment of 4-1/2 inches (114 mm).

A minimum footing thickness of eight inches (203 mm) is required and the minimum distance from each anchor to the edge of the footing shall be 3-3/4 inches (95 mm). The anchoring adhesive and anchors shall be installed in accordance with the manufacturer's instructions and have a minimum tensile capacity of 5,000 lbs. (22 kN). The bond beam reinforcement and attachment of braced wall panels to the stem wall shall be as shown in Figure R602.10.9.

~~65.~~ 71. Replace Section R602.12, including all subsections, with the following:

R602.12 Practical wall bracing. All buildings in Seismic Design Categories A and B and detached buildings in Seismic Design Category C shall be permitted to be braced in accordance with this section as an alternative to the requirements of Section R602.10. Where a building, or portion thereof, does not comply with one or more of the bracing requirements in this section, those portions shall be designed and constructed in accordance with Section R301.1. The use of other bracing provisions of Section R602.10, except as specified in this section, shall not be permitted.

The building official shall be permitted to require the permit applicant to identify bracing on the construction documents and provide associated analysis. The building official shall be permitted to

waive the analysis of the upper floors where the cumulative length of wall openings of each upper floor wall is less than or equal to the length of the openings of the wall directly below.

R602.12.1 Sheathing materials. The following materials shall be permitted for use as sheathing for wall bracing. Exterior walls shall be sheathed on all sheathable surfaces, including infill areas between bracing locations, above and below wall openings, and on gable end walls.

1. Wood structural panels with a minimum thickness of 7/16 inch (9.5 mm) fastened in accordance with Table R602.3(3).
2. Structural fiberboard sheathing with a minimum thickness of 1/2 inch (12.7 mm) fastened in accordance with Table R602.3(1).
3. Gypsum board with a minimum thickness of 1/2 inch (12.7 mm) fastened in accordance with Table R702.3.5 on interior walls only.

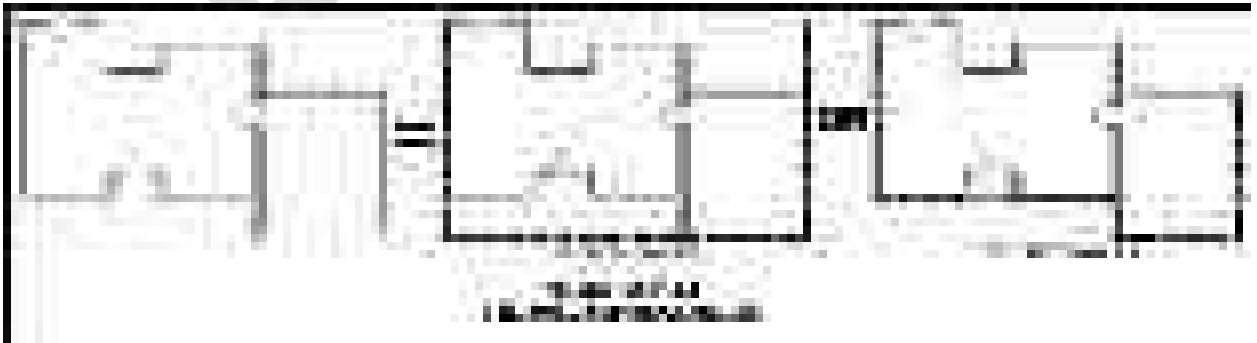
R602.12.2 Braced wall panels. Braced wall panels shall be full-height wall sections sheathed with the materials listed in Section R602.12.1 and complying with the following:

1. Exterior braced wall panels shall have a minimum length based on the height of the adjacent opening as specified in Table R602.12.2. Panels with openings on both sides of differing heights shall be governed by the taller opening when determining panel length.
2. Interior braced wall panels shall have a minimum length of 48 inches (1220 mm) when sheathing material is applied to one side. Doubled-sided applications shall be permitted to be considered two braced wall panels.
3. Braced wall panels shall be permitted to be constructed of Methods ABW, PFH, PFG, and CS-PF in accordance with Section R602.10.4.
4. Exterior braced wall panels, other than the methods listed in Item 3 shall have a finish material installed on the interior. The finish material shall consist of 1/2 inch (12.7 mm) gypsum board or equivalent and shall be permitted to be omitted where the required length of bracing, as determined in Section R602.12.4, is multiplied by 1.40, unless otherwise required by Section R302.6.
5. Vertical sheathing joints shall occur over and be fastened to common studs.
6. Horizontal sheathing joints shall be edge nailed to 1-1/2 inch (38 mm) minimum thick common blocking.

Table R602.12.2 Braced Wall Panel Lengths	
Location	Wall Height (feet)

	8	9	10	11	12
	Minimum Panel Length (inches)				
Adjacent garage door of one-story garage ^a	24	27	30	33	36
Adjacent all other openings ^b					
Clear opening height (inches) ≤ 64	24	27	30	33	36
Clear opening height (inches) ≤ 72	27	27	30	33	36
Clear opening height (inches) ≤ 80	30	30	30	33	36
Clear opening height (inches) > 80	36	36	36	40	40
For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm. a. Braced wall panels supporting a gable end wall or roof load only. b. Interpolation shall be permitted.					

R602.12.3 Circumscribed rectangle. Required length of bracing shall be determined by circumscribing one or more rectangles around the entire building or portions thereof as shown in Figure R602.12.3. Rectangles shall surround all enclosed offsets and projections, such as sunrooms and attached garages. Chimneys, partial height projections, and open structures, such as carports and decks, shall be excluded from the rectangle. Each rectangle shall have no side greater than 80 feet (24,384 mm) with a maximum 3:1 ratio between the long and short side. Rectangles shall be permitted to be skewed to accommodate angled projections as shown in Figure R602.12.4.3.



R602.12.4 Required length of bracing. The required length of bracing for each side of a circumscribed rectangle shall be determined using Table R602.12.4. Where multiple rectangles share a common side or sides, the required length of bracing shall equal the sum of the required lengths from all shared rectangle sides.

Table R602.12.4 Required Length of Bracing Along Each Side of a Circumscribed Rectangle^{a,b,c}																		
Wind Speed	Eave-to-Ridge Height (feet)	Number of Floor Levels Above ^{e,f}	Required Length of Bracing on Front/Rear Side (feet)								Required Length of Bracing on Left/Right Side (feet)							
			Length of Left/Right Side (feet)								Length of Front/Rear Side (feet)							
			10	20	30	40	50	60	70	80	10	20	30	40	50	60	70	80
115	10	0	2.0	3.5	5.0	6.0	7.5	9.0	10.5	12.0	2.0	3.5	5.0	6.0	7.5	9.0	10.5	12.0
		1 ^d	3.5	6.5	9.0	12.0	14.5	17.0	19.8	22.6	3.5	6.5	9.0	12.0	14.5	17.0	19.8	22.6
		2 ^d	5.0	9.5	13.5	17.5	21.5	25.0	29.2	33.4	5.0	9.5	13.5	17.5	21.5	25.0	29.2	33.4
	15	0	2.6	4.6	6.5	7.8	9.8	11.7	13.7	15.7	2.6	4.6	6.5	7.8	9.8	11.7	13.7	15.7
		1 ^d	4.0	7.5	10.4	13.8	16.7	19.6	22.9	26.2	4.0	7.5	10.4	13.8	16.7	19.6	22.9	26.2
		2 ^d	5.5	10.5	14.9	19.3	23.7	27.5	32.1	36.7	5.5	10.5	14.9	19.3	23.7	27.5	32.1	36.7
	20	0	2.9	5.2	7.3	8.8	11.1	13.2	15.4	17.6	2.9	5.2	7.3	8.8	11.1	13.2	15.4	17.6
		1 ^d	4.5	8.5	11.8	15.6	18.9	22.1	25.8	29.5	4.5	8.5	11.8	15.6	18.9	22.1	25.8	29.5
		2 ^d	6.2	11.9	16.8	21.8	27.1	31.1	36.3	41.5	6.2	11.9	16.8	21.8	27.1	31.1	36.3	41.5
130	10	0	2.5	4.0	6.0	7.5	9.5	11.0	12.8	14.6	2.5	4.0	6.0	7.5	9.5	11.0	12.8	14.6
		1 ^d	4.5	8.0	11.0	14.5	18.0	21.0	24.5	28.0	4.5	8.0	11.0	14.5	18.0	21.0	24.5	28.0
		2 ^d	6.0	11.5	16.5	21.5	26.5	31.0	36.0	41.0	6.0	11.5	16.5	21.5	26.5	31.0	36.0	41.0
	15	0	3.4	5.2	7.8	9.8	12.4	14.3	16.7	19.1	3.4	5.2	7.8	9.8	12.4	14.3	16.7	19.1
		1 ^d	5.2	9.2	12.7	16.7	20.7	24.2	28.2	32.2	5.2	9.2	12.7	16.7	20.7	24.2	28.2	32.2

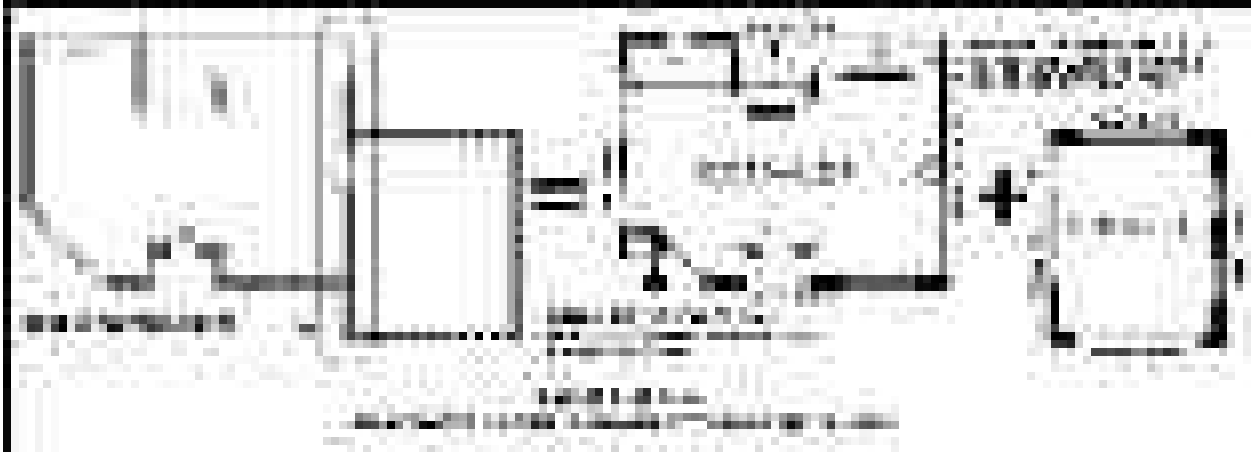
		2 ^d	6. 6	12. 7	18. 2	23. 7	29. 2	34. 1	39. 8	45. 5	6. 6	12. 7	18. 2	23. 7	29. 2	34. 1	39. 8	45. 5
		0	3. 8	5.9	8.8	11. 1	14. 0	16. 2	18. 9	21. 6	3. 8	5.9	8.8	11. 1	14. 0	16. 2	18. 9	21. 6
	20	1 ^d	5. 9	10. 4	14. 4	18. 9	23. 4	27. 3	31. 8	36. 3	5. 9	10. 4	14. 4	18. 9	23. 4	27. 3	31. 8	36. 3
		2 ^d	7. 5	14. 4	20. 6	26. 8	33. 0	38. 5	44. 9	51. 3	7. 5	14. 4	20. 6	26. 8	33. 0	38. 5	44. 9	51. 3

For SI: 1 ft = 304.8 mm.

- Interpolation shall be permitted; extrapolation shall be prohibited.
- For Exposure Category C, multiply the required length of bracing by a factor of 1.20 for a one-story building, 1.30 for a two-story building, and 1.40 for a three-story building.
- For wall height adjustments multiply the required length of bracing by the following factors: 0.90 for 8 feet (2438 mm), 0.95 for 9 feet (2743 mm), 1.0 for 10 feet (3048 mm), 1.05 for 11 feet (3353 mm), and 1.10 for 12 feet (3658 mm).
- Where braced wall panels supporting stories above have been sheathed in wood structural panels with edge fasteners spaced at 4 inches (102 mm) on center, multiply the required length of bracing by 0.83.
- A floor level, habitable or otherwise, contained wholly within the roof rafters or trusses shall not be considered a floor level for purposes of determining the required length of bracing.
- A rectangle side with differing number of floor levels above shall use the greatest number when determining the required length of bracing.

R602.12.4.1 Braced wall panel assignment to rectangle sides. Braced wall panels shall be assigned to the applicable rectangle side and contribute to its required length of bracing. Panels shall be assigned as specified in Items 1, 2, and 3 and as shown in Figure R602.12.4.1.

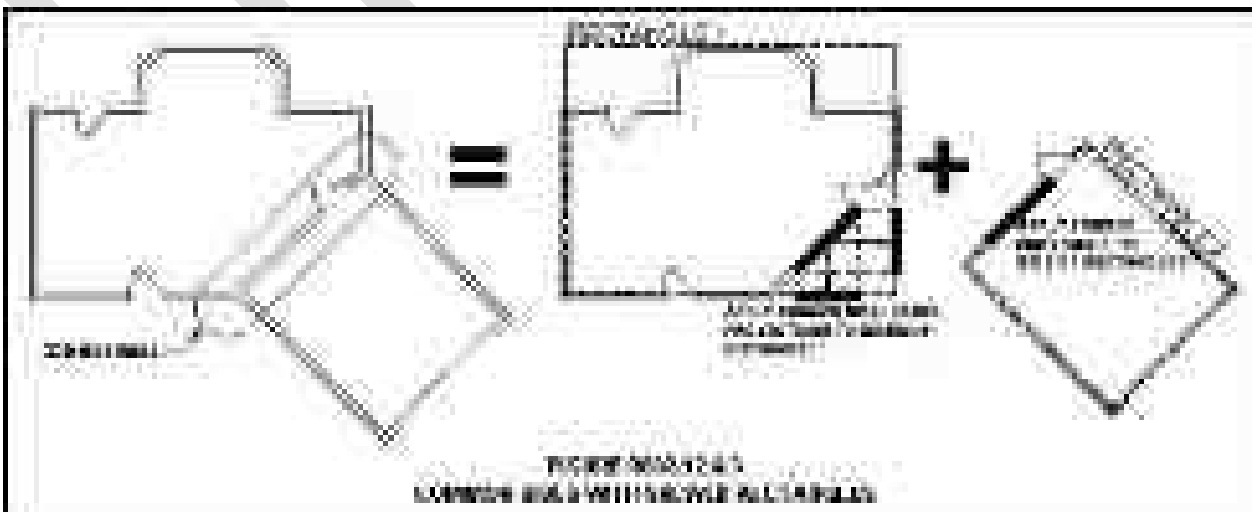
- Exterior braced wall panels shall be assigned to the parallel rectangle side on which they are located or in which they face.
- Interior braced wall panels shall be assigned to the parallel rectangle side on which they are located or in which they face up to four feet (1220 mm) away. Interior braced wall panels more than four feet (1220 mm) away from a parallel rectangle side shall not contribute.
- The projections of angled braced wall panels shall be assigned to the adjacent rectangle sides.



R602.12.4.2 Contributing length. The cumulative contributing length of braced wall panels assigned to a rectangle side shall be greater than or equal to the required length of bracing as determined in Section R602.12.4. The contributing length of a braced wall panel shall be as specified in Items 1, 2, and 3. When applying contributing length to angled braced wall panels, apply the requirements in Items 1, 2, and 3 to each projection:

1. Exterior braced wall panels shall contribute their actual length.
2. Interior braced wall panels shall contribute one-half of their actual length.
3. The contributing length of Methods ABW, PFH, PFG, and CS-PF shall be in accordance with Table R602.10.5.

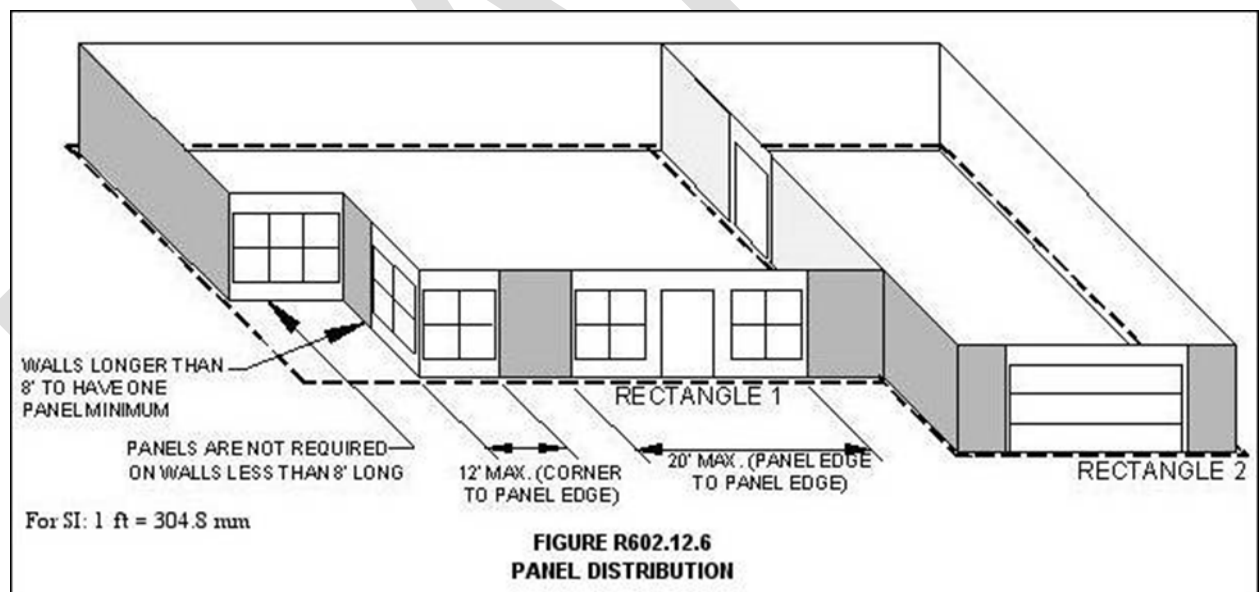
R602.12.4.3 Common sides with skewed rectangles. Braced wall panels located on a common wall where skewed rectangles intersect, as shown in Figure R602.12.4.3, shall be permitted to be assigned to the parallel rectangle side, and their projections shall be permitted to be assigned to the adjacent skewed rectangle sides.



R602.12.5 Cripple walls and framed walls of walk-out basements. For rectangle sides with cripple walls having a maximum height of 48 inches (1220 mm), the required length of bracing shall be as determined in Section R602.12.4. For rectangle sides with cripple walls having a height greater than 48 inches (1220 mm) at any location or framed walls of a walk-out basement, the required length of bracing shall be determined using Table R602.12.4. Braced wall panels within cripple walls and walls of walk-out basements shall comply with Item 4 of Section R602.12.2.

R602.12.6 Distribution of braced wall panels. Braced wall panels shall be distributed in accordance with the following requirements as shown in Figure R602.12.6.

1. The edge of a braced wall panel shall be no more than 12 feet (3658 mm) from any building corner or rectangle corner.
2. The distance between adjacent edges of braced wall panels shall be no more than 20 feet (6096 mm).
3. Segments of exterior walls greater than eight feet (2438 mm) in length shall have a minimum of one braced wall panel.
4. Segments of exterior wall eight feet (2438 mm) or less in length shall be permitted to have no braced wall panels.



R602.12.6.1 Panels adjacent to balloon framed walls. Braced wall panels shall be placed on each side of each story adjacent to balloon framed walls designed in accordance with Section R602.3 with a maximum height of two stories.

R602.12.7 Braced wall panel connection. Braced wall panels shall be connected to other structural elements in accordance with Section R602.10.8.

R602.12.8 Braced wall panel support. Braced wall panels shall be supported in accordance with Section R602.10.9.

72. Change Section R802.10.2 by replacing the reference to “Section R106.1” with reference to “Section 109”.

~~66- 73.~~ Delete Section R905.2.8.5.

~~67- 74.~~ Change Section R1001.8 to read:

R1001.8 Smoke chamber. Smoke chamber walls shall be constructed of solid masonry units, hollow masonry units grouted solid, stone, or concrete. The total minimum thickness of front, back, and side walls shall be eight inches (203 mm) of solid masonry. When the inside surface of the smoke chamber is formed by corbelled masonry, the inside surface shall be parged smooth. When a lining of firebrick at least two inches (51 mm) thick or a lining of vitrified clay at least 5/8 inch (16 mm) thick is provided, the total minimum thickness of front, back, and side walls shall be six inches (152 mm) of solid masonry, including the lining. Firebrick shall conform to ASTM C 1261 and shall be laid with medium duty refractory mortar conforming to ASTM C 199. Vitrified clay linings shall conform to ASTM C 315.

75. Delete Sections N1101.1 through N1101.5.2.

~~68. Change the wood frame wall R-value categories for Climate Zones 3A, 4A, and 5A in Table N1102.1.3 (R402.1.3) to read:~~

	Wood Frame Wall R-Value
	15 or 13 + 1 ^h

~~69- 76.~~ Change the frame wood-framed wall U-factor categories for Climate Zones 3A, 4A, and 5A in Table N1102.1.2 (R402.1.2) to read:

	Frame Wall U-Factor
	0.079

Table N1102.1.2(R402.1.2) Maximum Assembly U-Factors ^a and Fenestration Requirements			
Climate Zone	<u>3</u>	<u>4 Except Marine</u>	<u>5 and Marine 4</u>
Wood-Framed Wall U-Factor	<u>0.079</u>	<u>0.079</u>	<u>0.079</u>

77. Change the wood-framed wall R-value categories for Climate Zones 3A, 4A, and 5A in Table N1102.1.3 (R402.1.3) to read:

Table N1102.1.3(R402.1.3) Insulation Minimum R-Values and Fenestration Requirements by Component ^a			
Climate Zone	3	4 Except Marine	5 and Marine 4
Wood-Framed Wall R-Value ^e	15 or 13+1	15 or 13+1	15 or 13+1

70- 78. Change Section N1102.2.4 (R402.2.4) N1102.2.5 (R402.2.5) to read:

N1102.2.4 (R402.2.4) N1102.2.5 (R402.2.5) Access hatches and doors. Access doors from conditioned spaces to unconditioned spaces (e.g., attics and crawl spaces) shall be weatherstripped and insulated in accordance with the following values:

1. Hinged vertical doors shall have a minimum overall R-5 insulation value;
2. Hatches and scuttle hole covers shall be insulated to a level equivalent to the insulation on the surrounding surfaces; and
3. Pull down stairs shall have a minimum of 75% of the panel area having R-5 rigid insulation.

Access shall be provided to all equipment that prevents damaging or compressing the insulation. A wood framed or equivalent baffle or retainer is required to be provided when loose fill insulation is installed, the purpose of which is to prevent the loose fill insulation from spilling into the living space when the attic access is opened and to provide a permanent means of maintaining the installed R-value of the loose fill insulation.

71. Change the title of the "Insulation Installation Criteria" category of Table N1102.4.1.1 (R402.4.1.1); change the "Shower/tub on exterior wall" category of Table N1102.4.1.1 (R402.4.1.1), and add footnotes "c" and "d" to Table N1102.4.1.1 (R402.4.1.1) to read:

Component	Air Barrier Criteria	Insulation Installation Criteria ^d
Shower/tub on exterior wall ^e	The air barrier installed at exterior walls adjacent to showers and tubs shall be installed on the interior side and separate the exterior walls from the showers and tubs.	Exterior walls adjacent to showers and tubs shall be insulated.

~~c. Air barriers used behind showers and tubs on exterior walls shall be of a permeable material that does not cause the entrapment of moisture in the stud cavity.~~

~~d. Structural integrity of headers shall be in accordance with the applicable building code.~~

~~72- 79.~~ Change Section ~~N1102.4.1.2 (R402.4.1.2)~~ N1102.5.1.2 (R402.5.1.2) to read (exception and During testing: items 1 through 6 remains): remain):

~~N1102.4.1.2 (R402.4.1.2)~~ N1102.5.1.2 (R402.5.1.2) Testing. The building or dwelling unit shall be tested and verified as having an for air leakage rate not exceeding five air changes per hour in Climate Zone 4. leakage. Testing shall be conducted in accordance with RESNET/ICC 380, ASTM E 779, ~~or ASTM E 1827~~ ASTM E1827 or ASTM E3158 and reported at a pressure differential of 0.2 inches w.g. (50 Pa). A written report of the results of the test shall be signed by the party conducting the test and provided to the building official. Testing shall be conducted by a Virginia licensed general contractor, a Virginia licensed HVAC contractor, a Virginia licensed home inspector, a Virginia registered design professional, a certified BPI Envelope Professional, a certified Home Energy Rating System (HERS) rater, or a certified duct and envelope tightness rater. The party conducting the test shall have been trained on the equipment used to perform the test. Testing shall be performed at any time after creation of all penetrations of the building thermal envelope. envelope have been sealed.

Note: Should additional sealing be required as a result of the test, consideration may be given to the issuance of temporary certificate of occupancy in accordance with Section 116.1.1.

During testing:

- ~~1. Exterior windows and doors and fireplace and stove doors shall be closed, but not sealed beyond the intended weatherstripping or other infiltration control measures;~~
- ~~2. Dampers, including exhaust, intake, makeup air, backdraft, and flue dampers, shall be closed but not sealed beyond intended infiltration control measures;~~
- ~~3. Interior doors, if installed at the time of the test, shall be open;~~
- ~~4. Exterior doors for continuous ventilation systems and heat recovery ventilators shall be closed and sealed;~~
- ~~5. Heating and cooling systems, if installed at the time of the test, shall be turned off; and~~
- ~~6. Supply and return registers, if installed at the time of the test, shall be fully open.~~

~~73- 80.~~ Change the maximum allowed air changes per hour to 5.0 for Climate Zones 3, 4, and 5, in Section ~~N1102.4.1.3 (R402.4.1.3)~~ to read: N1102.5.1.3 (R402.5.1.3).

~~N1102.4.1.3 (R402.4.1.3) Leakage rate. When complying with Section N1101.2.1 (R401.2.1), the building or dwelling unit shall have an air leakage rate not exceeding 5.0 air changes per hour in Climate Zones 3, 4, and 5 when tested in accordance with Section N1102.4.1.2 (R402.4.1.2).~~

~~74.~~ 81. Add Change Section N1103.1.2 (R403.1.2) and add Section N1103.1.3 (R403.1.3) to read:

N1103.1.2 (R403.1.2) Heat pump supplementary heat. Heat pumps having supplementary electric-resistance, fuel gas or liquid fuel heating systems shall have controls that are configured so that, except during defrost or emergency heating modes, supplemental heating does not energize unless the outdoor temperature is below 40°F (4°C).

~~R403.1.3~~ N1103.1.3 (R403.1.3) Heat pump as primary space heat source. Electric resistance heat shall not be used as the primary heat source for electric space heating if a ducted or ductless heat pump can be installed. Electric resistance space heating may be used for defrost, supplemental, or emergency heat. A heat pump shall be designed so that, except during defrost or emergency heating modes, supplemental heating does not energize unless the outdoor temperature is below 40°F (4°C).

82. Change Section (N1103.3.2) R403.3.2 to read:

(N1103.3.2) R403.3.2 Building cavities. Building framing cavities used as ducts or plenums shall comply with Section M1601.1.1 of the VRC.

~~75.~~ 83. Change the last Add the following paragraph to the end of Section N1103.3.5 (R403.3.5) N1103.3.7 (R403.3.7) after the exceptions to read:

~~A written report of the results of the test shall be signed by the party conducting the test and provided to the code official.~~ The licensed mechanical contractor installing the mechanical system shall be permitted to perform the duct testing. The contractor shall have been trained on the equipment used to perform the test.

~~76.~~ Change Section N1103.3.7 (R403.3.7) to read:

~~N1103.3.7 (R403.3.7) Building cavities. Building framing cavities used as ducts or plenums shall comply with VRC Section M1601.1.1.~~

~~77.~~ 84. Change Delete Section N1103.7.1 (R403.7.1) and change Section N1103.7 (R403.7) to read:

N1103.7 (R403.7) Equipment and appliance sizing. Heating and cooling equipment and appliances shall be sized in accordance with ACCA Manual S or other approved sizing methodologies based on building loads calculated in accordance with ACCA Manual J or other approved heating and cooling calculation methodologies.

Exception: Heating and cooling equipment and appliance sizing shall not be limited to the capacities determined in accordance with Manual S or other approved sizing methodologies where any of the following conditions apply:

1. The specified equipment or appliance utilizes multi-stage technology or variable refrigerant flow technology and the loads calculated in accordance with the approved

heating and cooling methodology fall within the range of the manufacturer's published capacities for that equipment or appliance.

2. The specified equipment or appliance manufacturer's published capacities cannot satisfy both the total and sensible heat gains calculated in accordance with the approved heating and cooling methodology and the next larger standard size unit is specified.

3. The specified equipment or appliance is the lowest capacity unit available from the specified manufacturer.

~~78. Change Section N1106.3.2 (R406.3.2) to read:~~

~~Section N1106.3.2 (R406.3.2) Onsite renewables are included. When onsite renewable energy is included for compliance using the Energy Rating Index (ERI) analysis per Section N1106.4 (R406.4), the building thermal envelope shall be greater than or equal to levels of energy efficiency and solar heat gain coefficient in Table N1102.1.2 (R402.1.2), with a ceiling U factor of 0.026 and a frame wall U factor of 0.060, or Table N1102.1.3 (R402.1.3), with a ceiling R value of 49 and a wood frame wall R value of 20 or 13+5.~~

85. Change Section N1106.6 (R406.6) by replacing the reference to "Section R109.2" with reference to "Section 113.7".

~~79. 86. Change Section N1109.1 (R501.1) and delete Delete Sections N1109.1.1 (R501.1.1) through N1109.6 (R501.6). N1109.6 (R501.6) and change Section N1109.1 (R501.1) to read:~~

~~N1109.1 (R501.1) Scope. The provisions of the Virginia Existing Building Code shall control the alteration, repair, addition, and change of occupancy of existing buildings and structures.~~

~~80. 87. Change Section N1110.1 (R502.1) and delete Delete Sections N1110.2 (R502.2) through N1110.3.4 (R502.3.4). N1110.3.4 (R502.3.4) and change Section N1110.1 (R502.1) to read:~~

~~N1110.1 (R502.1) General. Additions to an existing building, building system, or portion thereof shall conform to the provisions of Section 805 of the VEBC.~~

~~81. 88. Change Section N1111.1 (R503.1) and delete Delete Sections N1111.1.1 (R503.1.1) through N1111.1.4 (R503.1.4). N1111.1.4 (R503.1.4) and change Section N1111.1 (R503.1) to read:~~

~~N1111.1 (R503.1) General. Alterations to any building or structure shall comply with the requirements of Chapter 6 of the VEBC.~~

~~82. 89. Change Section N1112.1 (R504.1) and delete Delete Section N1112.2 (R504.2). N1112.2 (R504.2) and change Section N1112.1 (R504.1) to read:~~

~~N1112.1 (R504.1) General. Buildings and structures, and parts thereof, shall be repaired in compliance with Section 507 of the VEBC.~~

90. Change Section M1302.1 by replacing the reference to "Section R104.2.2" with reference to

"Section 112.2".

~~83.~~ 91. Change Section M1401.3 to read:

M1401.3 Equipment and appliance sizing. Heating and cooling equipment and appliances shall be sized in accordance with ACCA Manual S or other approved sizing methodologies based on building loads calculated in accordance with ACCA Manual J or other approved heating and cooling calculation methodologies.

Exception: Heating and cooling equipment and appliance sizing shall not be limited to the capacities determined in accordance with Manual S or other approved sizing methodologies where any of the following conditions apply:

1. The specified equipment or appliance utilizes multi-stage technology or variable refrigerant flow technology and the loads calculated in accordance with the approved heating and cooling methodology fall within the range of the manufacturer's published capacities for that equipment or appliance.
2. The specified equipment or appliance manufacturer's published capacities cannot satisfy both the total and sensible heat gains calculated in accordance with the approved heating and cooling methodology, and the next larger standard size unit is specified.
3. The specified equipment or appliance is the lowest capacity unit available from the specified manufacturer.

~~84.~~ Change Section M1404.1 to read:

~~M1404.1 Compliance. Refrigeration cooling equipment shall comply with UL 474, UL484, UL1995, or UL/CSA 60335-2-40.~~

~~85.~~ Add Sections M1411.1.1 through M1411.1.6 to read:

~~M1411.1.1 Refrigeration system listing. Refrigeration systems using Group A2L refrigerants shall be listed and labeled to UL 60335-2-40/CAN/CSA C22.2 No. 60335-2-40. Refrigeration systems using Group A1 refrigerants shall be listed to UL 60335-2-40/CAN/CSA C22.2 No. 6-335-2-40 or UL 1995/CSA C22.2 No. 236. The equipment shall be installed in accordance with the listing.~~

~~M1411.1.2 Refrigeration system installation. Refrigeration systems shall be installed in accordance with the manufacturer's installation instructions. After installation, the manufacturer's installation instructions, owner's manuals, service manuals, and any other product literature provided with the equipment shall be attached to the indoor unit or left with the homeowner.~~

~~M1411.1.3 Field installed accessories. All field installed accessories shall be installed in accordance with the accessory and equipment manufacturer's installation instructions. Accessories installed in the ductwork of Group A2L refrigeration systems shall not contain electric heating elements, open flames, or devices switching electrical loads greater than 2.5 kVA.~~

~~M1411.1.4 Signs and identification. Each refrigeration system using Group A2L refrigerant shall have the following information legibly and permanently indicated on a markable label provided by the equipment manufacturer.~~

- ~~1. Contact information of the responsible company that installed the refrigeration system, and~~
- ~~2. The system refrigerant charge and the refrigerant number.~~

~~M1411.1.5 Refrigerant charge. All refrigeration systems shall have refrigerant charge in compliance with the equipment manufacturer's installation instructions and the requirements of the listing. Group A2L refrigerant charge for an individual refrigeration system shall not exceed 34.5 lbs. (15.7 kg).~~

~~M1411.1.6 Group A2L refrigerant piping testing. The piping system containing Group A2L refrigerant shall be tested in accordance with the manufacturer's installation instructions and the requirements of the listing.~~

~~86.~~ 92. Add Section M1501.2 to read:

M1501.2 Transfer air. Air transferred from occupiable spaces other than kitchens, baths, and toilet rooms shall not be prohibited from serving as makeup air for exhaust systems. Transfer openings between spaces shall be of the same cross-sectional area as the free area of the makeup air openings. Where louvers and grilles are installed, the required size of openings shall be based on the net free area of each opening. Where the design and free area of louvers and grilles are not known, it shall be assumed that wood louvers will have 25% free area and metal louvers and grilles will have 75% free area.

~~87.~~ 93. Change Section M1502.4.2 to read:

M1502.4.2 Duct installation. Exhaust ducts shall be supported at four-foot (1219 mm) intervals and shall be secured in place. The insert end of the duct shall extend into the adjoining duct or fitting in the direction of airflow. Ducts shall not be joined with screws or similar fasteners that protrude into the inside of the duct. Where dryer exhaust ducts are enclosed in wall or ceiling cavities, such cavities shall allow the installation of the duct without deformation.

~~88.~~ 94. Change Section M1503.6 to read:

M1503.6 Makeup air required. Exhaust hood systems capable of exhausting more than 400 cubic feet per minute (0.19 m³/s) shall be provided with makeup air at a rate approximately equal to the exhaust air rate in excess of 400 cubic feet per minute (0.19 m³/s). Such makeup air systems shall be equipped with a means of closure and shall be automatically controlled to start and operate simultaneously with the exhaust system.

Exception: Intentional openings for makeup air are not required for kitchen exhaust systems capable of exhausting not greater than 600 cubic feet per minute (0.28 m³/s) provided that one of the following conditions is met:

1. Where the floor area within the air barrier of a dwelling unit is at least 1,500 square feet (139.35 m²), and where natural draft or mechanical draft space-heating or water-heating appliances are not located within the air barrier.

2. Where the floor area within the air barrier of a dwelling unit is at least 3,000 square feet (278.71 m²), and where natural draft space-heating or water-heating appliances are not located within the air barrier.

~~89.~~ 95. Add an exception to Item ~~7~~ 10 in Section M1602.2 to read:

Exception: The return air within a two-family dwelling constructed without fire separations in accordance with Exception 3 of Section R302.3 shall be permitted to discharge into either dwelling unit.

~~90.~~ 96. Add Section M1801.1.1 to read:

M1801.1.1 Equipment changes. Upon the replacement or new installation of any fuel-burning appliances or equipment in existing buildings, an inspection shall be conducted to ensure that the connected vent or chimney systems comply with the following:

1. Vent or chimney systems are sized in accordance with this code.
2. Vent or chimney systems are clean, free of any obstruction or blockages, defects, or deterioration and are in operable condition.

Where not inspected by the local building department, persons performing such changes or installations shall certify to the building official that the requirements of Items 1 and 2 of this section are met.

97. Change Section G2404.3 by replacing references to "Section R104.2.2" with references to "Section 112.2".

98. Change item 6 to Section G2421.2 to read:

6.Means shall be provided downstream of the MP regulator for the connection of a pressure measuring instrument and shall be positioned to allow connection of a pressure measuring instrument. Such means shall be permitted to be a dedicated test port on a regulator, gas control, or manifold, or a plugged tee fitting or plugged manifold port.

~~91.~~ 99. Add Section G2425.1.1 to read:

G2425.1.1 Equipment changes. Upon the replacement or new installation of any fuel-burning appliances or equipment in existing buildings, an inspection shall be conducted to ensure that the connected vent or chimney systems comply with the following:

1. Vent or chimney systems are sized in accordance with this code.
2. Vent or chimney systems are clean, free of any obstruction or blockages, defects, or deterioration and are in operable condition.

Where not inspected by the local building department, persons performing such changes or installations shall certify to the building official that the requirements of Items 1 and 2 of this section are met.

~~92.~~ 100. Change Section G2439.7.2 to read:

G2439.7.2 Duct installation. Exhaust ducts shall be supported at four-foot (1219 mm) intervals and secured in place. The insert end of the duct shall extend into the adjoining duct or fitting in the direction of airflow. Ducts shall not be joined with screws or similar fasteners that protrude into the inside of the duct. Where dryer exhaust ducts are enclosed in wall or ceiling cavities, such cavities shall allow the installation of the duct without deformation.

~~93.~~ 101. Change Section P2601.2 to read:

P2601.2 Connections. Plumbing fixtures, drains, and appliances used to receive or discharge liquid wastes or sewage shall be directly connected to the sanitary drainage system of the building or premises, in accordance with the requirements of this code. This section shall not be construed to prevent indirect waste systems.

Exception: Bathtubs, showers, lavatories, clothes washers, and laundry trays shall not be required to discharge to the sanitary drainage system where such fixtures discharge to an approved nonpotable gray water system in accordance with the applicable provisions of Sections P2910, P2911, and P2912.

~~94.~~ 102. Change Section P2602.1 to read:

P2602.1 General. The water and drainage system of any building or premises where plumbing fixtures are installed shall be connected to a public or private water supply and a public or private sewer system. As provided for in Section 103.5 of Part I of the Virginia Uniform Statewide Building Code (13VAC5-63) for functional design, water supply sources and sewage disposal systems are regulated and approved by the Virginia Department of Health and the Virginia Department of Environmental Quality.

Note: See also the Memorandums of Agreement in the "Related Laws Package," which is available from the Virginia Department of Housing and Community Development.

~~95.~~ 103. Add Section P2602.3 to read:

P2602.3 Tracer wire. Nonmetallic water service piping that connects to public systems shall be locatable. An insulated copper tracer wire, 18 AWG minimum in size and suitable for direct burial or an equivalent product shall be utilized. The wire shall be installed in the same trench as the water service piping and within 12 inches (305 mm) of the pipe and shall be installed to within five feet (1524 mm) of the building wall to the point where the building water service pipe intersects with the public water supply. At a minimum, one end of the wire shall terminate above grade to provide access to the wire in a location that is resistant to physical damage, such as with a meter vault or at the building wall.

96- 104. Change the last sentence of Section P2801.6 P2801.5 (first sentence and items 1 through 3 remain) to read:

~~P2801.6 Required pan. Where a storage tank-type water heater or a hot water storage tank is installed in a location where water leakage from the tank will cause damage, the tank shall be installed in a pan constructed of one of the following:~~

- ~~1. Galvanized steel or aluminum of not less than 0.0236 inch (0.6010 mm) in thickness.~~
- ~~2. Plastic not less than 0.036 inch (0.9 mm) in thickness.~~
- ~~3. Other approved materials.~~

A plastic pan shall not be installed beneath a gas-fired water heater.

97- 105. Add Section P2901.1.1 to read:

P2901.1.1 Nonpotable fixtures and outlets. Nonpotable water shall be permitted to serve nonpotable type fixtures and outlets in accordance with the applicable provisions of Sections P2910, P2911, and P2912.

98- 106. Change Section P2902.6 of the IRC to read:

P2902.6 Location of backflow preventers. Access for inspection, testing, service, repair, and replacement shall be provided to backflow prevention assemblies. Backflow prevention assemblies shall be installed between 12 inches (305 mm) and 60 inches (1525 mm) from grade, floor level or service platform and as specified by the manufacturer's instructions. Where the manufacturer's listed installation height conflicts with this requirement, the manufacturer's listed heights shall apply. Access shall be provided to backflow prevention devices ~~and~~ as specified by the manufacturer's instructions.

99- 107. Change the second sentence of Section P2903.5 (remainder of section remains) to read:

~~P2903.5 Water hammer. The flow velocity of the water distribution system shall be controlled to reduce the possibility of water hammer. A water-hammer arrestor shall be installed where quick-closing valves are utilized, unless otherwise approved. Water hammer arrestors shall be installed in accordance with manufacturer's specifications. Water hammer arrestors shall conform to ASSE 1010.~~

100- 108. Change the first sentence of Section P2904.1 and item 1 of Section P2904.1 (remainder of Section, including items 2 through 4, remains) to read:

~~P2904.1 General. The design and installation of residential fire automatic sprinkler systems shall be in accordance with NFPA 13D, NFPA 13, NFPA 13R, or Section P2904, which shall be considered to be equivalent to NFPA 13D. Partial residential sprinkler systems shall be permitted to be installed only in buildings not required to be equipped with a residential sprinkler system. Section P2904 shall apply to stand-alone and multipurpose wet-pipe sprinkler systems that do not include the use of antifreeze. A multipurpose fire sprinkler system shall provide domestic water to both fire sprinklers and plumbing fixtures. A stand-alone sprinkler system shall be separate and independent from the~~

~~water distribution system. A backflow preventer shall not be required to separate a sprinkler system from the water distribution system, provided that the sprinkler system complies with all of the following:~~

- ~~1. The system complies with NFPA 13D, NFPA 13, NFPA 13R, or Section P2904.~~
- ~~2. The piping material complies with Section P2906.~~
- ~~3. The system does not contain antifreeze.~~
- ~~4. The system does not have a fire department connection.~~

~~101.~~ 109. Change Section P2906.2.1 to read:

P2906.2.1 Lead content of drinking water pipe and fittings. Pipe, pipe fittings, joints, valves, faucets, and fixture fittings utilized to supply water for drinking or cooking purposes shall comply with NSF 372.

~~102.~~ Change Section P2906.9.1.2 to read:

~~P2906.9.1.2 Chlorinated polyvinyl chloride (CPVC) plastic pipe. Joint surfaces shall be clean and free from moisture. Joints shall be made in accordance with the pipe, fitting or solvent cement manufacturer's installation instructions. Where such instructions require a primer to be used, an approved primer shall be applied, and a solvent cement, orange in color and conforming to ASTM F493, shall be applied to joint surfaces. Where such instructions allow for a one-step solvent cement, yellow, red or green in color and conforming to ASTM F493, to be used, the joint surfaces shall not require application of a primer before the solvent cement is applied. The joint shall be made while the cement is wet and in accordance with ASTM D2846 or ASTM F493. Solvent cement joints shall be permitted above ground or below ground.~~

~~103.~~ 110. Change Sections P2910.1 through P2910.14, including subsections, to read:

P2910.1 Scope. The provisions of this section shall govern the materials, design, construction, and installation of nonpotable water systems subject to this code.

P2910.1.1 Design of nonpotable water systems. All portions of nonpotable water systems subject to this code shall be constructed using the same standards and requirements for the potable water systems or drainage systems as provided for in this code unless otherwise specified in this section or Section P2911 or P2912, as applicable.

P2910.2 Makeup water. Makeup water shall be provided for all nonpotable water supply systems. The makeup water system shall be designed and installed to provide supply of water in the amounts and at the pressures specified in this code. The makeup water supply shall be potable and be protected against backflow in accordance with the applicable requirements of Section P2902.

P2910.2.1 Makeup water sources. Nonpotable water shall be permitted to serve as makeup water for gray water and rainwater systems.

P2910.2.2 Makeup water supply valve. A full-open valve shall be provided on the makeup water supply line.

P2910.2.3 Control valve alarm. Makeup water systems shall be fitted with a warning mechanism that alerts the user to a failure of the inlet control valve to close correctly. The alarm shall activate before the water within the storage tank begins to discharge into the overflow system.

P2910.3 Sizing. Nonpotable water distribution systems shall be designed and sized for peak demand in accordance with approved engineering practice methods that comply with the applicable provisions of this chapter.

P2910.4 Signage required. All nonpotable water outlets, other than water closets and urinals, such as hose connections, open ended pipes, and faucets shall be identified at the point of use for each outlet with signage that reads as follows: "Nonpotable water is utilized for (insert application name). Caution: nonpotable water. DO NOT DRINK." The words shall be legibly and indelibly printed on a tag or sign constructed of corrosion-resistant waterproof material or shall be indelibly printed on the fixture. The letters of the words shall be not less than 0.5 inches (12.7 mm) in height and in colors in contrast to the background on which they are applied. The pictograph shown in Figure P2910.4 shall appear on the signage required by this section.



FIGURE P2910.4 PICTOGRAPH—DO NOT DRINK

P2910.5 Potable water supply system connections. Where a potable water supply system is connected to a nonpotable water system, the potable water supply shall be protected against backflow in accordance with the applicable provisions of Section P2902.

P2910.6 Nonpotable water system connections. Where a nonpotable water system is connected and supplies water to another nonpotable water system, the nonpotable water system that supplies water shall be protected against backflow in accordance with the applicable provisions of Section P2902.

P2910.7 Approved components and materials. Piping, plumbing components, and materials used in the nonpotable water drainage and distribution systems shall be approved for the intended application and compatible with the water and any disinfection or treatment systems used.

P2910.8 Insect and vermin control. Nonpotable water systems shall be protected to prevent the entrance of insects and vermin into storage and piping systems. Screen materials shall be compatible with system material and shall not promote corrosion of system components.

P2910.9 Freeze protection. Nonpotable water systems shall be protected from freezing in accordance with the applicable provisions of Chapter 26.

P2910.10 Nonpotable water storage tanks. Nonpotable water storage tanks shall be approved for the intended application and comply with Sections P2910.10.1 through P2910.10.12.

P2910.10.1 Sizing. The holding capacity of storage tanks shall be sized for the intended use.

P2910.10.2 Inlets. Storage tank inlets shall be designed to introduce water into the tank and avoid agitating the contents of the storage tank. The water supply to storage tanks shall be controlled by fill valves or other automatic supply valves designed to stop the flow of incoming water before the tank contents reach the overflow pipes.

P2910.10.3 Outlets. Outlets shall be located at least four inches (102 mm) above the bottom of the storage tank and shall not skim water from the surface.

P2910.10.4 Materials and location. Storage tanks shall be constructed of material compatible with treatment systems used to treat water. Above grade storage vessels shall be constructed using opaque, UV-resistant materials, such as tinted plastic, lined metal, concrete, or wood or painted to prevent algae growth. Above grade storage tanks shall be protected from direct sunlight unless their design specifically incorporates the use of the sunlight heat transfer. Wooden storage tanks shall be provided with a flexible liner. Storage tanks and their manholes shall not be located directly under soil or waste piping or sources of contamination.

P2910.10.5 Foundation and supports. Storage tanks shall be supported on a firm base capable of withstanding the storage tank's weight when filled to capacity. Storage tanks shall be supported in accordance with the applicable provisions of the IBC.

P2910.10.5.1 Ballast. Where the soil can become saturated, an underground storage tank shall be ballasted or otherwise secured to prevent the effects of buoyancy. The combined weight of the tank and hold down ballast shall meet or exceed the buoyancy force of the tank. Where the installation requires a foundation, the foundation shall be flat and shall be designed to support the storage tank weight when full, consistent with the bearing capability of adjacent soil.

P2910.10.5.2 Structural support. Where installed below grade, storage tank installations shall be designed to withstand earth and surface structural loads without damage.

P2910.10.6 Overflow. The storage tank shall be equipped with an overflow pipe having a diameter not less than that shown in Table P2910.10.6. The overflow outlet shall discharge at a point not less

than six inches (152 mm) above the roof or roof drain, floor or floor drain, or over an open water-supplied fixture. The overflow outlet shall terminate through a check valve. Overflow pipes shall not be directed on walkways. The overflow drain shall not be equipped with a shutoff valve. A minimum of one cleanout shall be provided on each overflow pipe in accordance with the applicable provisions of Section P3005.2.

Table P2910.10.6 Sizes for Overflow Pipes for Water Supply Tanks	
Maximum Capacity of Water Supply Line to Tank (gpm)	Diameter of Overflow Pipe (inches)
0 - 50	2
50 - 150	2-1/2
150 - 200	3
200 - 400	4
400 - 700	5
700 - 1,000	6
Over 1,000	8
For SI: 1 inch = 25.4 mm, 1 gallon per minute = 3.785 L/m.	

P2910.10.7 Access. A minimum of one access opening shall be provided to allow inspection and cleaning of the tank interior. Access openings shall have an approved locking device or other approved method of securing access. Below grade storage tanks, located outside of the building, shall be provided with either a manhole not less than 24 inches (610 mm) square or a manhole with an inside diameter not less than 24 inches (610 mm). The design and installation of access openings shall prohibit surface water from entering the tank. Each manhole cover shall have an approved locking device or other approved method of securing access.

Exception: Storage tanks under 800 gallons (3028 L) in volume installed below grade shall not be required to be equipped with a manhole but shall have an access opening not less than eight inches (203 mm) in diameter to allow inspection and cleaning of the tank interior.

P2910.10.8 Venting. Storage tanks shall be vented. Vents shall not be connected to the sanitary drainage system. Vents shall be at least equal in size to the internal diameter of the drainage inlet pipe or pipes connected to the tank. Where installed at grade, vents shall be protected from contamination by means of a U-bend installed with the opening directed downward. Vent outlets shall extend a minimum of 12 inches (304.8 mm) above grade or as necessary to prevent surface water from entering the storage tank. Vent openings shall be protected against the entrance of

vermin and insects. Vents serving gray water tanks shall terminate in accordance with the applicable provisions of Sections P3103 and P2910.8.

P2910.10.9 Drain. Where drains are provided, they shall be located at the lowest point of the storage tank. The tank drain pipe shall discharge as required for overflow pipes and shall not be smaller in size than specified in Table P2910.10.6. A minimum of one cleanout shall be provided on each drain pipe in accordance with Section P3005.2.

P2910.10.10 Labeling and signage. Each nonpotable water storage tank shall be labeled with its rated capacity and the location of the upstream bypass valve. Underground and otherwise concealed storage tanks shall be labeled at all access points. The label shall read: "CAUTION: NONPOTABLE WATER - DO NOT DRINK." Where an opening is provided that could allow the entry of personnel, the opening shall be marked with the words: "DANGER - CONFINED SPACE." Markings shall be indelibly printed on a tag or sign constructed of corrosion-resistant waterproof material mounted on the tank or shall be indelibly printed on the tank. The letters of the words shall be not less than 0.5 inches (12.7 mm) in height and shall be of a color in contrast with the background on which they are applied.

P2910.10.11 Storage tank tests. Storage tanks shall be tested in accordance with the following:

1. Storage tanks shall be filled with water to the overflow line prior to and during inspection. All seams and joints shall be left exposed and the tank shall remain water tight without leakage for a period of 24 hours.
2. After 24 hours, supplemental water shall be introduced for a period of 15 minutes to verify proper drainage of the overflow system and verify that there are no leaks.
3. Following a successful test of the overflow system, the water level in the tank shall be reduced to a level that is at two inches (50.8 mm) below the makeup water offset point. The tank drain shall be observed for proper operation. The makeup water system shall be observed for proper operation, and successful automatic shutoff of the system at the refill threshold shall be verified. Water shall not be drained from the overflow at any time during the refill test.
4. Air tests shall be permitted in lieu of water testing as recommended by the tank manufacturer or the tank standard.

P2910.10.12 Structural strength. Storage tanks shall meet the applicable structural strength requirements of the IBC.

P2910.11 Trenching requirements for nonpotable water system piping. Underground nonpotable water system piping shall be horizontally separated from the building sewer and potable water piping by five feet (1524 mm) of undisturbed or compacted earth. Nonpotable water system piping shall not be located in, under, or above sewage systems cesspools, septic tanks, septic tank drainage fields, or seepage pits. Buried nonpotable water system piping shall comply with the requirements of this code for the piping material installed.

Exceptions:

1. The required separation distance shall not apply where the bottom of the nonpotable water pipe within five feet (1524 mm) of the sewer is equal to or greater than 12 inches (305 mm) above the top of the highest point of the sewer and the pipe materials conform to Table P3002.2.
2. The required separation distance shall not apply where the bottom of the potable water service pipe within five feet (1524 mm) of the nonpotable water pipe is a minimum of 12 inches (305 mm) above the top of the highest point of the nonpotable water pipe and the pipe materials comply with the requirements of Table P2906.5.
3. Nonpotable water pipe is permitted to be located in the same trench with building sewer piping, provided that such sewer piping is constructed of materials that comply with the requirements of Table P3002.1(2).
4. The required separation distance shall not apply where a nonpotable water pipe crosses a sewer pipe, provided that the pipe is sleeved to at least five feet (1524 mm) horizontally from the sewer pipe centerline on both sides of such crossing with pipe materials that comply with Table P3002.1(2).
5. The required separation distance shall not apply where a potable water service pipe crosses a nonpotable water pipe provided that the potable water service pipe is sleeved for a distance of at least five feet (1524 mm) horizontally from the centerline of the nonpotable pipe on both sides of such crossing with pipe materials that comply with Table P3002.1(2).

P2910.12 Outdoor outlet access. Sillcocks, hose bibs, wall hydrants, yard hydrants, and other outdoor outlets that are supplied by nonpotable water shall be located in a locked vault or shall be operable only by means of a removable key.

P2910.13 Drainage and vent piping and fittings. Nonpotable drainage and vent pipe and fittings shall comply with the applicable material standards and installation requirements in accordance with the provisions of Chapter 30.

P2910.13.1 Labeling and marking. Identification of nonpotable drainage and vent piping shall not be required.

P2910.14 Pumping and control system. Mechanical equipment, including pumps, valves, and filters, shall be accessible and removable in order to perform repair, maintenance, and cleaning. The minimum flow rate and flow pressure delivered by the pumping system shall be designed for the intended application in accordance with the applicable provisions of Section P2903.

~~104- 111.~~ Add Sections P2910.15 through P2910.18, including subsections, to read:

P2910.15 Water-pressure reducing valve or regulator. Where the water pressure supplied by the pumping system exceeds 80 psi (552 kPa) static, a pressure-reducing valve shall be installed to

reduce the pressure in the nonpotable water distribution system piping to 80 psi (552 kPa) static or less. Pressure-reducing valves shall be specified and installed in accordance with the applicable provisions of Section ~~P2903.3.1.~~ P2903.3.2.

P2910.16 Distribution pipe. Distribution piping utilized in nonpotable water systems shall comply with Sections P2910.16.1 through P2910.16.4.

P2910.16.1 Materials, joints, and connections. Distribution piping and fittings shall comply with the applicable material standards and installation requirements in accordance with applicable provisions of Chapter 29.

P2910.16.2 Design. Distribution piping shall be designed and sized in accordance with the applicable provisions of Chapter 29.

P2910.16.3 Labeling and marking. Distribution piping labeling and marking shall comply with Section P2901.2.

P2910.16.4 Backflow prevention. Backflow preventers shall be installed in accordance with the applicable provisions of Section P2902.

P2910.17 Tests and inspections. Tests and inspections shall be performed in accordance with Sections P2910.17.1 through P2910.17.5.

P2910.17.1 Drainage and vent pipe test. Drain, waste, and vent piping used for gray water and rainwater nonpotable water systems shall be tested in accordance with the applicable provisions of Section P2503.

P2910.17.2 Storage tank test. Storage tanks shall be tested in accordance with ~~the~~ Section P2910.10.11.

P2910.17.3 Water supply system test. Nonpotable distribution piping shall be tested in accordance with Section P2503.7.

P2910.17.4 Inspection and testing of backflow prevention assemblies. The testing of backflow preventers and backwater valves shall be conducted in accordance with Section P2503.8.

P2910.17.5 Inspection of vermin and insect protection. Inlets and vent terminations shall be visually inspected to verify that each termination is installed in accordance with Section P2910.10.8.

P2910.18 Operation and maintenance manuals. Operations and maintenance ~~materials~~ manuals for nonpotable water systems shall be provided as prescribed by the system component manufacturers and supplied to the owner to be kept in a readily accessible location.

~~105- 112.~~ 112. Change the title of Section P2911 to "Gray Water Nonpotable Water Systems."

~~106- 113.~~ 113. Change Sections P2911.1 through P2911.6, including subsections, to read:

P2911.1 Gray water nonpotable water systems. This code is applicable to the plumbing fixtures, piping or piping systems, storage tanks, drains, appurtenances, and appliances that are part of the

distribution system for gray water within buildings and to storage tanks and associated piping that are part of the distribution system for gray water outside of buildings. This code does not regulate equipment used for, or the methods of, processing, filtering, or treating gray water, which may be regulated by the Virginia Department of Health or the Virginia Department of Environmental Quality.

P2911.1.1 Separate systems. Gray water nonpotable water systems, unless approved otherwise under the permit from the Virginia Department of Health, shall be separate from the potable water system of a building with no cross connections between the two systems except as permitted by the Virginia Department of Health.

P2911.2 Water quality. Each application of gray water reuse shall meet the minimum water quality requirements set forth in Sections P2911.2.1 through P2911.2.4 unless otherwise superseded by other state agencies.

P2911.2.1 Disinfection. Where the intended use or reuse application for nonpotable water requires disinfection, other treatment, or both, it shall be disinfected as needed to ensure that the required water quality is delivered at the point of use or reuse.

P2911.2.2 Residual disinfectants. Where chlorine is used for disinfection, the nonpotable water shall contain not more than four parts per million (4 mg/L) of free chlorine, combined chlorine, or total chlorine. Where ozone is used for disinfection, the nonpotable water shall not exceed 0.1 parts per million (by volume) of ozone at the point of use.

P2911.2.3 Filtration. Water collected for reuse shall be filtered as required for the intended end use. Filters shall be accessible for inspection and maintenance. Filters shall utilize a pressure gauge or other approved method to indicate when a filter requires servicing or replacement. Shutoff valves installed immediately upstream and downstream of the filter shall be included to allow for isolation during maintenance.

P2911.2.4 Filtration required. Gray water utilized for water closet and urinal flushing applications shall be filtered by a 100 micron or finer filter.

P2911.3 Storage tanks. Storage tanks utilized in gray water nonpotable water systems shall comply with Section P2910.10.

P2911.4 Retention time limits. Untreated gray water shall be retained in storage tanks for a maximum of 24 hours.

P2911.5 Tank location. Storage tanks shall be located with a minimum horizontal distance between various elements as indicated in Table P2911.5.1.

Table P2911.5.1 Location of Nonpotable Gray Water Reuse Storage Tanks	
Element	Minimum Horizontal Distance from Storage Tank (feet)

Lot line adjoining private lots	5
Sewage systems	5
Septic tanks	5
Water wells	50
Streams and lakes	50
Water service	5
Public water main	10

P2911.6 Valves. Valves shall be supplied on gray water nonpotable water drainage systems in accordance with Sections P2911.6.1 and P2911.6.2.

P2911.6.1 Bypass valve. One three-way diverter valve certified to NSF 50 or other approved device shall be installed on collection piping upstream of each storage tank or drainfield, as applicable, to divert untreated gray water to the sanitary sewer to allow servicing and inspection of the system. Bypass valves shall be installed downstream of fixture traps and vent connections. Bypass valves shall be labeled to indicate the direction of flow, connection, and storage tank or drainfield connection. Bypass valves shall be provided with access for operation and maintenance. Two shutoff valves shall not be installed to serve as a bypass valve.

P2911.6.2 Backwater valve. Backwater valves shall be installed on each overflow and tank drain pipe to prevent unwanted water from draining back into the storage tank. If the overflow and drain piping arrangement is installed to physically not allow water to drain back into the tank, such as in the form of an air gap, backwater valves shall not be required. Backwater valves shall be constructed and installed in accordance with Section P3008.

~~107- 114.~~ Delete Sections P2911.7 through P2911.13, including subsections.

~~108- 115.~~ Change the title of Section P2912 to "Rainwater Nonpotable Water Systems."

~~109- 116.~~ Change Sections P2912.1 through P2912.10, including subsections, to read:

P2912.1 General. The provisions of this section shall govern the design, construction, installation, alteration, and repair of rainwater nonpotable water systems for the collection, storage, treatment, and distribution of rainwater for nonpotable applications. The provisions of CSA B805/ICC 805 shall be permitted as an alternative to the provisions contained in this section for the design, construction, installation, alteration, and repair of rainwater nonpotable water systems for the collection, storage, treatment, and distribution of rainwater for nonpotable applications. Roof runoff or stormwater runoff collection surfaces shall be limited to roofing materials, public pedestrian accessible roofs, and

subsurface collection identified in ~~CSA B805/ICC 805 Table 7.1.~~ Table 7.1 of CSA B805/ICC 805. Stormwater runoff shall not be collected from any other surfaces.

P2912.2 Water quality. Each application of rainwater reuse shall meet the minimum water quality requirements set forth in Sections P2912.2.1 through P2912.2.4 unless otherwise superseded by other state agencies.

P2912.2.1 Disinfection. Where the intended use or reuse application for nonpotable water requires disinfection or other treatment or both, it shall be disinfected as needed to ensure that the required water quality is delivered at the point of use or reuse.

P2912.2.2 Residual disinfectants. Where chlorine is used for disinfection, the nonpotable water shall contain not more than 4 parts per million (4 mg/L) of free chlorine, combined chlorine, or total chlorine. Where ozone is used for disinfection, the nonpotable water shall not exceed 0.1 parts per million (by volume) of ozone at the point of use.

P2912.2.3 Filtration. Water collected for reuse shall be filtered as required for the intended end use. Filters shall be accessible for inspection and maintenance. Filters shall utilize a pressure gauge or other approved method to indicate when a filter requires servicing or replacement. Shutoff valves installed immediately upstream and downstream of the filter shall be included to allow for isolation during maintenance.

P2912.2.4 Filtration required. Rainwater utilized for water closet and urinal flushing applications shall be filtered by a 100 micron or finer filter.

P2912.3 Collection surface. Rainwater shall be collected only from aboveground impervious roofing surfaces constructed from approved materials. Overflow or discharge piping from appliances, equipment, or both, including evaporative coolers, water heaters, and solar water heaters shall not discharge onto rainwater collection surfaces.

P2912.4 Collection surface diversion. At a minimum, the first 0.04 inches (1.016 mm) of each rain event of 25 gallons (94.6 L) per 1,000 square feet (92.9 m²) shall be diverted from the storage tank by automatic means and not require the operation of manually operated valves or devices. Diverted water shall not drain onto other collection surfaces that are discharging to the rainwater system or to the sanitary sewer. Such water shall be diverted from the storage tank and discharged in an approved location.

P2912.5 Pre-tank filtration. Downspouts, conductors, and leaders shall be connected to a pre-tank filtration device. The filtration device shall not permit materials larger than 0.015 inches (0.4 mm).

P2912.6 Roof gutters and downspouts. Gutters and downspouts shall be constructed of materials that are compatible with the collection surface and the rainwater quality for the desired end use. Joints shall be made watertight.

P2912.6.1 Slope. Roof gutters, leaders, and rainwater collection piping shall slope continuously toward collection inlets. Gutters and downspouts shall have a slope of not less than one unit in 96 units along their entire length and shall not permit the collection or pooling of water at any point.

P2912.6.2 Size. Gutters and downspouts shall be installed and sized in accordance with local rainfall rates.

P2912.6.3 Cleanouts. Cleanouts or other approved openings shall be provided to permit access to all filters, flushes, pipes, and downspouts.

P2912.7 Storage tanks. Storage tanks utilized in rainwater nonpotable water systems shall comply with Section P2910.10.

P2912.8 Location. Storage tanks shall be located with a minimum horizontal distance between various elements as indicated in Table P2912.8.1.

Table P2912.8.1 Location of Rainwater Storage Tanks	
Element	Minimum Horizontal Distance from Storage Tank (feet)
Lot line adjoining private lots	5
Sewage systems	5
Septic tanks	5

P2912.9 Valves. Valves shall be installed in collection and conveyance drainage piping of rainwater nonpotable water systems in accordance with Sections P2912.9.1 and P2912.9.2.

P2912.9.1 Influent diversion. A means shall be provided to divert storage tank influent to allow maintenance and repair of the storage tank system.

P2912.9.2 Backwater valve. Backwater valves shall be installed on each overflow and tank drain pipe to prevent unwanted water from draining back into the storage tank. If the overflow and drain piping arrangement is installed to physically not allow water to drain back into the tank, such as in the form of an air gap, backwater valves shall not be required. Backwater valves shall be constructed and installed in accordance with Section P3008.

P2912.10 Tests and inspections. Tests and inspections shall be performed in accordance with Sections P2912.10.1 and P2912.10.2.

P2912.10.1 Roof gutter inspection and test. Roof gutters shall be inspected to verify that the installation and slope is in accordance with Section P2912.6.1. Gutters shall be tested by pouring a

minimum of one gallon of water into the end of the gutter opposite the collection point. The gutter being tested shall not leak and shall not retain standing water.

P2912.10.2 Collection surface diversion test. A collection surface diversion test shall be performed by introducing water into the gutters or onto the collection surface area. Diversion of the first quantity of water in accordance with the requirements of Section P2912.4 shall be verified.

~~110- 117.~~ Delete Sections P2912.11 through P2912.16, including subsections.

~~111- 118.~~ Delete Section P2913 in its entirety.

~~112- 119.~~ Add Section P3002.2.2 to read:

P3002.2.2 Tracer wire. Nonmetallic sanitary sewer piping that discharges to public systems shall be locatable. An insulated copper tracer wire, 18 AWG minimum in size and suitable for direct burial or an equivalent product shall be utilized. The wire shall be installed in the same trench as the sewer within 12 inches (305 mm) of the pipe and shall be installed from within five feet of the building wall to the point where the building sewer intersects with the public system. At a minimum, one end of the wire shall terminate above grade in an accessible location that is resistant to physical damage, such as with a cleanout or at the building wall.

~~113- Add an exception to Section P3301.1 to read:~~

~~Exception: Rainwater nonpotable water systems shall be permitted in accordance with the applicable provisions of Sections P2910 and P2912.~~

~~114- 120.~~ Delete the exception for Section P3003.9.2.

121. Change Section P3009.4 by replacing the reference to "Section R109" with reference to "Section 113".

122. Add an exception to Section P3301.1 to read:

Exception: Rainwater nonpotable water systems shall be permitted in accordance with the applicable provisions of Sections P2910 and P2912.

~~115- 123.~~ Add Section E3601.9 to read:

E3601.9 Energizing service equipment. The building official shall give permission to energize the electrical service equipment of a one-family or two-family dwelling unit when all of the following requirements have been approved:

1. The service wiring and equipment, including the meter socket enclosure, shall be installed and the service wiring terminated.
2. The grounding electrode system shall be installed and terminated.
3. At least one receptacle outlet on a ground fault protected circuit shall be installed and the circuit wiring terminated.

4. Service equipment covers shall be installed.
5. The building roof covering shall be installed.
6. Temporary electrical service equipment shall be suitable for wet locations unless the interior is dry and protected from the weather.

116. 124. Change the first sentence of Section E3802.4 (remainder of Section remains) to read:

~~E3802.4 In unfinished basements.~~ Where Type SE or Type NM cable is run at angles with joists in unfinished basements, cable assemblies containing two or more conductors of sizes six AWG and larger and assemblies containing three or more conductors of sizes eight AWG and larger shall not require additional protection where attached directly to the bottom of the joists. ~~Smaller cables shall be run either through bored holes in joists or on running boards. Type NM or Type SE cable installed on the wall of an unfinished basement shall be permitted to be installed in a listed conduit or tubing or shall be protected in accordance with Table E3802.1. Conduit or tubing shall be provided with a suitable insulating bushing or adapter at the point where cable enters the raceway. The sheath of the Type NM or Type SE cable shall extend through the conduit or tubing and into the outlet or device box not less than 1/4 inch (6.4 mm). The cable shall be secured within 12 inches (305 mm) of the point where the cable enters the conduit or tubing. Metal conduit, tubing, and metal outlet boxes shall be connected to an equipment grounding conductor complying with Section E3908.13.~~

117. 125. Delete Change exception 3 to Section E3902.17. E3902.14 (remainder of section, including items 1 through 3 and exceptions 1 and 2, remains) to read: GFCI protection shall not be required for listed HVAC equipment.

118. 126. Add Exception 2 to Section ~~E3902.20~~ E3902.21 to read:

2. AFCI protection is not required where GFCI protection is required in accordance with Section E3902 and NEC 210.8(A)

119. 127. Add the following standards to the list of referenced standards in Chapter 44:

Standard Reference Number	Title	Referenced in Code Section Number
~~NFPA~~		
~~NFPA 13-19~~ <u>13-22</u>	Standard for Installation of Sprinkler Systems	
~~NFPA 13R-19~~	~~Standard for the Installation of Sprinkler Systems in Low Rise Residential Occupancies~~	
<u>UL 474-2015</u>	Standard for Safety Dehumidifiers	

UL 484-2019	Standard for Room Air Conditioners
~~UL60335-2-40-2019//CAN/CSA C22.2 No. 60335-2-40-19~~	~~Standard for Household and Similar Electrical Appliances, Safety Part 2-40: Particular Requirements for Electrical Heat Pumps, Air Conditioners and Dehumidifiers~~

119. Delete the following standards from the list of referenced standards in Chapter 44:

Standard Reference Number	Title
~~UL/CSA/ANCE 60335-2-40-2012~~	~~Safety of Household and Similar Electric Appliances, Part 2-40: Particular Requirements for Heat Pumps, Air Conditioners and Dehumidifiers~~
~~NMX-J-521/2-40-ANCE-2014/CAN/CSA-22.2 No. 60335-2-40-12/UL 60335-2-40~~	~~Safety of Household and Similar Electric Appliances, Part 2-40: Particular Requirements for Heat Pumps, Air Conditioners and Dehumidifiers~~

S. Add "Marinas" to the list of occupancies in Section 312.1 of the IBC.

T. Add Section 313 State regulated care facilities (SRCF) to the IBC to read:

313.1 General. Notwithstanding any other requirements of this code, this section applies to the use and occupancy classification of state regulated care facilities addressed in this section.

313.2 Assisted living facilities. Assisted living facilities licensed by the Virginia Department of Social Services shall be classified as one of the occupancies specified in Sections 313.2.1 through 313.2.6.

313.2.1 Group I-1 Condition 1. Facilities with more than 16 persons receiving care, in which all persons receiving care, without any assistance, are capable of responding to an emergency situation to complete building evacuation, shall be classified as Group I-1 Condition 1. Not more than five of the persons may require physical assistance from staff to respond to an emergency, provided all persons requiring assistance reside on a level of exit discharge and the path of egress to the exit does not include steps.

313.2.2 Group I-1 Condition 2. Facilities with more than 16 persons receiving care, in which there are persons who require assistance by not more than one staff member while responding

to an emergency situation to complete building evacuation, shall be classified as Group I-1 Condition 2. Not more than five of the persons may require physical assistance from more than one staff member to respond to an emergency situation.

313.2.3 Group I-2 Condition 1. Facilities with more than five persons receiving care who require assistance by more than one staff member when responding to an emergency situation to complete building evacuation, shall be classified as Group I-2 Condition 1.

313.2.4 Group R-4 Condition 1. Facilities with nine to 16 persons receiving care, where all persons receiving care, without any assistance, are capable of responding to an emergency situation to complete building evacuation shall be classified as R-4 Condition 1. Not more than five of the persons may require physical assistance from staff to respond to an emergency, provided all persons requiring assistance reside on a level of exit discharge and the path of egress to the exit does not include steps.

313.2.5 Group R-4 Condition 2. Buildings with nine to 16 persons receiving care, who may require assistance by not more than one staff member when responding to an emergency situation to complete building evacuation, shall be classified as Group R-4 Condition 2. Not more than five of the persons may require physical assistance from staff to respond to an emergency situation.

313.2.6 Group R-2, R-3, or R-5. Facilities with no more than eight persons receiving care, with one or more resident counselors, and all persons are capable of responding to an emergency situation without physical assistance from staff, may be classified as Group R-2, R-3, or R-5. Up to five of the persons may require physical assistance from staff to respond to an emergency situation when in compliance with the following:

1. All residents that require physical assistance from staff reside on a level of exit discharge and the path of egress to the exit does not include steps.
2. The building is protected by an automatic sprinkler system installed in accordance with Section 903.3 of this code or Section P2904 of the IRC.

313.3 Family day homes. Family day homes registered or licensed by the Virginia Department of Education shall be classified as Group R-2, R-3, or R-5.

313.4 Group homes. Group Homes licensed by the Virginia Department of Behavioral Health and Developmental Services shall be classified as one of the occupancies specified in Sections 313.4.1 through 313.4.3.

313.4.1 Groups R-2, R-3, R-4 Condition 1 or 2, or R-5. Facilities with no more than eight persons receiving care, with one or more resident counselors, shall be classified as Group R-2, R-3, R-4 (Condition 1 or 2), or R-5. Not more than five of the persons may require physical assistance from staff to respond to an emergency situation.

313.4.2 Group R-4 Condition 1. Facilities with eight to 16 persons receiving care, where all persons, without any assistance, are capable of responding to an emergency situation to complete building evacuation shall be classified as Group R-4 Condition 1. Not more than five of the persons may require physical assistance from staff to respond to an emergency, provided all persons requiring assistance reside on a level of exit discharge and the path of egress to the exit does not include steps.

313.4.3 Group R-4 Condition 2. Facilities with eight to 16 persons receiving care or facilities with more than five persons requiring physical assistance from staff to respond to an emergency situation shall be classified as Group R-4 Condition 2.

313.5 Hospice facilities. Hospice facilities licensed by the Virginia Department of Health shall be classified as one of the occupancies specified in Sections 313.5.1 through 313.5.3.

313.5.1 Group I-2. Facilities with 16 or more persons receiving care shall be classified as Group I-2.

313.5.2 Group R-4 Condition 1. Facilities with less than 16 persons receiving care shall be classified as Group R-4 Condition 1.

313.5.3 Group R-5. Facilities with five or fewer persons receiving care are permitted to be classified as Group R-5.

13VAC5-63-220. Chapter 4 Special detailed requirements based on use and occupancy.

A. Delete Section 403.4.5 of the IBC.

B. Change Sections 407.4 and 407.4.1.1 of the IBC to read:

407.4 Means of egress. Group I-2 occupancies shall be provided with means of egress complying with Sections 407.4.1 through 407.4.4 and Chapter 10.

407.4.1.1 Special locking arrangement. Means of egress doors shall be permitted to contain locking devices restricting the means of egress in areas in which the clinical needs of the patients require restraint of movement, where all of the following conditions are met:

1. The locks release upon activation of the fire alarm system or the loss of power.
2. The building is equipped with an approved automatic sprinkler system in accordance with Section 903.3.1.1.
3. A manual release device is provided at a nursing station responsible for the area.
4. A key-operated switch or other manual device is provided adjacent to each door equipped with the locking device. Such switch or other device, when operated, shall result in direct interruption of power to the lock independent of the control system electronics.
5. All staff shall have keys or other means to unlock the switch or other device or each door provided with the locking device.

C. Add Section 407.12 to the IBC to read:

407.12 Emergency power systems. Emergency power shall be provided for medical life support equipment, operating, recovery, intensive care, emergency rooms, fire detection, and alarm systems in any Group I-2 occupancy licensed by the Virginia Department of Health as a hospital, nursing home, or hospice facility.

D. Add Section 408.2.1 to the IBC to read:

408.2.1 Short-term holding areas. Short-term holding areas shall be permitted to comply with Section 431.

E. ~~Change~~ Delete exception to Section 408.6 of the IBC to read: IBC.

~~408.6 Smoke barrier. Occupancies classified as Group I-3 shall have smoke barriers complying with Sections 408.8 and 709 to divide every story occupied by residents for sleeping or any other story having an occupant load of 50 or more persons into no fewer than two smoke compartments.~~

F. Change Section 408.9 of the IBC and add Sections 408.9.1 through 408.9.3 to the IBC to read:

408.9 Smoke control. Smoke control for each smoke compartment shall be in accordance with Sections 408.9.1 through 408.9.3.

Exception: Smoke compartments with operable windows or windows that are readily breakable.

408.9.1 Locations. An engineered smoke control system shall comply with Section 909 and shall be provided in the following locations:

1. Dormitory areas.
2. Celled areas.
3. General housing areas.
4. Intake areas.
5. Medical celled or medical dormitory areas.
6. Interior recreation areas.

408.9.2 Compliance. The engineered smoke control system shall provide and maintain a tenable environment in the area of origin and shall comply with all of the following:

1. Shall facilitate the timely evacuation and relocation of occupants from the area of origin.
2. Shall be independent of exhaust systems under Chapter 5 of the ~~IMC~~ Virginia Mechanical Code.

3. Duration of operation in accordance with Section 909.4.6.

4. The pressurization method shall be permitted and shall provide a minimum of 24 air changes per hour of exhaust and 20 air changes per hour of makeup and shall comply with Section 909.6. If the pressurization method is not utilized, the exhaust method shall be provided and shall comply with Section 909.8.

408.9.3 Corridors. Egress corridors within smoke compartments shall be kept free and clear of smoke.

G. Change footnote "c" of Table 414.5.1 of the IBC to read:

c. Combustible dusts where manufactured, generated or used in such a manner that the concentration and conditions create a fire or explosion hazard based on information prepared by a registered design professional. See definition of "Combustible dust" in Chapter 2.

H. Add Section 414.6.2 to the IBC to read:

414.6.2 Other regulations. The installation, repair, upgrade, and closure of underground and aboveground storage tanks subject to the ~~Facility and Aboveground Storage Tank (AST) Regulation (9VAC25-91) and Underground Storage Tanks: Technical Standards and Corrective Action Requirements (9VAC25-580)~~ Virginia State Water Control Board regulations 9VAC25-91 and 9VAC25-580 shall be governed by those regulations, which are hereby incorporated by reference to be an enforceable part of this code. Where differences occur between the provisions of this code and the incorporated provisions of 9VAC25-91 and 9VAC25-580, the provisions of 9VAC25-91 and 9VAC25-580 shall apply. Provisions of the International Fire Code addressing closure of such tanks that are subject to 9VAC25-91 and 9VAC25-580 shall not be applicable.

~~H.~~ I. Change footnote "b" of Table 428.3 of the IBC to read:

b. Shall include walls, floors, ceilings, and construction supporting the floor of the laboratory suite necessary to provide separation from other portions of the building. Fire barriers shall be constructed in accordance with Section 707, and horizontal assemblies shall be constructed in accordance with Section 711.

~~I.~~ J. Delete Section 428.3.3 of the IBC.

~~J.~~ K. Change Section 428.3.7 of the IBC to read:

428.3.7 Ventilation. Ventilation shall be in accordance with the Virginia Mechanical Code. The design and installation of ducts from chemical fume hoods shall be in accordance with NFPA 91.

~~K.~~ L. Add IBC Section 429 to read:

Section 429 Manufactured Homes and Industrialized Buildings.

429.1 General. The provisions of this section shall apply to the installation or erection of manufactured homes subject to the Virginia Manufactured Home Safety Regulations (13VAC5-95) and industrialized buildings subject to the Virginia Industrialized Building Safety Regulations (13VAC5-91).

Note: Local building departments are also responsible for the enforcement of certain provisions of the Virginia Manufactured Home Safety Regulations (13VAC5-95) and the Virginia Industrialized Building Safety Regulations (13VAC5-91) as set out in those regulations.

429.2 Site work for manufactured homes. Footing design, basements, grading, drainage, decks, stoops, porches, and utility connections shall comply with the provisions of this code applicable to Group R-5 occupancies. Manufactured homes shall be classified as Group R-5 in accordance with Chapter 3 of this code. Additionally, all applicable provisions of Chapter 1 of this code, including requirements for permits, inspections, certificates of occupancy, and requiring compliance, are applicable to the installation and set-up of a manufactured home. Where the installation or erection of a manufactured home utilizes components that are to be concealed, the installer shall notify the building official that an inspection is necessary and ensure that an inspection is performed and approved prior to concealment of such components, unless the building official has agreed to an alternative method of verification.

429.2.1 Relocated manufactured homes. Installation, set-up, and site work for relocated manufactured homes shall comply with the provisions of this code and shall include the option of using the manufacturer's installations instructions or the federal Model Manufactured Home Installation Standards (24 CFR Part 3285) for the technical requirements.

429.2.2 Alterations and repairs to manufactured homes. Alterations and repairs to manufactured homes shall either be in accordance with federal Manufactured Home Construction and Safety Standards (24 CFR Part 3280) or in accordance with the alteration and repair provisions of this code.

429.2.3 Additions to manufactured homes. Additions to manufactured homes shall comply with this code and shall be structurally independent of the manufactured home, or when not structurally independent, shall be evaluated by an ~~RDP~~ registered design professional (RDP) to determine that the addition does not cause the manufactured home to become out of compliance with federal Manufactured Home Construction and Safety Standards (24 CFR Part 3280).

429.3 Wind load requirements for manufactured homes. Manufactured homes shall be anchored to withstand the wind loads established by the federal regulation for the area in which the manufactured home is installed. For the purpose of this code, Wind Zone II of the federal regulation shall include the Cities of Chesapeake, Norfolk, Portsmouth, and Virginia Beach.

429.4 Skirting requirements for manufactured homes. As used in this section, "skirting" means a weather-resistant material used to enclose the space from the bottom of the manufactured home to grade. In accordance with § 36-99.8 of the Code of Virginia, manufactured homes

installed or relocated shall have skirting installed within 60 days of occupancy of the home. Skirting materials shall be durable, suitable for exterior exposures and installed in accordance with the manufacturer's installation instructions. Skirting shall be secured as necessary to ensure stability, to minimize vibrations, to minimize susceptibility to wind damage, and to compensate for possible frost heave. Each manufactured home shall have a minimum of one opening in the skirting providing access to any water supply or sewer drain connections under the home. Such openings shall be a minimum of 18 inches (457 mm) in any dimension and not less than three square feet (0.28 m²) in area. The access panel or door shall not be fastened in a manner requiring the use of a special tool to open or remove the panel or door. On-site fabrication of the skirting by the owner or installer of the home shall be acceptable, provided that the material meets the requirements of this code. In addition, as a requirement of this code, skirting for the installation and set-up of a new manufactured home shall also comply with the requirements of 24 CFR Part 3285 - Model Manufactured Home Installation Standards.

429.5 Site work for industrialized buildings. Site work for the erection and installation of an industrialized building shall comply with the manufacturer's installation instructions. To the extent that any aspect of the erection or installation of an industrialized building is not covered by the manufacturer's installation instructions, this code shall be applicable, including the use of the ~~IRC~~ Virginia Residential Code for any construction work where the industrialized building would be classified as a Group R-5 building. In addition, all administrative requirements of this code for permits, inspections, and certificates of occupancy are also applicable. Further, the building official may require the submission of plans and specifications for details of items needed to comprise the finished building that are not included or specified in the manufacturer's instructions, including footings, foundations, supporting structures, proper anchorage, and the completion of the plumbing, mechanical, and electrical systems. Where the installation or erection of an industrialized building utilizes components that are to be concealed, the installer shall notify the building official that an inspection is necessary and ensure that an inspection is performed and approved prior to concealment of such components, unless the building official has agreed to an alternative method of verification.

Exception: Temporary family health care structures installed pursuant to § 15.2-2292.1 of the Code of Virginia shall not be required or permitted to be placed on a permanent foundation but shall otherwise remain subject to all pertinent provisions of this section.

429.6 Relocated industrialized buildings; alterations and additions. Industrialized buildings constructed prior to January 1, 1972, shall be subject to Section 117 when relocated. Alterations and additions to any existing industrialized buildings shall be subject to pertinent provisions of this code. Building officials shall be permitted to require the submission of plans and specifications for the model to aid in the evaluation of the proposed alteration or addition. Such plans and specifications shall be permitted to be submitted in electronic or other available format acceptable to the building official.

429.7 Change of occupancy of industrialized buildings. Change of occupancy of industrialized buildings is regulated by the Virginia Industrialized Building Safety Regulations (13VAC5-91). When the industrialized building complies with those regulations for the new occupancy, the building official shall issue a new certificate of occupancy under the USBC.

↳ M. Add Section 430 Aboveground Liquid Fertilizer Tanks to the IBC to read:

430.1 General. This section shall apply to the construction of aboveground liquid fertilizer storage tanks (ALFSTs) and shall supersede any conflicting requirements in other provisions of this code. ALFSTs shall also comply with any applicable nonconflicting requirements of this code.

430.1.1 When change of occupancy rules apply. A change of occupancy to use a tank as an ALFST occurs when there is a change in the use of a tank from storing liquids other than liquid fertilizers to a use of storing liquid fertilizer and when the type of liquid fertilizer being stored has a difference of at least 20% of the specific gravity, operating temperature, or both or a significant change in the material's compatibility.

430.2 Standards. Newly constructed welded steel ALFSTs shall comply with API 650 and TFI RMIP, as applicable. Newly constructed ALFSTs constructed of materials other than welded steel shall be constructed in accordance with accepted engineering practice to prevent the discharge of liquid fertilizer and shall be constructed of materials that are resistant to corrosion, puncture, or cracking. In addition, newly constructed ALFSTs constructed of materials other than welded steel shall comply with TFI RMIP, as applicable. For the purposes of this code, the use of TFI RMIP shall be construed as mandatory and any language in TFI RMIP, such as, but not limited to, the terms "should" or "may" which indicate that a provision is only a recommendation or a guideline shall be taken as a requirement. ALFSTs shall be placarded in accordance with NFPA 704.

Exception: Sections 4.1.4, 4.2.5, 5.1.2, 5.2.8, 5.3, and 8.1(d)(i) of TFI RMIP shall not be construed as mandatory.

430.3 Secondary containment. When ALFSTs are newly constructed and when there is a change of occupancy to use a tank as an ALFST, a secondary containment system designed and constructed to prevent any liquid fertilizer from reaching the surface water, groundwater or adjacent land before cleanup occurs shall be provided. The secondary containment system may include dikes, berms or retaining walls, curbing, diversion ponds, holding tanks, sumps, vaults, double-walled tanks, liners external to the tank, or other approved means and shall be capable of holding up to 110% of the capacity of the ALFST as certified by an RDP.

430.4 Repair, alteration and reconstruction of ALFSTs. Repair, alteration and reconstruction of ALFSTs shall comply with applicable provisions of API 653 and TFI RMIP.

430.5 Inspection. Applicable inspections as required by and in accordance with API 653 and TFI RMIP shall be performed for repairs and alterations to ALFSTs, the reconstruction of ALFSTs and

when there is a change of occupancy to use a tank as an ALFST. When required by API 653 or TFI RMIP, such inspections shall occur prior to the use of the ALFST.

430.6 Abandoned ALFSTs. Abandoned ALFSTs shall comply with applicable provisions of Section 5704.2.13.2 of the IFC.

~~M.~~ N. Add Section 431 Short-term Holding Areas to the IBC to read:

431.1 General. In all groups other than Group E, short-term holding areas shall be permitted to be classified as the main occupancy, provided all of the following are met:

1. Provisions are made for the release of all restrained or detained occupants of short-term holding areas at all times.
2. Aggregate area of short-term holding areas shall not occupy more than 10% of the building area of the story in which they are located and shall not exceed the tabular values for building area in Table 506.2 without building area increases.
3. Restrained or detained occupant load of each short-term holding area shall not exceed 20.
4. Aggregate restrained or detained occupant load in short-term holding areas per building shall not exceed 80.
5. Compliance with Sections 408.3.7, 408.3.8, 408.4, and 408.7 as applicable for Group I-3 occupancies.
6. Requirements of the main occupancy in which short-term holding areas are located shall be met.
7. Fire areas containing short-term holding areas shall be provided with a fire alarm system and automatic smoke detection system complying with Section 907.2.6.3 as applicable to I-3 occupancies.
8. Where each fire area containing short-term holding areas exceeds 12,000 square feet (1115 m²), such fire areas shall be provided with an automatic sprinkler system complying with Section 903.3.
9. Short-term holding areas shall be separated from other short-term holding areas and adjacent spaces by smoke partitions complying with Section 710.

~~N.~~ O. Add Section 432 Plant Processing or Extraction Facilities to the IBC to read:

432.1 General. The design, construction, and installation of plant processing or extraction facilities in any occupancy group shall comply with Chapter 39 of the International Fire Code.

~~O.~~ P. Add Section 433 Electrical Energy Storage Systems (ESS) to the IBC to read:

433.1 Scope. Electrical Energy Storage Systems shall comply with the applicable provisions of the International Fire Code.

13VAC5-63-224. Chapter 5 General building heights and areas.

Change Section 502.1 to read:

502.1 Address identification. New buildings shall be provided with approved address identification. The address identification shall be legible and placed in a position that is visible from the street or road fronting the property. Address identification characters shall contrast with their background. Address numbers shall be Arabic numbers or alphabetical letters. Numbers shall not be spelled out. Each character shall be a minimum of 4 inches (102 mm) high with a minimum stroke width of 1/2 inch (12.7 mm). Where required by the fire code official, address identification shall be provided in additional approved locations to facilitate emergency response. Where access is by means of a private road and the building address cannot be viewed from the public way, a monument, pole or other approved sign or means shall be used to identify the structure.

13VAC5-63-230. Chapter 7 Fire and smoke protection features.

A. Change Item 5 of Section 703.2.2 of the IBC and Section 703.2.3 of the IBC to read:

5. Alternative protection methods as allowed by Section 112.2.

703.2.3 Approved alternate method. The fire resistance of building elements, components or assemblies not complying with Section 703.2.1 or 703.2.2 shall be permitted to be established by an alternative protection method in accordance with Section 112.2.

B. Change Section 703.5 of the IBC to read:

703.7 Fire-resistance assembly marking. Where there is a concealed floor, floor-ceiling, attic space, the fire walls, fire barriers, fire partitions, smoke barriers, or any other wall required to have protected openings or penetrations shall be designated above ceilings and on the inside of all ceiling access doors that provide access to such fire rated assemblies by signage having letters no smaller than one inch (25.4 mm) in height. Such signage shall indicate the fire-resistance rating of the assembly and the type of assembly and be provided at horizontal intervals of no more than eight feet (2438 mm).

Note: An example of suggested formatting for the signage would be "ONE HOUR FIRE PARTITION."

C. Add Exception 2 to Section 705.2 of the IBC to read:

2. Decks and open porches of buildings of Groups R-3 and R-4.

D. Change Section 706.1 of the IBC to read:

706.1 General. Each portion of a building separated by one or more fire walls shall be considered a separate building. Fire walls shall be constructed in accordance with Sections ~~706.2~~

706.1.2 through 706.11. The extent and location of such fire walls shall provide a complete separation. Where a fire wall separates occupancies that are required to be separated by a fire barrier wall, the most restrictive requirements of each separation shall apply. Equipment and systems are permitted to serve multiple attached buildings on the same lot where separated by one or more fire walls.

E. Delete Exception 2 to Section 706.1.1 of the ~~IBC~~. IBC and change Section 706.1.2 of the IBC to read:

706.1.2 Deemed to comply. Fire walls designed and constructed in accordance with NFPA 221 shall be deemed to comply with this section, subject to the limitations of Sections 101.2 and 101.6. The required fire-resistance rating shall be determined by Section 706.4.

F. Add Exception 4 to Section 706.5.2 of the IBC to read:

4. Decks and open porches of buildings in Groups R-3 and R-4.

G. Change item 3 of Section 716.1.1 of the IBC and Section 716.2.1.4 of the IBC to read:

3. Alternative protection methods as allowed by Section 112.2.

716.2.1.4 Smoke and draft control. Fire door assemblies located in smoke barrier walls shall also meet the requirements for a smoke and draft control door assembly tested in accordance with UL 1784.

H. Change Section 717.5.3 of the IBC to read:

717.5.3 Shaft enclosures. Shaft enclosures that are permitted to be penetrated by ducts and air transfer openings shall be protected with approved fire and smoke dampers installed in accordance with their listing.

Exceptions:

1. Fire and smoke dampers are not required where steel exhaust subducts extend at least 22 inches (559 mm) vertically in exhaust shafts, provided there is a continuous airflow upward to the outside.
2. Fire dampers are not required where penetrations are tested in accordance with ASTM E119 as part of the fire resistance-rated assembly.
3. Fire and smoke dampers are not required where ducts are used as part of an approved smoke control system in accordance with Section 909.
4. Fire and smoke dampers are not required where the penetrations are in parking garage exhaust or supply shafts that are separated from other building shafts by not less than two-hour fire-resistance-rated construction.
5. Smoke dampers are not required where the building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.

~~I. Add Section 717.6.2.2 to the IBC to read:~~

~~717.6.2.2 Equipment shutdown. Where ceiling radiation dampers are listed as static dampers, the HVAC equipment shall be effectively shut down to stop the airflow prior to the damper closing using one of the following methods:~~

- ~~1. A duct detector installed in the return duct.~~
- ~~2. An area smoke detector interlocked with the HVAC equipment.~~
- ~~3. A listed heat sensor installed in the return duct.~~

13VAC5-63-235. Chapter 8 Interior finishes.

1. Delete item 2 of Section 806.1 of the IBC (items 1, 3 and 4 remain).

2. Change Section 806.2 of the IBC to read:

806.2 Combustible decorative materials. In other than Group I-3, curtains, draperies, fabric hangings, and similar combustible decorative materials suspended from walls or ceilings shall comply with Section 806.4 and shall not exceed 10% of the specific wall or ceiling area to which it is attached.

Fixed or movable walls and partitions, paneling, wall pads, and crash pads applied structurally or for decoration, acoustical correction, surface insulation, or other purposes shall be considered interior finish, shall comply with Section 803, and shall not be considered decorative materials or furnishings.

Exceptions:

1. In auditoriums or similar types of spaces in Group A, the permissible amount of curtains, draperies, fabric hangings, and similar combustible decorative materials suspended from walls or ceilings shall not exceed 75% of the aggregate wall area where the building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1, and where the material is installed in accordance with Section 803.15 of this code.
2. In auditoriums or similar types of spaces in Group A, the permissible amount of decorative materials suspended from the ceiling, located no more than 12 inches (305 mm) from the wall, not supported by the floor, and meeting the flame propagation performance criteria of NFPA 701, shall not exceed 75% of the aggregate wall area when the building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.
3. In Group R-2 dormitories, within sleeping units and dwelling units, the permissible amount of curtains, draperies, fabric hangings, and similar decorative materials suspended from walls or ceiling shall not exceed 50% of the aggregate walls areas where

the building is equipped throughout with an approved automatic sprinkler system installed in accordance with Section 903.3.1.

4. In Groups B and M occupancies, the amount of combustibile fabric partitions suspended from the ceiling and not supported by the floor shall comply with Section 806.4 and shall not be limited.

13VAC5-63-240. Chapter 9 Fire protection systems.

A. Change Section 901.2 (exception remains) of the IBC, and Item 2 of Section 903.2.1.2 of the IBC to read:

901.2 Fire protection systems. Fire protection and life safety systems shall be installed in accordance with this code and the International Fire Code.

Any fire protection or life safety system for which an exception or reduction to the provisions of this code has been granted shall be considered to be a required system.

2. The fire area has an occupant load of 100 or more in night clubs or 300 or more in other Group A-2 occupancies.

B. Change Item 2 of Section 903.2.1.3 of the IBC to read:

2. In Group A-3 occupancies other than places of religious worship, the fire area has an occupant load of 300 or more.

C. Delete Item 3 and change Item 1 of Section 903.2.3 of the IBC to read:

1. Throughout all Group E fire areas greater than 20,000 square feet (1858 m²) in area.

D. Add Exception 4 to Section 903.2.6 to read:

4. An automatic sprinkler system shall not be required for open-sided or chain link-sided buildings and overhangs over exercise yards 200 square feet (18.58 m²) or less in Group I-3 facilities, provided such buildings and overhangs are of noncombustible construction.

E. Delete Section 903.2.7.2 of the IBC.

F. Change Section 903.2.8 of the IBC to read:

903.2.8 Group R. An automatic sprinkler system installed in accordance with Section 903.3 shall be provided throughout all buildings with a Group R fire area, except for Group R-2 occupancies listed in the exceptions to this section when the necessary water pressure, volume, or both for the system is not available:

Exceptions:

1. Group R-2 occupancies that do not exceed two stories, including basements that are not considered as a story above grade, and with a maximum of 16 dwelling units per fire area. Each dwelling unit shall have at least one door

opening to an exterior exit access that leads directly to the exits required to serve that dwelling unit.

2. Group R-2 occupancies where all dwelling units are not more than two stories above the lowest level of exit discharge and not more than one story below the highest level of exit discharge of exits serving the dwelling unit and a two-hour fire barrier is provided between each pair of dwelling units. Each bedroom of a dormitory or boarding house shall be considered a dwelling unit under this exception.

G. Add Item 5 to Section 903.3.1.2.3 of the IBC to read:

5. Sprinkler protection shall be provided for attics in buildings of Type III, IV, or V construction in Group R-2 occupancies that are designed or developed and marketed to senior citizens 55 years of age or older and in Group I-1 occupancies in accordance with Section ~~7.2~~ 7.4 of NFPA 13R.

H. Add Section 903.3.5.1.1 to the IBC and change Section 903.3.5.2 of the IBC to Section 903.3.5.1.2; both to read as follows:

903.3.5.1.1 Limited area sprinkler systems. Limited area sprinkler systems serving fewer than 20 sprinklers on any single connection are permitted to be connected to the domestic service where a wet automatic standpipe is not available. Limited area sprinkler systems connected to domestic water supplies shall comply with each of the following requirements:

1. Valves shall not be installed between the domestic water riser control valve and the sprinklers.

Exception: An approved indicating control valve supervised in the open position in accordance with Section 903.4.

2. The domestic service shall be capable of supplying the simultaneous domestic demand and the sprinkler demand required to be hydraulically calculated by NFPA 13, NFPA 13R, or NFPA 13D.

903.3.5.1.2 Residential combination services. A single combination water supply shall be allowed provided that the domestic demand is added to the sprinkler demand as required by NFPA 13R.

I. Delete Sections 903.3.8 through 903.3.8.5 of the IBC.

J. Change Section ~~903.4.2~~ 903.4.3 of the IBC to read:

~~903.4.2~~ 903.4.3 Alarms. Approved audible devices shall be connected to every automatic sprinkler system. Such sprinkler water-flow alarm devices shall be activated by water flow equivalent to the flow of a single sprinkler of the smallest orifice size installed in the system. Alarm devices shall be provided on the exterior of the building in an approved location. Where a fire alarm system is installed, actuation of the automatic sprinkler system shall actuate the building fire alarm system. Group R-2 occupancies that contain 16 or more dwelling units or

sleeping units, any dwelling unit or sleeping unit two or more stories above the lowest level of exit discharge, or any dwelling unit or sleeping unit more than one story below the highest level of exit discharge of exits serving the dwelling unit or sleeping unit shall provide a manual fire alarm box at an approved location to activate the suppression system alarm.

K. Change exceptions 2, 3, 4 and 5 of Section 905.3.1 of the IBC to read: to read (exceptions 1 and 6 remain):

~~905.3.1 Height. Class III standpipe systems shall be installed throughout buildings where four or more stories are above or below grade plane, the floor level of the highest story is located more than 30 feet (9144 mm) above the lowest level of fire department vehicle access, or where the floor level of the lowest story is located more than 30 feet (9144 mm) below the highest level of fire department vehicle access.~~

Exceptions:

- ~~1. Class I standpipes are allowed in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2.~~
2. Class I manual wet standpipes are allowed in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1 or Section 903.3.2 and where the highest floor is located not more than 150 feet (45,720 mm) above the lowest level of fire department vehicle access.
3. Class I manual standpipes are allowed in open parking garages where the highest floor is located not more than 150 feet (45,720 mm) above the lowest level of fire department vehicle access.
4. Class I manual dry standpipes are allowed in open parking garages that are subject to freezing temperatures, provided that the hose connections are located as required for Class II standpipes in accordance with Section 905.5.
5. Class I standpipes are allowed in basements equipped throughout with an automatic sprinkler system.
- ~~6. In determining the lowest level of fire department vehicle access, it shall not be required to consider either of the following:~~
 - ~~6.1. Recessed loading docks for four vehicles or less.~~
 - ~~6.2. Conditions where topography makes access from the fire department vehicle to the building impractical or impossible.~~

L. Change Item 1 of Section 906.1 of the IBC to read:

1. In Groups A, B, E, F, H, I, M, R-1, R-4, and S occupancies.

Exceptions:

1. In Groups A, B, and E occupancies equipped throughout with quick response sprinklers, portable fire extinguishers shall be required only in locations specified in Items 2 through 6.

2. In Group I-3 occupancies, portable fire extinguishers shall be permitted to be located at staff locations and the access to such extinguishers shall be permitted to be locked.

M. Change Section 907.2.1.1 of the IBC (exception remains) to read:

907.2.1.1 System initiation in Group A occupancies with an occupant load of 1,000 or more and in certain night clubs. Activation of the fire alarm in Group A occupancies with an occupant load of 1,000 or more and in night clubs with an occupant load of 300 or more shall initiate a signal using an emergency voice and alarm communications system in accordance with Section 907.5.2.2.

~~Exception: Where approved, the prerecorded announcement is allowed to be manually deactivated for a period of time, not to exceed three minutes, for the sole purpose of allowing a live voice announcement from an approved, constantly attended location.~~

N. Change Section 907.2.3 of the IBC to read:

907.2.3 Group E. A manual fire alarm system that activates the occupant notification system meeting the requirements of Section 907.5 and installed in accordance with Section 907.6 shall be installed in Group E occupancies. When automatic sprinkler systems or smoke detectors are installed, such systems or detectors shall be connected to the building fire alarm system.

Exceptions:

1. A manual fire alarm system is not required in Group E occupancies with an occupant load of 50 or less.

2. Manual fire alarm boxes are not required in Group E occupancies where all of the following apply:

2.1. Interior corridors are protected by smoke detectors.

2.2. Auditoriums, cafeterias, gymnasiums, and similar areas are protected by heat detectors or other approved detection devices.

2.3. Shops and laboratories involving dusts or vapors are protected by heat detectors or other approved detection devices.

3. Manual fire alarm boxes shall not be required in Group E occupancies where the building is equipped throughout with an approved automatic sprinkler system installed in accordance with Section 903.3.1.1, the occupant notification system will activate on sprinkler water flow and manual activation is provided from a normally occupied location.

O. Change Section 907.3.2 of the IBC to read:

907.3.2 Special locking systems. Where special locking systems are installed on means of egress doors in accordance with Section 407.4.1.1 or ~~1010.2.13~~, 1010.2.12, an automatic detection system shall be installed as required by that section.

P. Add an exception to Section 907.5.2.1.1 of the IBC to read:

Exception: Sound pressure levels in Group I-3 occupancies shall be permitted to be limited to only the notification of occupants in the affected smoke compartment.

Q. Delete Exception 1 from Section 907.5.2.3 and change the following row in Table 907.5.2.3.2 (~~portions of table not shown remain~~) of the IBC (~~portions of table not shown remain~~) to read:

TABLE 907.5.2.3.2 VISIBLE ALARMS	
NUMBER OF SLEEPING UNITS OR DWELLING UNITS	SLEEPING ACCOMMODATIONS WITH VISIBLE ALARMS

R. Change Section 909.6 of the IBC to read:

909.6 Pressurization method. When approved by the building official, the means of controlling smoke shall be permitted by pressure differences across smoke barriers. Maintenance of a tenable environment is not required in the smoke-control zone of fire origin.

S. Change Section 911.1.3 of the IBC to read:

911.1.3 Size. The fire command center shall be a minimum of 96 square feet (9 m²) in area with a minimum dimension of eight feet (2438 mm).

Exception: Where it is determined by the building official, after consultation with the fire official, that specific building characteristics require a larger fire command center, the building official may increase the minimum required size of the fire command center up to 200 square feet (19 m²) in area with a minimum dimension of up to 10 feet (3048 mm).

T. Delete Section 912.2.2 of the IBC.

U. Change Sections 912.4 and 912.4.2 of the IBC to read:

912.4 Access. Immediate access to fire department connections shall be provided without obstruction by fences, bushes, trees, walls, or any other fixed or moveable object. Access to fire department connections shall be approved by the fire official.

Exception: Fences, where provided with an access gate equipped with a sign complying with the legend requirements of this section and a means of emergency operation. The gate and the means of emergency operation shall be approved by the fire official.

912.4.2 Clear space around connections. A working space of not less than 36 inches (762 mm) in width, 36 inches (914 mm) in depth, and 78 inches (1981 mm) in height shall be provided in front of and to the sides of wall-mounted fire department connections and around the circumference of free-standing fire department connections, except as otherwise required or approved by the fire official.

V. Replace Section 915 of the IBC with the following:

915.1 Carbon monoxide alarms. Carbon monoxide alarms shall comply with this section.

915.2 Group I or R. Group I or R occupancies located in a building containing a fuel-burning appliance or in a building that has an attached garage shall be equipped with single-station carbon monoxide alarms. The carbon monoxide alarms shall be listed as complying with UL 2034 and be installed and maintained in accordance with NFPA 720 and the manufacturer's instructions. An open parking garage, as defined in Chapter 2, or an enclosed parking garage ventilated in accordance with Section 404 of the IMC shall not be considered an attached garage.

Exception: Sleeping units or dwelling units that do not themselves contain a fuel-burning appliance or have an attached garage but that are located in a building with a fuel-burning appliance or an attached garage, need not be equipped with single-station carbon monoxide alarms provided that:

1. The sleeping unit or dwelling unit is located more than one story above or below any story that contains a fuel-burning appliance or an attached garage;
2. The sleeping unit or dwelling unit is not connected by duct work or ventilation shafts to any room containing a fuel-burning appliance or to an attached garage; and
3. The building is equipped with a common area carbon monoxide alarm system.

915.3 Group E. Classrooms in Group E occupancies located in a building containing a fuel-burning appliance or in a building that has an attached garage or small engine or vehicle shop shall be equipped with single-station carbon monoxide alarms. The carbon monoxide alarms shall be listed as complying with UL 2034 and be installed and maintained in accordance with NFPA 720 and the manufacturer's instructions. An open parking garage, as defined in Chapter 2, or an enclosed parking garage ventilated in accordance with Section 404 of the IMC shall not be considered an attached garage.

Exception: Classrooms that do not themselves contain a fuel-burning appliance or have an attached garage but are located in a building with a fuel-burning appliance or an attached garage, need not be equipped with single-station carbon monoxide alarms provided that:

1. The classroom is located more than 100 (30480 mm) feet from the fuel burning appliance or attached garage or located more than one story above or below any story which contains a fuel-burning appliance or attached garage; and

2. The classroom is not connected by duct work or ventilation shafts to any room containing a fuel-burning appliance.

915.4 Carbon monoxide detection systems. Carbon monoxide detection systems, which include carbon monoxide detectors and audible notification appliances, installed and maintained in accordance with this section for carbon monoxide alarms and NFPA 720 shall be permitted. The carbon monoxide detectors shall be listed as complying with UL 2075.

W. Change Section 916.1 of the IBC to read:

916.2 Permits. Permits shall be required as set forth in Section 108.

X. Change the title of IBC Section 918 to read:

In-Building Emergency Communications Coverage.

~~Y.~~ Y. Change Section 918.1 of the IBC to read:

918.1 General. For localities utilizing public safety wireless communications, dedicated infrastructure to accommodate and perpetuate continuous in-building emergency communication equipment to allow emergency public safety personnel to send and receive emergency communications shall be provided in new buildings and structures in accordance with this section.

Exceptions:

1. Buildings of Use Groups A-5, I-4, within dwelling units of R-2, R-3, R-4, R-5, and U.
2. Buildings of Types IV and V construction without basements that are not considered unlimited area buildings in accordance with Section 507.
3. Above grade single story buildings of less than 20,000 square feet.
4. Buildings or leased spaces occupied by federal, state, or local governments or the contractors thereof with security requirements where the building official has approved an alternative method to provide emergency communication equipment for emergency public safety personnel.
5. Where the owner provides technological documentation from a qualified individual that the structure or portion thereof does not impede emergency communication signals.
6. Buildings in localities that do not provide the additional communication equipment required for the operation of the system.

~~Y.~~ Z. Add Sections 918.1.1, 918.1.2, and ~~918.1.3~~ 918.1.3, and 918.2 to the IBC to read:

918.1.1 Installation. In-building two-way emergency responder communication coverage systems shall comply with Sections 510.4 and 510.5 of the International Fire Code, except that

the acceptance testing procedure required by Section 510.5.4 of the International Fire Code shall be the responsibility of the locality. The building owner shall install cabling. The cable shall be installed in dedicated conduits, raceways, plenums, attics, or roofs and compatible for these specific installations as well as other applicable provisions of this code. The locality shall be responsible for the installation of any additional communication equipment required for the operation of the system.

918.1.2 Operations. The locality will assume all responsibilities for the operation and maintenance of the emergency communication equipment. The building owner shall provide sufficient operational space within the building to allow the locality access to and the ability to operate in-building emergency communication equipment.

918.1.3 Inspection. In accordance with Section 113.3, all installations shall be inspected prior to concealment.

~~Z. Add Section 918.2 to the IBC to read:~~

918.2 Acceptance test. Upon completion of installation, after providing reasonable notice to the owner or the owner's representative, emergency public safety personnel shall have the right during normal business hours or other mutually agreed upon time to enter onto the property to conduct field tests to verify that the required level of radio coverage is present at no cost to the owner. Any noted deficiencies in the installation of the radiating cable or operational space shall be provided in an inspection report to the owner or the owner's representative.

13VAC5-63-245. Chapter 10 Means of egress.

A. Delete Section 1002.2 of the IBC. IBC and change Section 1002.1 of the IBC to read:

1002.1 Maintenance. Means of egress shall be maintained in accordance with the Statewide Fire Prevention Code.

B. Change Section 1004.9 of the IBC to read:

1004.9 Posting of occupant load. Every room or space that is an assembly occupancy and where the occupant load of that room or space is 50 or more shall have the occupant load of the room or space posted for the intended configurations in a conspicuous place near the main exit or exit access doorway from the room or space. Posted signs shall be of an approved legible permanent design and shall be maintained by the owner or the owner's authorized agent.

C. Change Exception 1 of Section 1005.3.1 of the IBC to read:

1. For other than Groups H and I-2 occupancies, the capacity, in inches (mm), of means of egress stairways shall be calculated by multiplying the occupant load served by such stairway by a means of egress capacity factor of 0.2 inch (5.1 mm) per occupant in buildings equipped with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2.

D. Change Exception 1 of Section 1005.3.2 of the IBC to read:

1. For other than Groups H and I-2 occupancies, the capacity in inches (mm) of means of egress components other than stairways shall be calculated by multiplying the occupant load served by such component by a means of egress capacity factor of 0.15 inch (3.8 mm) per occupant in buildings equipped with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2.

E. Add Exception 4 ~~of~~ to Section 1006.2.1 of the IBC to read:

4. In Group R-2 and R-3 occupancies, one means of egress is permitted within and from individual dwelling units with a maximum occupant load of 20 where the dwelling unit is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2 and the common path of egress travel does not exceed 125 feet (38,100 mm). This exception shall also apply to Group R-2 occupancies where Section 903.2.8, Exception 1 or 2 is applicable.

F. Change the number "49" to "50" in the "Maximum Occupant Load of Space" column in the "A^c, E, M," "B," "F," and "U" rows of Table 1006.2.1 of the IBC.

G. Change the number "49" to "50" in the "Maximum Occupant Load per Story" column of the "A, B^b, E, F^b, M, U" row of Table ~~1006.3.4.2(2)~~ 1006.3.4(2).

H. Change Exception 2 of Section 1007.1.1 of the IBC to read:

2. Where a building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2, the separation distance of the exit doors or exit access doorways shall not be less than one-fourth of the length of the maximum overall diagonal dimension of the area served.

I. ~~Change~~ Add exception 3 (exceptions 1 and 2 remain) to Section 1009.6.4 of the IBC to read:

~~1009.6.4 Separation. Each area of refuge shall be separated from the remainder of the story by a smoke barrier complying with Section 709 or a horizontal exit complying with Section 1026. Each area of refuge shall be designed to minimize the intrusion of smoke.~~

~~Exceptions:~~

~~1. Areas of refuge located within an enclosure for interior exit stairways complying with Section 1023.~~

~~2. Areas of refuge in outdoor facilities where exit access is essentially open to the outside.~~

3. Areas of refuge where the area of refuge and areas served by the area of refuge are equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2.

J. ~~Change Section 1010.2.8 of the IBC to read:~~

~~1010.2.8 Emergency supplemental hardware. In Group E occupancies, except Group E day care facilities, Group B educational occupancies, and public buildings, exit access doors from classrooms, offices, and other occupied rooms, except for exit doors and doors across corridors, shall be permitted to be provided with emergency supplemental hardware where all of the following conditions are met:~~

~~1. The door shall be capable of being opened from outside the room with a key, proprietary device provided by the manufacturer, or other approved means.~~

~~2. The door shall be openable from within the room in accordance with Section 1010.2.3, except emergency supplemental hardware is not required to comply with Chapter 11.~~

~~Note: School officials and building owners should consult with their legal counsel regarding provisions of the Americans with Disabilities Act of 1990 (42 USC § 12101 et seq.) and any other applicable requirements.~~

~~3. Installation of emergency supplemental hardware on fire door assemblies must comply with Section 716.2. Modifications shall not be made to listed panic hardware, fire door hardware, or door closures.~~

~~4. The emergency supplemental hardware shall not be capable of being used on other doors not intended to be used and shall have at least one component that requires modification to or is permanently affixed to the surrounding wall, floor, door, or frame assembly construction for it to properly function.~~

~~5. Employees shall engage in lockdown training procedures on how to deploy and remove the emergency supplemental hardware, and its use shall be incorporated in the approved lockdown plan complying with the SFPC.~~

~~6. The emergency supplemental hardware and its components shall be maintained in accordance with the SFPC.~~

~~7. Approved emergency supplemental hardware shall be of consistent type throughout a building.~~

~~Exception: The building official may approve alternate types of emergency supplemental hardware in accordance with Section 110.1 when a consistent device cannot be installed.~~

~~✖~~ Change Section 1010.1.5 (exception remains) of the IBC to read:

1010.1.5 Landings at doors. Landings shall have a width not less than the width of the stairway or the door, whichever is greater. Doors in the fully open position shall not reduce a required dimension by more than seven inches (178 mm). Where a landing serves an occupant load of 50 or more, other doors, gates, or turnstiles in any position shall not reduce the landing to less than one-half its required width nor prevent a door, gate, or turnstile from opening to less than one-half of the required landing width. Landings shall have a length measured in the direction of travel of not less than 44 inches (1118 mm).

~~Exception: Landing length in the direction of travel in Groups R-3 and U and within individual units of Group R-2 need not exceed 36 inches (914 mm).~~

K. Add Exceptions 4 and 5 (exceptions 1, 2 and 3 remain) to Section 1010.2.1 of the IBC to read:

4. Manual bolts provided in accordance with Section 1010.2.7.

5. One additional operation shall be permitted for release of emergency supplemental hardware provided in accordance with Section 1010.2.7.

L. Add an exception to Sections 1010.2 and 1010.2.2 of the IBC to read:

Exception: Emergency supplemental hardware provided in accordance with Section ~~1010.2.8-~~ 1010.2.7.

M. Change Section 1010.2.3 of the IBC (exceptions remain) to read:

1010.2.3 Hardware height. Door handles, pulls, latches, locks, and other operating devices shall be installed 34 inches (864 mm) minimum and 48 inches (1219 mm) maximum above the finished floor. Emergency supplemental hardware provided in accordance with Section 1010.2.8, shall be installed 48 inches (1219 mm) maximum above the finished floor. ~~Locks used only for security purposes and not used for normal operation are permitted at any height.~~

~~Exception: Access doors or gates in barrier walls and fences protecting pools, spas, and hot tubs shall be permitted to have operable parts of the latch release on self-latching devices at 54 inches (1370 mm) maximum above the finished floor or ground, provided that the self-latching devices are not also self-locking devices operated by means of a key, electronic opener, or integral combination lock.~~

N. Change Item 3 of Section 1010.2.4 of the IBC to read:

3. In buildings in occupancy Groups B, F, M, and S, the main exterior door or doors are permitted to be equipped with key-operated locking devices from the egress side provided:

3.1. The locking device is readily distinguishable as locked.

3.2. A readily visible durable sign is posted on the egress side on or adjacent to the door stating: THIS DOOR TO REMAIN UNLOCKED WHEN THIS SPACE IS OCCUPIED. The sign shall be in letters one inch (25 mm) high on a contrasting background.

3.3. The use of the key-operated locking device is revocable by the building official for due cause.

O. Add Items 11, 11.1, and 11.2 to Section 1010.2.4 of the IBC to read:

11. Egress doors equipped with emergency supplemental hardware complying with Section ~~1010.1.4.4,~~ 1010.2.7 from the egress side provided:

11.1. A readily visible durable sign is posted on the egress side on or adjacent to the door stating: THIS HARDWARE SHALL BE USED BY AUTHORIZED PERSONNEL ONLY. The sign shall be in letters one inch (25 mm) high on a contrasting background.

11.2. The use of the emergency supplemental hardware is revocable by the building official or fire official for due cause.

P. ~~Add Exception 6 to Section 1010.2.5 of the IBC to read:~~

~~6. Emergency supplemental hardware provided in accordance with Section 1010.2.8.~~

Q. ~~Add Exception 5 to Section 1010.2.1 of the IBC to read:~~

~~5. One additional operation shall be permitted for release of emergency supplemental hardware provided in accordance with Section 1010.2.8.~~

Change Section 1010.2.7 of the IBC to read:

1010.2.7 Emergency supplemental hardware. In Group E occupancies, except Group E day care facilities, Group B educational occupancies, and public buildings, exit access doors from classrooms, offices, and other occupied rooms, except for exit doors and doors across corridors, shall be permitted to be provided with emergency supplemental hardware where all of the following conditions are met:

1. The door shall be capable of being opened from outside the room with a key, proprietary device provided by the manufacturer, or other approved means.

2. The door shall be openable from within the room in accordance with Section 1010.2.3, except emergency supplemental hardware is not required to comply with Chapter 11.

Note: School officials and building owners should consult with their legal counsel regarding provisions of the Americans with Disabilities Act of 1990 (42 USC § 12101 et seq.) and any other applicable requirements.

3. Installation of emergency supplemental hardware on fire door assemblies must comply with Section 716.2. Modifications shall not be made to listed panic hardware, fire door hardware, or door closures.

4. The emergency supplemental hardware shall not be capable of being used on other doors not intended to be used and shall have at least one component that requires modification to or is permanently affixed to the surrounding wall, floor, door, or frame assembly construction for it to properly function.

5. Employees shall engage in lockdown training procedures on how to deploy and remove the emergency supplemental hardware, and its use shall be incorporated in the approved lockdown plan complying with the SFPC.

6. The emergency supplemental hardware and its components shall be maintained in accordance with the SFPC.

7. Approved emergency supplemental hardware shall be of consistent type throughout a building.

Exception: The building official may approve alternate types of emergency supplemental hardware in accordance with Section 110.1 when a consistent device cannot be installed.

R. ~~Delete Section 1010.2.14 of the IBC.~~

S. ~~Add Exceptions 1 and 2 to Section 1010.2.13 of the IBC to read:~~

~~Exceptions:~~

~~1. Approved, listed, delayed egress locks shall be permitted to be installed on doors serving Group A-3 airport facilities, provided they are installed in accordance with this section.~~

~~2. Emergency supplemental hardware shall not be considered a delayed egress locking system.~~

T. ~~Q. Renumber Exceptions 3 and 4 to be Exceptions 2 and 3 of Section 1010.2.9; delete Delete Exception 1 of Section 1010.2.9; renumber Exception 2 to be Exception 1 of Section 1010.2.9 1010.2.8 of the IBC; and change Exception 1 to read: IBC (exceptions 2, 3, and 4 remain).~~

~~Exceptions:~~

~~1. Doors provided with panic hardware or fire exit hardware and serving a Group A or E occupancy shall be permitted to be electrically locked in accordance with Section 1010.2.11.~~

U. ~~R. Add Section 1010.2.9.5 1010.2.8.5 to the IBC to read:~~

~~1010.2.9.5 1010.2.8.5~~ Locking certain residential sliding doors. In dwelling units of Group R-2 buildings, exterior sliding doors that are one story or less above grade, shared by two dwelling units, or are otherwise accessible from the outside shall be equipped with locks. The mounting screws for the lock case shall be inaccessible from the outside. The lock bolt shall engage the strike in a manner that will prevent it from being disengaged by movement of the door.

Exception: Exterior sliding doors which are equipped with removable metal pins or charlie bars.

V. ~~S. Add Section 1010.2.9.6 1010.2.8.6 to the IBC to read:~~

~~1010.2.9.6 1010.2.8.6~~ Door viewers in certain residential buildings. Entrance doors to dwelling units of Group R-2 buildings shall be equipped with door viewers with a field of vision of not less than 180 degrees.

Exception: Entrance doors having a vision panel or side vision panels.

T. Change Section 1010.2.9 of the IBC to delete reference to Section 1010.2.13 from the list of

referenced sections (all other referenced sections remain).

U. Add Exceptions 1 and 2 to Section 1010.2.12 of the IBC to read:

Exceptions:

1. Approved, listed, delayed egress locks shall be permitted to be installed on doors serving Group A-3 airport facilities, provided they are installed in accordance with this section.

2. Emergency supplemental hardware shall not be considered a delayed egress locking system.

V. Delete Section 1010.2.13 of the IBC.

W. Change Exception 3 of Section 1011.5.2 of the IBC to read:

3. In Group R-3 occupancies, within dwelling units in Group R-2 occupancies, and in Group U occupancies that are accessory to a Group R-3 occupancy or accessory to individual dwelling units in Group R-2 occupancies, the maximum riser height shall be 8.25 inches (210 mm); the minimum tread depth shall be nine inches (229 mm); the minimum winder tread depth at the walk line shall be 10 inches (254 mm); and the minimum winder tread depth shall be six inches (152 mm). A nosing not less than 0.75 inch (19.1 mm) but not more than 1.25 inches (32 mm) shall be provided on stairways with solid risers where the tread depth is less than 11 inches (279 mm).

X. Delete Exception 4 from Section 1011.5.2 of the IBC.

Y. Add Exception 4 to Section 1011.6 of the IBC to read:

4. A floor or landing is not required at the top of an interior flight of exit access stairs within individual dwelling units and sleeping units of Group R-2 occupancies and dwelling units of Group R-3 occupancies, including stairs in an enclosed private garage serving only an individual dwelling unit, provided that a door does not swing over the stairs.

Z. Change Section 1015.8 (Items 1 through 4 and 2 remain) of the IBC to read:

1015.8 Window openings. Windows in Groups R-2 and R-3 buildings including dwelling units where the ~~top of the sill~~ bottom of the clear opening of an operable window opening is located less than 18 inches (457 mm) above the finished floor and more than 72 inches (1829 mm) above the finished grade or other surface below on the exterior of the building shall comply with ~~one of~~ the following:

AA. Add Exception 3 to Item 5 ~~6~~ of Section 1016.2 of the IBC to read:

3. A maximum of one exit access is permitted to pass through kitchens, store rooms, closets, or spaces used for similar purposes provided such a space is not the only means of exit access.

BB. Change the following rows and delete footnote "~~b~~" footnotes, "~~b~~", "~~c~~", and "~~d~~" in Table 1020.2, and delete Section 1020.2.1 of the IBC. 1020.2 to read:

Table 1020.2
Corridor Fire-Resistance Rating

Occupancy	Occupant Load Served By Corridor	Required Fire-Resistance Rating (hours)	
		Without sprinkler system	With sprinkler system
R	Greater than 10	1	0.5
I-1	All	Not Permitted	1
I-3	All	Not Permitted	0

CC. Add an additional row to Table 1020.3 of the IBC to read:

Occupancy	Width (minimum)
In corridors of Group I-2 assisted living facilities licensed by the Virginia Department of Social Services serving areas with wheelchair, walker, and gurney traffic where residents are capable of self-preservation or where resident rooms have a means of egress door leading directly to the outside.	44 inches

DD. Add Exception 2 to Section 1023.5 of the IBC to read:

2. For buildings in other than Group H, with no more than two stories above grade plane and are equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1, structural members, other than columns, that are part of the primary structural frame supporting the roof sheathing, roof slab, or roof deck only and structural members that are secondary members supporting the roof sheathing, roof slab, or roof deck only shall be permitted to penetrate an interior exit stairway enclosure or a ramp enclosure. Such penetrations shall be protected in accordance with Section 714.

EE. Change Section 1023.9 of the IBC to read:

1023.9 Floor identification signs. A sign shall be provided at each floor landing in exit enclosures connecting more than three stories designating the floor level, the terminus of the top and bottom of the exit enclosure, and the identification of the stair or ramp by designation with a letter of the alphabet. The signage shall also state the story of and the direction to the exit

discharge and the availability of roof access from the enclosure for the fire department. The sign shall be located five feet (1524 mm) above the floor landing in a position that is readily visible when the doors are in the open and closed positions. Floor level identification signs in tactile characters complying with ICC A117.1 shall be located at each floor level landing adjacent to the door leading from the enclosure into the corridor to identify the floor level.

~~FF.~~ Add Exception 2 to Section 1024.6 of the IBC to read:

~~2. For buildings in other than Group H, with no more than two stories above grade plane and are equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1, structural members, other than columns, which are part of the primary structural frame supporting the roof sheathing, roof slab, or roof deck only and structural members that are secondary members supporting the roof sheathing, roof slab, or roof deck only shall be permitted to penetrate an interior exit stairway enclosure or a ramp enclosure. Such penetrations shall be protected in accordance with Section 714.~~

~~GG.~~ EE. Change Section 1025.1 of the IBC (exception remains) to read:

1025.1 General. Approved luminous egress path markings delineating the exit path shall be provided in buildings of Groups A, B, E, I, M, and R-1 having occupied floors located more than 420 feet (128,016 mm) above the lowest level of fire department vehicle access in accordance with this section.

~~Exception: Luminous egress path markings shall not be required on the level of exit discharge in lobbies that serve as part of the exit path in accordance with Section 1028.1, Exception 1.~~

~~HH.~~ FF. Change the first paragraph of Section 1026.2 of the IBC to read (Exception remains); and second paragraph remain):

1026.2 Separation. The separation between buildings or refuge areas connected by a horizontal exit shall be provided by a fire wall complying with Section 706, by a fire barrier complying with Section 707, or a horizontal assembly complying with Section 711. The minimum fire-resistance rating of the separation shall be two hours. Opening protectives in horizontal exits shall also comply with Section 716. Duct and air transfer openings in a fire wall or fire barrier that serves as a horizontal exit shall also comply with Section 717. The horizontal exit separation shall extend vertically through all levels of the building unless floor assemblies have a fire-resistance rating of not less than two hours. Openings in horizontal assemblies on the story served by horizontal exits shall be protected in accordance with Sections 712.1.1, 712.1.3, and 712.1.13.

13VAC5-63-250. Chapter 11 Accessibility.

A. Add an exception to Section 1102.1 of the IBC to read:

Exception: Wall-mounted visible alarm notification appliances in Group I-3 occupancies shall be permitted to be a maximum of 120 inches (3048 mm) above the floor or ground, measured to

the bottom of the appliance. Such appliances shall otherwise comply with all applicable requirements.

B. Change Section 1103.2.8 of the IBC to read:

1103.2.8 Raised and lowered areas in places of religious worship. Raised or lowered areas or portions of areas in places of religious worship are not required to be accessible or to be served by an accessible route, provided such areas are used primarily for the performance of religious ceremonies and are located within an accessible story or mezzanine.

C. Add Section 1103.2.15 to the IBC to read:

1103.2.15 Emergency supplemental hardware. In Group E occupancies, except Group E day care facilities, Group B educational occupancies, and public buildings, emergency supplemental hardware is not required to comply with this chapter when deployed during an active shooter or hostile threat event and provided in accordance with Section ~~1010.2.8~~. 1010.2.7.

D. Change Section 1106.2 of the IBC and replace Table 1106.2 of the IBC with Tables 1106.2(1) and 1106.2(2) to read:

~~1106.1~~ 1106.2 Required. Where parking is provided, accessible parking spaces shall be provided in compliance with Tables 1106.2(1) and 1106.2(2), as applicable, except as required by Sections 1106.3 through 1106.5. Where more than one parking facility is provided on a site, the number of parking spaces required to be accessible shall be calculated separately for each parking facility.

Exception: This section does not apply to parking spaces used exclusively for buses, trucks, other delivery vehicles, law-enforcement vehicles, or vehicular impound and motor pools where lots accessed by the public are provided with an accessible passenger loading zone.

Table 1106.2(1)	
Accessible Parking Spaces for Groups A, B, E, M, R-1, R-2, and I ^a	
Total Parking Spaces Provided	Required Minimum Number of Accessible Spaces
1 - 25	1
26 - 50	2
51 - 75	3
76 - 100	4
101 - 125	5

126 - 150	6
151 - 200	7
201 - 300	8
301 - 400	9
401 - 500	10
501 - 1,000	2.33% of total
1,001 and over	23, plus one for each 100, or fraction thereof, over 1,000

a. Condominium parking in Group R-2 occupancies where parking is part of the unit purchase shall be in accordance with Table ~~1106.2.2~~. 1106.2(2).

Table 1106.2(2) Accessible Parking Spaces for Groups F, S, H, R-3, R-4, and U	
Total Parking Spaces Provided	Required Minimum Number of Accessible Spaces
1 - 25	1
26 - 50	2
51 - 75	3
76 - 100	4
101 - 150	5
151 - 200	6
201 - 300	7
301 - 400	8
401 - 500	9
501 - 1,000	2.0% of total
1,001 and over	20, plus one for each 100, or fraction thereof, over 1,000

E. Add Section 1106.10 to the IBC to read:

1106.10 Identification of accessible parking spaces. In addition to complying with applicable provisions of this chapter, all accessible parking spaces shall be identified by above-grade signs. A sign or symbol painted or otherwise displayed on the pavement of a parking space shall not constitute an above-grade sign. All above-grade parking space signs shall have the bottom edge of the sign no lower than four feet (1219 mm) nor higher than seven feet (2133 mm) above the parking surface. All disabled parking signs shall include the following language: PENALTY, \$100-500 Fine, TOW-AWAY ZONE. Such language may be placed on a separate sign and attached below existing above-grade disabled parking signs, provided that the bottom edge of the attached sign is no lower than four feet above the parking surface.

F. Change Section 1110.2 (exceptions remain) of the IBC to read:

1110.2 Toilet and bathing facilities. Each toilet room and bathing room shall be accessible. Where a floor level is not required to be connected by an accessible route, the only toilet rooms or bathing rooms provided within the facility shall not be located on the inaccessible floor. Except as provided for in Sections 1110.2.2 through 1110.2.6, at least one of each type of fixture, element, control, or dispenser in each accessible toilet room and bathing room shall be accessible.

G. Add Section 1110.2.6 to the IBC to read:

1110.2.6 Multi-user gender-neutral toilet facility fixtures. Where multi-user facilities are provided to serve all genders, at least two of each fixture type, but only one urinal if more than one urinal is provided, shall comply with ICC A117.1. Water closet and urinal compartments shall comply with Section 1210.3.

H. Add Sections ~~1110.17~~ 1110.20 and ~~1110.17.1~~ 1110.20.1 to the IBC to read:

~~1110.17~~ 1110.20 Dwellings containing universal design features for accessibility. Group R-5 occupancies not subject to Section R320.1 of the IRC and Group R-3 occupancies not subject to Section 1108.6.3 may comply with this section and be approved by the local building department as dwellings containing universal design features for accessibility.

~~1110.17.1~~ 1110.20.1 Standards for dwellings containing universal design features for accessibility. When the following requirements are met, approval shall be issued by the local building department indicating that a dwelling has been constructed in accordance with these standards and is deemed to be a dwelling containing universal design features for accessibility.

1. The dwelling must comply with the requirements for Type C units under Section 1105 of ICC A117.1 with the following changes to those requirements:

1.1. That at least one bedroom be added to the interior spaces required by Section 1105.4 of ICC A117.1.

1.2. In the toilet room or bathroom required by Section 1105 of ICC A117.1, in addition to the lavatory and water closet, a shower or bathtub complying with

Section 1104.11.3.2.3 of ICC A117.1 shall be provided and shall include reinforcement for future installation of grab bars in accordance with Section 1104.11.1 of ICC A117.1.

1.3. That the exception to Section 1105.4 of ICC A117.1 is not applicable.

1.4. That there be a food preparation area complying with Section 1105.7 of ICC A117.1 on the entrance level.

1.5. That any thermostat for heating or cooling on the entrance level comply with Section 1102.9 of ICC A117.1.

I. Delete the exception for Item 1 of Section 1112.1 of the IBC.

13VAC5-63-260. Chapter 12 Interior environment.

A. Add Section 1202.5.4 to the IBC to read:

1202.5.4 Insect screens in occupancies other than Group R. Every door, window, and other outside opening for natural ventilation serving structures classified as other than a residential group containing habitable rooms, food preparation areas, food service areas, or any areas where products to be included or utilized in food for human consumption are processed, manufactured, packaged, or stored shall be supplied with approved tightly fitting screens of not less than 16 mesh per inch (16 mesh per 25 mm) and every screen door used for insect control shall have a self-closing device.

Exception: Screen doors shall not be required for out swinging doors or other types of openings which make screening impractical, provided other approved means, such as air curtains or insect repellent fans, are provided.

B. Add Section 1202.5.5 to the IBC to read:

1202.5.5 Insect screens in Group R occupancies. Every door, window, and other outside opening required for natural ventilation purposes that serves a structure classified as a residential group shall be supplied with approved tightly fitted screens of not less than 16 mesh per inch (16 mesh per 25 mm) and every screen door used for insect control shall have a self-closing device.

C. Add Section 1202.7 to the IBC to read:

1202.7 Smoking areas in restaurants. Smoking areas in restaurants, as defined in § 15.2-2820 of the Code of Virginia, shall comply with the following:

1. The area where smoking may be permitted shall be structurally separated from the portion of the restaurant in which smoking is prohibited. For the purposes of this section, structurally separated means a stud wall covered with drywall or other building material or like barrier, which, when completed, extends from the floor to the ceiling, resulting in a physically separated room. Such wall or barrier may include portions that are glass or other

gas-impervious building material and shall be permitted to have a door leading to areas in which smoking is prohibited, provided the door is capable of being closed at all times.

2. The area where smoking may be permitted shall be separately vented to prevent the recirculation of air from such area to the area of the restaurant where smoking is prohibited.

Exception: The requirements in Items 1 and 2 do not apply if a restaurant is exempt from or meets any of the exceptions to the Virginia Indoor Clean Air Act (Chapter 28.2 (§ 15.2-2820 et seq.) of Title 15.2 of the Code of Virginia).

D. Change Section 1206.1 of the IBC to read:

1206.1 Scope. Sections 1206.2 and 1206.3 shall apply to common interior walls, partitions, and floor or ceiling assemblies between adjacent dwelling units or between dwelling units and adjacent public areas, such as halls, corridors, stairs, or service areas. Section 1206.4 applies to the construction of the exterior envelope of Group R occupancies within airport noise zones and to the exterior envelope of Groups A, B, E, I, and M occupancies in any locality in whose jurisdiction or adjacent jurisdiction is located a United States Master Jet Base, a licensed airport, or United States government or military air facility when such requirements are enforced by a locality pursuant to § 15.2-2295 of the Code of Virginia.

E. Add Section 1206.4 to the IBC to read:

1206.4 Airport noise attenuation standards. Where the Ldn Day-Night Average Sound Level (Ldn) is determined to be 65 dBA or greater, the minimum Sound Transmission Class (STC) rating of structure components shall be provided in compliance with Table 1206.4. As an alternative to compliance with Table 1206.4, structures shall be permitted to be designed and constructed so as to limit the interior noise level to no greater than 45 Ldn. Exterior structures, terrain, and permanent plantings shall be permitted to be included as part of the alternative design. The alternative design shall be certified by an RDP.

F. Add Table 1206.4 to the IBC to read:

Table 1206.4 Airport Noise Attenuation Standards		
Ldn	STC of exterior walls and roof/ceiling assemblies	STC of doors and windows
65–69	39	25
70–74	44	33
75 or greater	49	38

G. Change Sections 1210.3.1 (exceptions remain) and 1210.3.2 and add Sections 1210.3.1.1, 1210.3.1.2, 1210.3.2.1, and 1210.3.2.2 to read:

1210.3.1 Water closet compartment. Each water closet utilized by the public or employees shall ~~comply with Sections 1210.3.1.1 and 1210.3.1.2, as applicable.~~ occupy a separate compartment with walls or partitions and a door enclosing the fixtures to ensure privacy. All fully-enclosed compartments shall be provided with occupancy indicators.

Exceptions:

- ~~1. A separate room or compartment shall not be required in a single-occupant toilet room with a lockable door.~~
- ~~2. Toilet rooms located in child day care facilities and containing two or more water closets shall be permitted to have one water closet without an enclosing compartment.~~
- ~~3. This provision is not applicable to toilet areas located within Group I-3 occupancy housing areas.~~

1210.3.1.1 Separate facilities. Each water closet provided in separate facilities shall occupy a separate compartment with walls or partitions and a door enclosing the fixtures to ensure privacy and shall comply with Section 405.3.1 of the VPC. Accessible water closets and compartments shall comply with ICC A117.1.

1210.3.1.2 Multi-user gender-neutral facilities. Each water closet provided in a multi-user gender-neutral toilet facility shall occupy a separate compartment with walls or partitions, including the doors thereto, that shall extend to the floor and to the ceiling with maximum 1/2-inch (13 mm) clearances at the floor and ceiling, with gaps not exceeding 1/8-inch (3 mm) between the doors and partitions and partitions and walls, and shall comply with Section 405.3.1 of the VPC. Accessible water closet compartments shall comply with ICC A117.1 and the increased toe clearance requirements.

1210.3.2 Urinal separation and partitions. Each urinal utilized by the public or employees shall occupy a separate area with walls or partitions to provide privacy and comply with Sections 1210.3.2.1 and 1210.3.2.2, as applicable. All fully-enclosed compartments shall be provided with occupancy indicators.

Exceptions:

1. Urinal partitions shall not be required in a single-occupant, family, or assisted-use toilet room with a lockable door.
2. Toilet rooms located in child day care facilities and containing two or more urinals shall be permitted to have one urinal without partitions.

3. A separate room or compartment shall not be required in a single-occupant toilet room with a lockable door.

4. This provision is not applicable to toilet areas located within Group I-3 occupancy housing areas.

1210.3.2.1 Separate facilities. The walls or partitions for urinals in separate facilities shall begin at a height not more than 12 inches (305 mm) from and extend not less than 60 inches (1524 mm) above the finished floor surface. The walls or partitions shall extend from the wall surface at each side of the urinal not less than 18 inches (457 mm) or to a point not less than six inches (152 mm) beyond the outermost front lip of the urinal measured from the finished backwall surface, whichever is greater.

1210.3.2.2 Multi-user gender-neutral facilities. Each urinal provided in a multi-user, gender-neutral toilet facility shall occupy a separate compartment with walls or partitions, including the doors thereto, where the partitions extend to the floor and to the ceiling with maximum 1/2-inch (13 mm) clearances, with gaps not exceeding 1/8-inch (3 mm) between the doors and partitions and partitions and walls, or shall all be located in a separate room with a door, enclosing the urinals to ensure privacy. Where an accessible urinal is located within a compartment, grab bars shall not be required for the urinal, the door shall be located to allow for a forward approach to the urinal, and increased toe clearances shall be provided in accordance with A117.1.

13VAC5-63-264. Chapter 13 Energy efficiency.

~~Add~~ Change Section 1301.1 of the IBC and add Section 1301.1.1.1 to the IBC to read:

1301.1. Scope and intent. The scope and intent of this chapter shall be as indicated in Chapter 1.

1301.1.1.1 Changes to the IECC. The following changes shall be made to the IECC:

1. Add Section C402.1.6 to read:

C402.1.6 Groups F, S, and U. Appendix CD may be used as an alternative to the building thermal envelope provisions of this code for Groups F, S, and U.

2. ~~Add an exception to the first paragraph of Section C403.7.7 to read:~~

~~Exception: Where a grease duct serving a Type I hood is installed in accordance with IMC Section 506.3, motorized or gravity dampers shall not be installed.~~

3. ~~Add Section C403.2.2.1 to read:~~

~~C403.2.2.1 Dwelling unit mechanical ventilation. Mechanical ventilation shall be provided for dwelling units in accordance with the IMC.~~

4. Delete Section C403.7.5 and Table C403.7.5.

3. Add an exception to the first paragraph of Section C403.7.7 to read:

Exception: Where a grease duct serving a Type I hood is installed in accordance with Section 506.3 of the IMC, motorized or gravity dampers shall not be installed.

~~5. 4.~~ Delete Sections C404.5 through C404.5.2.1, including Tables.

~~6.~~ Change Section C405.4 to read:

~~C405.4 Exterior lighting. All exterior lighting, other than low voltage landscape lighting, shall comply with Section C405.4.1.~~

~~Exception: Where approved because of historical, safety, signage, or emergency considerations.~~

~~7. 5.~~ Change item 5 of Section C409.5.1 of the IECC (items 1 through 4 remain) to read:

5. The code official shall be permitted to approve specific software deemed to meet these requirements in accordance with Section 112.

~~6.~~ Change Section C502.1 to read:

C502.1 General. Additions to an existing building, building system, or portion thereof shall conform to the provisions of Section 805 of the VEBC.

~~8. 7.~~ Delete Sections C502.2 through ~~C502.3.6.2.~~ C502.3.8.

~~9. 8.~~ Change Section C503.1 to read:

C503.1 General. Alterations to any building or structure shall comply with the requirements of Chapter 6 of the VEBC.

~~10. 9.~~ Delete Sections C503.2 through ~~C503.5.~~ C503.6.

~~11. 10~~ Change Section C504.1 to read:

C504.1 General. Buildings, structures, and parts thereof shall be repaired in compliance with Section ~~510~~ 507 of the VEBC.

~~12. 11.~~ Delete Section C504.2.

~~13. 12.~~ Add Change Appendix CD of the IECC to read:

APPENDIX CD BUILDING ENVELOPE REQUIREMENTS.

D101 Scope.

CD101.1 General. These provisions shall be permitted as an alternative to building thermal envelope requirements for building areas containing uses that are classified as Group F, S or U.

CD102 Building Envelope Requirements.

CD102.1 Insulation and fenestration criteria. The building thermal envelope shall meet the requirements of Tables CD102.2(1) and CD102.3 based on the climate zone specified in Chapter 3 CE. Buildings with a vertical fenestration area or skylight area that exceeds that allowed in Table CD102.3 shall comply with the building envelope provisions of ASHRAE/IESNA 90.1.

CD102.2 Specific insulation requirements. Opaque assemblies shall comply with Table CD102.2(1).

CD102.2.1 Roof assembly. The minimum thermal resistance (R-value) of the insulating material installed either between the roof framing or continuously on the roof assembly shall be as specified in Table CD102.2(1) based on construction materials used in the roof assembly.

Exception: Continuously insulated roof assemblies where the thickness of insulation varies one inch (25.4 mm) or less and where the area weighted U-factor is equivalent to the same assembly with the R-value specified in Table CD102.2(1).

Insulation installed on a suspended ceiling with removable ceiling tiles shall not be considered part of the minimum thermal resistance of the roof insulation.

CD102.2.2 Classification of walls. Walls associated with the building envelope shall be classified in accordance with Section CD102.2.2.1 or ~~CD102.2.2.2~~ CD102.2.2.2.

CD102.2.2.1 Above-grade walls. Above-grade walls are those walls covered by Section CD102.2.3 on the exterior of the building and completely above grade or walls that are more than ~~15 percent~~ 15% above grade.

CD102.2.2.2 Below-grade walls. Below-grade walls covered by Section CD102.2.4 are basement or first-story walls associated with the exterior of the building that are at least 85% below grade.

CD102.2.2.3 Above-grade walls. The minimum thermal resistance (R-value) of the insulating materials installed in the wall cavity between the framing members and continuously on the walls shall be as specified in Table CD102.2(1) based on framing type and construction materials used in the wall assembly. The R-value of integral insulation installed in concrete masonry units (CMU) shall not be used in determining compliance with Table CD102.2(1). "Mass walls" shall include walls weighing at least (i) 35 pounds per square foot (170 kg/m²) of wall surface area or (ii) 25 pounds per square foot (120 kg/m²) of wall surface area if the material weight is not more than 120 pounds per cubic foot (1,900 kg/m³).

CD102.2.4 Below-grade walls. The minimum thermal resistance (R-value) of the insulating material installed in or continuously on the below-grade walls shall be as specified in Table CD102.2(1) and shall extend to a depth of 10 feet † (3048 mm) below the outside finish ground level or to the level of the floor, whichever is less.

CD102.2.5 Floors over outdoor air or unconditioned space. The minimum thermal resistance (R-value) of the insulating material installed either between the floor framing or continuously on the floor assembly shall be as specified in Table CD102.2(1) based on construction materials used in the floor assembly.

"Mass floors" shall include floors weighing at least (i) 35 pounds per square foot (170 kg/m^2) of floor surface area or (ii) 25 pounds per square foot (120 kg/m^2) of floor surface area if the material weight is not more than 12 pounds per cubic foot ($1,900 \text{ kg/m}^3$).

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TABLE CD102.2(1) OPAQUE THERMAL ENVELOPE INSULATION COMPONENT MINIMUM REQUIREMENTS, R-VALUE ^a METHOD			
CLIMATE ZONE	3	4 EXCEPT MARINE	5 AND MARINE 4
Roofs			
Insulation entirely above roof deck	R-15ci	R-15ci	R-15ci
Metal buildings (with R-5 thermal blocks ^a) ^b	R-19	R-19	R-19
Attic and other	R-30	R-30	R-30
Walls, above grade			
Mass	R-5.7ci ^{c, e}	R-5.7ci ^c	R-7.6ci
Metal building ^b	R-13	R-13	R-13 + R-13
Metal framed	R-13	R-13	R-13 + R-3.8ci
Wood framed and other	R-13	R-13	R-13
Walls, below grade			
Below-grade wall ^d	NR	NR	NR
Floors			
Mass	R-5ci	R-10ci	R-10ci
Joist/framing	R-19	R-19	R-19
Slab-on-grade floors			
Unheated slabs	NR	NR	NR
Heated slabs	R-7.5 for 12" below	R-7.5 for 12" below	R-7.5 for 24" below
Opaque doors			
Swinging	U - 0.70	U - 0.70	U - 0.70
Roll-up or sliding	U - 1.45	U - 1.45	U - 1.45
For SI: 1 inch = 25.4 mm, 1 pound per square foot = 4.88 kg/m², 1 pound per cubic foot = 16 kg/m³. ci = Continuous Insulation, NR = No requirement a. Thermal blocks are a minimum R-5 of rigid insulation which extends 1-inch beyond the width of the purlin on each side, perpendicular to the purlin.			

b. Assembly description can be found in Table CD102.2(2).

c. R-5.7ci is allowed to be substituted with concrete block walls complying with ASTM C90, ungrouted or partially grouted at 32 inches or less on center vertically and 48 inches or less on center horizontally, with ungrouted cores filled with materials having a maximum thermal conductivity of 0.44 Btu-in/h- f^2 °F.

d. Where heated slabs are below grade, below-grade walls shall comply with the exterior insulation requirements for perimeter insulation according to the heated slab-on-grade construction.

e. Insulation is not required for mass walls in Climate Zone 3A located below the "Warm-Humid" line, and in Zone 3B.

CD102.2.6 Slabs on grade. The minimum thermal resistance (R-value) of the insulation around the perimeter of unheated or heated slab-on-grade floors shall be as specified in Table CD102.2(1). The insulation shall be placed on the outside of the foundation or on the inside of a foundation wall. The insulation shall extend downward from the top of the slab for a minimum distance as shown in the table or to the top of the footing, whichever is less, or downward to at least the bottom of the slab and then horizontally to the interior or exterior for the total distance shown in the table.

CD102.2.7 Opaque doors. Opaque doors (doors having less than 50% glass area) shall meet the applicable requirements for doors as specified in Table CD102.2(1) and be considered as part of the gross area of above-grade walls that are part of the building envelope.

TABLE CD102.2(2) METAL BUILDING ASSEMBLY DESCRIPTIONS		
ROOFS	DESCRIPTIONS	REFERENCE
R-19 + R-10	Filled cavity roof. Thermal blocks are a minimum, R-5 of rigid insulation, which extends 1 inch beyond the width of the purlin on each side, perpendicular to the purlin.	ASHRAE/IESNA 90.1-2004 Table A2.3
R-19	Standing seam with single insulation layer. Thermal blocks are a minimum R-5 of rigid insulation, which extends 1 inch beyond the width of the purlin on each side, perpendicular to the purlin. This construction R-19 insulation batts draped perpendicularly over the purlins. Thermal blocks are then placed above the purlin/batt, and the roof deck is secured to the purlins.	ASHRAE/IESNA 90.1-2004 Table A2.3
Walls		

R-13	Single insulation layer The first layer of R-13 insulation batts is installed continuously perpendicular to the girts and is compressed as the metal skin is attached to the girts.	ASHRAE/IESNA 90.1-2004 Table A3.2
R-13 + R-13	Double insulation layer The first layer of R-13 insulation batts is installed continuously perpendicular to the girts and is compressed as the metal skin is attached to the girts.	ASHRAE/IESNA 90.1-2004 Table A3.2
For SI: 1 inch = 25.4 mm.		

CD102.3 Fenestration. Fenestration shall comply with Table CD102.3.

CD102.3.1 Maximum area. The vertical fenestration area (not including opaque doors) shall not exceed the percentage of the gross wall area specified in Table CD102.3. The skylight area shall not exceed the percentage of the gross roof area specified in Table CD102.3.

CD102.3.2 Maximum U-factor and solar heat gain coefficient (SHGC). For vertical fenestration, the maximum U-factor and solar heat gain coefficient (SHGC) shall be as specified in Table CD102.3 based on the window projection factor. For skylights, the maximum U-factor and SHGC shall be as specified in Table CD102.3.

The window projection factor shall be determined in accordance with Equation CD-1.

$$PF = A/B \text{ (Equation CD-1)}$$

where:

PF = Projection factor (decimal).

A = Distance measured horizontally from the furthest continuous extremity of any overhang, eave, or permanently attached shading device to the vertical surface of the glazing.

B = Distance measured vertically from the bottom of the glazing to the underside of the overhang, eave, or permanently attached shading device.

Where different windows or glass doors have different PF values, they shall each be evaluated separately, or an area-weighted PF value shall be calculated and used for all windows and glass doors.

CD102.4 Air leakage.

CD102.4.1 Window and door assemblies. The air leakage of window and sliding or swinging door assemblies that are part of the building envelope shall be determined in accordance with AAMA/WDMA/CSA 101/I.S.2/A440, or NFRC 400 by an accredited, independent laboratory and

labeled and certified by the manufacturer and shall not exceed the values in Section C402.4.2 of the 2012 IECC.

Exception: Site-constructed windows and doors that are weatherstripped or sealed in accordance with Section CD102.4.3.

CD102.4.2 Curtain wall, storefront glazing, and commercial entrance doors. Curtain wall, storefront glazing, and commercial glazed swinging entrance doors and revolving doors shall be tested for air leakage at 1.57 pounds per square foot (psf) (75 Pa) in accordance with ASTM E 283. For curtain walls and storefront glazing, the maximum air leakage rate shall be 0.3 cubic foot per minute per square foot (cfm/ft²) (5.5 m³/h x m²) of fenestration area. For commercial glazed swinging entrance doors and revolving doors, the maximum air leakage shall be 1.00 cfm/ft² (18.3 m³/h x m²) of door area when tested in accordance with ASTM E 283.

CD102.4.3 Sealing of the building envelope. Openings and penetrations in the building envelope shall be sealed with caulking materials or closed with gasketing systems compatible with the construction materials and location. Joints and seams shall be sealed in the same manner or taped or covered with a moisture vapor-permeable wrapping material. Sealing materials spanning joints between construction materials shall allow for expansion and contraction of the construction materials.

CD102.4.4 Outdoor air intakes and exhaust openings. Stair and elevator shaft vents and other outdoor air intakes and exhaust openings integral to the building envelope shall be equipped with not less than a Class I motorized, leakage-rated damper with a maximum leakage rate of four cfm per square foot (6.8 L/s – C m²) at 1.0 inch water gauge (w.g.) (1250 Pa) when tested in accordance with AMCA 500D.

Exception: Gravity (nonmotorized) dampers are permitted to be used in buildings less than three stories in height above grade.

CD102.4.5 Loading dock weather seals. Cargo doors and loading dock doors shall be equipped with weather seals to restrict infiltration when vehicles are parked in the doorway.

CD102.4.6 Vestibules. A door that separates conditioned space from the exterior shall be protected with an enclosed vestibule, with all doors opening into and out of the vestibule equipped with self-closing devices. Vestibules shall be designed so that in passing through the vestibule it is not necessary for the interior and exterior doors to open at the same time.

Exceptions:

1. Buildings in Climate Zones I and 2 as indicated in Figure C301.1 and Table C301.1.
2. Doors not intended to be used as a building entrance door, such as doors to mechanical or electrical equipment rooms.
3. Doors opening directly from a sleeping unit or dwelling unit.

4. Doors that open directly from a space less than 3,000 square feet (298 m²) in area.

5. Revolving doors.

6. Doors used primarily to facilitate vehicular movement or material handling and adjacent personnel doors.

TABLE CD102.3 BUILDING ENVELOPE REQUIREMENTS: FENESTRATION			
CLIMATE ZONE	3	4 EXCEPT MARINE	5 AND MARINE 4
Vertical fenestration (40% maximum of above-grade wall)			
U-factor			
Framing materials other than metal with or without metal reinforcement or cladding			
U-factor	0.65	0.40	0.35
Metal framing with or without thermal break			
Curtain Wall/Storefront U-factor	0.60	0.50	0.45
Entrance Door U-factor	.90	.85	.80
All Other U-factor ^a	.65	.55	.55
SHGC-All frame types			
SHGC: PF < 0.25	.25	.40	.40
SHGC: 0.25 ≤ PF < 0.5	.33	NR	NR
SHGC ≥ 0.5	0.40	NR	NR
Skylights (3.0% maximum)			
Glass			
U-Factor	0.90	0.60	0.60
SHGC	0.40	0.40	0.40
Plastic			
U-Factor	1.30	1.30	1.30
SHGC	0.35	0.62	0.62

NR = No requirement

PF = Projection factor (See Section CD102.3.2).

a. All others includes operable windows, fixed windows, and nonentrance doors.

CD102.4.7 Recessed luminaires. When installed in the building envelope, recessed luminaires shall meet one of the following requirements:

1. Type IC rated, manufactured with no penetrations between the inside of the recessed fixture and ceiling cavity and sealed or gasketed to prevent air leakage into the unconditioned space.
2. Type IC or non-IC rated, installed inside a sealed box constructed from a minimum 0.5-inch-thick (12.7 mm) gypsum wallboard or constructed from a preformed polymeric vapor barrier or other air-tight assembly manufactured for this purpose, while maintaining required clearances of not less than 0.5 inch (12.7 mm) from combustible material and not less than three inches (76 mm) from insulation material.
3. Type IC rated, in accordance with ASTM E 283 admitting no more than 2.0 cubic feet per minute (cfm) (0.944 L/s) of air movement from the conditioned space to the ceiling cavity. The luminaire shall be tested at 1.57 psf (75 Pa) pressure difference and shall be labeled.

CD102.5 Moisture control. All framed walls, floors, and ceilings not ventilated to allow moisture to escape shall be provided with an approved vapor retarder having a permeance rating of one perm (5.7×10^{-11} kg/Pa · s · m²) or less when tested in accordance with the dessicant method using Procedure A of ASTM E 96. The vapor retarder shall be installed on the warm-in-winter side of the insulation.

Exceptions:

1. Buildings located in Climate Zones 1 through 3 as indicated in Figure C301.1 and Table C301.1.
2. In construction where moisture or its freezing will not damage the materials.
3. Where other approved means to avoid condensation in unventilated framed wall, floor, roof, and ceiling cavities are provided.

~~14.~~ 13. Add an exception to Section R401.3 to read:

Exception: Where approved, certificates for multi-family dwelling units shall be permitted to be located off-site at an identified location.

~~15.~~ 14. Change the ~~wood frame~~ wood-framed wall ~~R-value~~ U-factor categories for Climate Zones 3A, 4A, and 5A in Table ~~R402.1.3~~ R402.1.2 to read:

Wood Frame Wall R-Value

15 or 13+1^h

Table R402.1.2 Maximum Assembly U-Factors ^a and Fenestration Requirements			
Climate Zone	<u>3</u>	<u>4 Except Marine</u>	<u>5 and Marine 4</u>
Wood-Framed Wall	<u>0.079</u>	<u>0.079</u>	<u>0.079</u>
U-Factor			

~~16.~~ 15. Change the ~~frame~~ wood-framed wall U-factor R-value categories for Climate Zones 3A, 4A, and 5A in Table ~~R402.1.2~~ R402.1.3 to read:

Frame Wall U Factor

0.079

Table R402.1.3 Insulation Minimum R-Values and Fenestration Requirements by Component ^a			
Climate Zone	<u>3</u>	<u>4 Except Marine</u>	<u>5 and Marine 4</u>
Wood-Framed Wall	<u>15 or 13+1</u>	<u>15 or 13+1</u>	<u>15 or 13+1</u>
R-Value ^e			

~~17.~~ 16. Change Section ~~R402.2.4~~ R402.2.5 to read:

~~R402.2.4~~ R402.2.5 Access hatches and doors. Access doors from conditioned spaces to unconditioned spaces (e.g., attics and crawl spaces) shall be weatherstripped and insulated in accordance with the following values:

1. Hinged vertical doors shall have a minimum overall R-5 insulation value;
2. Hatches and scuttle hole covers shall be insulated to a level equivalent to the insulation on the surrounding surfaces; and
3. Pull down stairs shall have a minimum of 75% of the panel area having R-5 rigid insulation.

Access shall be provided to all equipment that prevents damaging or compressing the insulation. A wood framed or equivalent baffle or retainer is required to be provided when loose fill insulation is installed, the purpose of which is to prevent the loose fill insulation from spilling into the living space when the attic access is opened and to provide a permanent means of maintaining the installed R-value of the loose fill insulation.

18. Change the title of the "Insulation Installation Criteria" category of Table R402.4.1.1; change the "Shower/tub on exterior wall" category of Table R402.4.1.1, and add footnotes "c" and "d" to Table R402.4.1.1 to read:

Component	Air Barrier Criteria	Insulation Installation Criteria ^d
Shower/tub on exterior wall ^c	The air barrier installed at exterior walls adjacent to showers and tubs shall be installed on the interior side and separate the exterior walls from the showers and tubs.	Exterior walls adjacent to showers and tubs shall be insulated.
c. Air barriers used behind showers and tubs on exterior walls shall be of a permeable material that does not cause the entrapment of moisture in the stud cavity. d. Structural integrity of headers shall be in accordance with the applicable building code.		

19. ~~17.~~ Change Section R402.4.1.2 R402.5.1.2 to read (exception and During testing: items 1 through 6 ~~remains~~): remain):

R402.4.1.2 R402.5.1.2 Testing. The building or dwelling unit shall be tested ~~and verified as having an for air leakage rate not exceeding five air changes per hour in Climate Zone 4.~~ leakage. Testing shall be conducted in accordance with RESNET/ICC 380, ASTM E 779, ~~or ASTM E 1827~~ ASTM E1827 or ASTM E3158 and reported at a pressure differential of 0.2 inch w.g. (50 Pascals). A written report of the results of the test shall be signed by the party conducting the test and provided to the building official. Testing shall be conducted by a Virginia licensed general contractor, a Virginia licensed HVAC contractor, a Virginia licensed home inspector, a Virginia registered design professional, a certified BPI Envelope Professional, a certified HERS rater, or a certified duct and envelope tightness rater. The party conducting the test shall have been trained on the equipment used to perform the test. Testing shall be performed at any time after creation of all penetrations of the building thermal ~~envelope.~~ envelope have been sealed.

Note: Should additional sealing be required as a result of the test, consideration may be given to the issuance of a temporary certificate of occupancy in accordance with Section 116.1.1.

~~During testing:~~

- ~~1. Exterior windows and doors and fireplace and stove doors shall be closed, but not sealed beyond the intended weatherstripping or other infiltration control measures;~~
 - ~~2. Dampers, including exhaust, intake, makeup air, backdraft, and flue dampers, shall be closed, but not sealed beyond intended infiltration control measures;~~
 - ~~3. Interior doors, if installed at the time of the test, shall be open;~~
 - ~~4. Exterior doors for continuous ventilation systems and heat recovery ventilators shall be closed and sealed;~~
 - ~~5. Heating and cooling systems, if installed at the time of the test, shall be turned off; and~~
 - ~~6. Supply and return registers, if installed at the time of the test, shall be fully open.~~
- ~~20.~~ 18. Change the maximum allowed air changes per hour to 5.0 for Climate Zones 3, 4, and 5, in Section R402.4.1.3 to read: R402.5.1.3 of the IECC.
- ~~R402.4.1.3 Leakage rate: When complying with Section R401.2.1, the building or dwelling unit shall have an air leakage rate not exceeding 5.0 air changes per hour in Climate Zones 3 through 5 when tested in accordance with Section R402.4.1.2.~~
- ~~21.~~ 19. Add Change Section R403.1.2 of the IECC and add Section R403.1.3 to the IECC to read:
- R403.1.2 Heat pump supplementary heat. Heat pumps having supplementary electric-resistance, fuel gas or liquid fuel heating systems shall have controls that are configured so that, except during defrost or emergency heating modes, supplemental heating does not energize unless the outdoor temperature is below 40°F (4°C).
- R403.1.3 Heat pump as primary space heat source. Electric resistance heat shall not be used as the primary heat source for electric space heating if a ducted or ductless heat pump can be installed. Electric resistance space heating may be used for defrost, supplemental, or emergency heat. A heat pump shall be designed so that, except during defrost or emergency heating modes, supplemental heating does not energize unless the outdoor temperature is below 40°F (4°C).
20. Change Section R403.3.2 to read:
- R403.3.2 Building cavities. Building framing cavities used as ducts or plenums shall comply with VRC Section M1601.1.1, M1601.1.1 of the VRC.
- ~~22.~~ 21. Change the last Add the following paragraph to the end of Section R403.3.5 R403.3.7 after exceptions to read:
- ~~A written report of the test results shall be signed by the party conducting the test and provided to the code official. The licensed mechanical contractor installing the mechanical system shall be permitted to perform the duct testing. The contractor shall have been trained on the equipment used to perform the test.~~
23. Change Section R403.3.7 to read:

~~(R403.3.7) Building cavities. Building framing cavities used as ducts or plenums shall comply with VRC Section M1601.1.1.~~

24. ~~22.~~ Change ~~Delete Section R403.7.1 of the IECC and change~~ Section R403.7 of the IECC to read:

R403.7 Equipment and appliance sizing. Heating and cooling equipment and appliances shall be sized in accordance with ACCA Manual S or other approved sizing methodologies based on building loads calculated in accordance with ACCA Manual J or other approved heating and cooling calculation methodologies.

Exception: Heating and cooling equipment and appliance sizing shall not be limited to the capacities determined in accordance with Manual S or other approved sizing methodologies where any of the following conditions apply:

1. The specified equipment or appliance utilizes multi-stage technology or variable refrigerant flow technology and the loads calculated in accordance with the approved heating and cooling methodology fall within the range of the manufacturer's published capacities for that equipment or appliance.
2. The specified equipment or appliance manufacturer's published capacities cannot satisfy both the total and sensible heat gains calculated in accordance with the approved heating and cooling methodology and the next larger standard size unit is specified.
3. The specified equipment or appliance is the lowest capacity unit available from the specified manufacturer.

25. ~~Change~~ Section R406.3.2 to read:

~~Section N1106.3.2 (R406.3.2) Onsite renewables are included. When onsite renewable energy is included for compliance using the Energy Rating Index (ERI) analysis per Section N1106.4 (R406.4), the building thermal envelope shall be greater than or equal to levels of energy efficiency and solar heat gain coefficient in Table N1102.1.2 (R402.1.2), with a ceiling U-factor of 0.026 and a frame wall U-factor of 0.060, or Table N1102.1.3 (R402.1.3), with a ceiling R-value of 49 and a wood frame wall R-value of 20 or 13+5.~~

26. ~~23.~~ Change Section R501.1 to read:

R501.1 Scope. The provisions of the Virginia Existing Building Code shall control the alteration, repair, addition, and change of occupancy of existing buildings and structures.

~~27.~~ ~~24.~~ Delete Sections R501.1.1 through R501.6.

~~28.~~ ~~25.~~ Change Section R502.1 to read:

R502.1 General. Additions to an existing building, building system, or portion thereof shall conform to the provisions of Section 805 of the VEBC.

~~29.~~ 26. Delete Sections R502.2 through ~~R502.3.4.~~ R502.2.5.

~~30.~~ 27. Change Section R503.1 to read:

R503.1 General. Alterations to any building or structure shall comply with the requirements of Chapter 6 of the VEBC.

~~31.~~ 28. Delete Sections R503.1.1 through ~~R503.1.4.~~ R503.1.5.

~~32.~~ 29. Change Section R504.1 to read:

R504.1 General. Buildings, structures, and parts thereof shall be repaired in compliance with Section 507 of the VEBC.

~~33.~~ 30. Delete Section R504.2.

13VAC5-63-267. Chapter 14 Exterior walls.

A. Delete ~~Section 1402.5~~ Sections 1402.5.1 and 1402.6 of the IBC.

B. Add Section ~~1402.8~~ 1402.11 to the IBC to read:

1402.8 1402.11 Air barriers. The exterior wall envelope shall be designed and constructed by providing air barriers that comply with the IECC.

C. Change Section 1406.10.3 of the IBC to read:

1406.10.3 Full-scale test. The metal composite material (MCM) system shall be tested in accordance with and comply with the acceptance criteria of NFPA 285. Such testing shall be performed on the MCM system with the MCM in the maximum thickness intended for use. Where noncombustible materials or combustible materials permitted by Section 603, 803, 806, or 1406 differ from assembly to assembly or within an assembly, multiple tests shall not be required.

Exception: The MCM system is not required to be tested in accordance with, and comply with, acceptance criteria of NFPA 285 in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.

13VAC5-63-268. Chapter 15 Roof assemblies and rooftop structures.

A. Change the title of IBC Section 1512 to read:

Roofing and Roofing Repair.

B. Change Section 1512.1 of the IBC to read as follows and delete the remainder of Section 1512 of the IBC:

1512.1 General. Materials and methods of application used for reroofing and roof repair shall comply with the applicable requirements of Chapter 15 and the requirements of Sections 302.1, 501.1, and 602.3.2 of the VEBC, as applicable.

13VAC5-63-270. Chapter 16 Structural design.

A. Add the following notation to the list of notations in Section 1602.1 (all other notations remain):

V_T = Tornado speed, miles per hour (mph) (m/s) determined from Chapter 32 of ASCE 7.

B. Change Section 1603.1.4 of the IBC to read:

1603.1.4 Wind and tornado design data. The following information related to wind loads and, where required by Section 1609.5 tornado loads, shall be shown regardless of whether wind loads govern the design of the lateral force-resisting system of the structure:

1. Basic wind speed, V (mph), tornado speed, V_T , and allowable stress design wind speed, V_{asd} , as determined in accordance with Section 1609.3.1.
2. Risk category.
3. Effective plan area, A_e for tornado design in accordance with Chapter 32 of ASCE 7.
4. Wind exposure. Applicable wind direction if more than one wind exposure is utilized.
5. Applicable internal pressure coefficients and applicable tornado internal pressure coefficients.
6. Design wind pressures and their applicable zones with dimensions to be used for exterior component and cladding materials not specifically designed by the registered design professional responsible for the design of the structure, pounds per square foot (kN/m^2). Where design for tornado loads is required, the design pressures shown shall be the maximum of wind or tornado pressures.

C. Add Exception 4 to Section 1605.1 of the IBC to read:

4. Where design for tornado loads is required, the alternative allowable stress design load combinations of Section 1605.2 shall not apply when tornado loads govern the design.

D. Change Sections 1607.14 and 1607.14.3 of the IBC to read:

1607.14 Roof loads. The structural supports of roofs and marquees shall be designed to resist wind and, where applicable, tornado, snow, and earthquake loads, in addition to the dead load of construction and the appropriate live loads as prescribed in this section or as set forth in Table 1607.1. The live loads acting on a sloping surface shall be assumed to act vertically on the horizontal projection of that surface.

1607.14.3 Awnings and canopies. Awnings and canopies shall be designed for uniform live loads as required in Table 1607.1 as well as for snow loads and wind and tornado loads as specified in Sections 1608 and 1609.

E. B. Change Section 1607.8.5 of the IBC to read:

1607.8.5 Posting. The maximum weight of vehicles allowed into or on a garage or other structure shall be conspicuously posted by the owner or the owner's authorized agent in that

part of each story in which they apply, using durable signs. It shall be unlawful to remove or deface such notices.

C. Change Section 1609.3 of the IBC to read:

1609.3 Basic wind speed. The basic ~~design~~ wind speed, V, in miles per hour (mph), for the determination of the wind loads shall be determined by Figures ~~1609.3(1), 1609.3(2), 1609.3(3), and 1609.3(4).~~ Figures 1609.3(1) through 1609.3(4). The basic ~~design~~ wind speed, V, for use in the design of Risk Category ~~II~~ I buildings and structures shall be obtained from Figure 1609.3(1). The basic ~~design~~ wind speed, V, for use in the design of Risk ~~Categories III and IV~~ Category II buildings and structures shall be obtained from ~~Figures 1609.3(2) and 1609.3(3), respectively.~~ Figure 1609.3(2). The basic ~~design~~ wind speed, V, for use in the design of Risk Category ~~I~~ III buildings and structures shall be obtained from Figure ~~1609.3(4).~~ 1609.3(3). The basic wind speed, V, for use in the design of Risk Category IV buildings and structures shall be obtained from Figure 1609.3(4). The basic design wind speeds for localities in special wind regions, near mountainous terrains, and near gorges shall be based on elevation. Areas at 4,000 feet in elevation or higher shall use $142 V \text{ mph } (\pm 62.3 \text{ m/s})$ (62.3 m/s) and areas lower than 4,000 feet in elevation shall use $116 V \text{ mph } (\pm 52 \text{ m/s})$. (52 m/s) . Gorge areas shall be based on the highest recorded speed per locality or in accordance with local jurisdiction requirements determined in accordance with ~~Section 26.5.1~~ Chapter 26 of ASCE 7.

In nonhurricane-prone regions, when the basic ~~design~~ wind speed, V, is estimated from regional climatic data, the basic design wind speed, V, shall be determined in accordance with ~~Section 26.5.3~~ Chapter 26 of ASCE 7.

F. Delete Sections 1609.5.1, 1609.5.2, and 1609.5.3 and change Section 1609.5 of the IBC to read:

~~1609.5 Tornado loads. The design and construction of Risk Category III and IV buildings and other structures located in the tornado-prone region as shown in Figure 1609.5 shall be in accordance with Chapter 32 of ASCE 7, except as modified by this code.~~

G. Add Figure 1609.5 Tornado-Prone Region to the IBC.

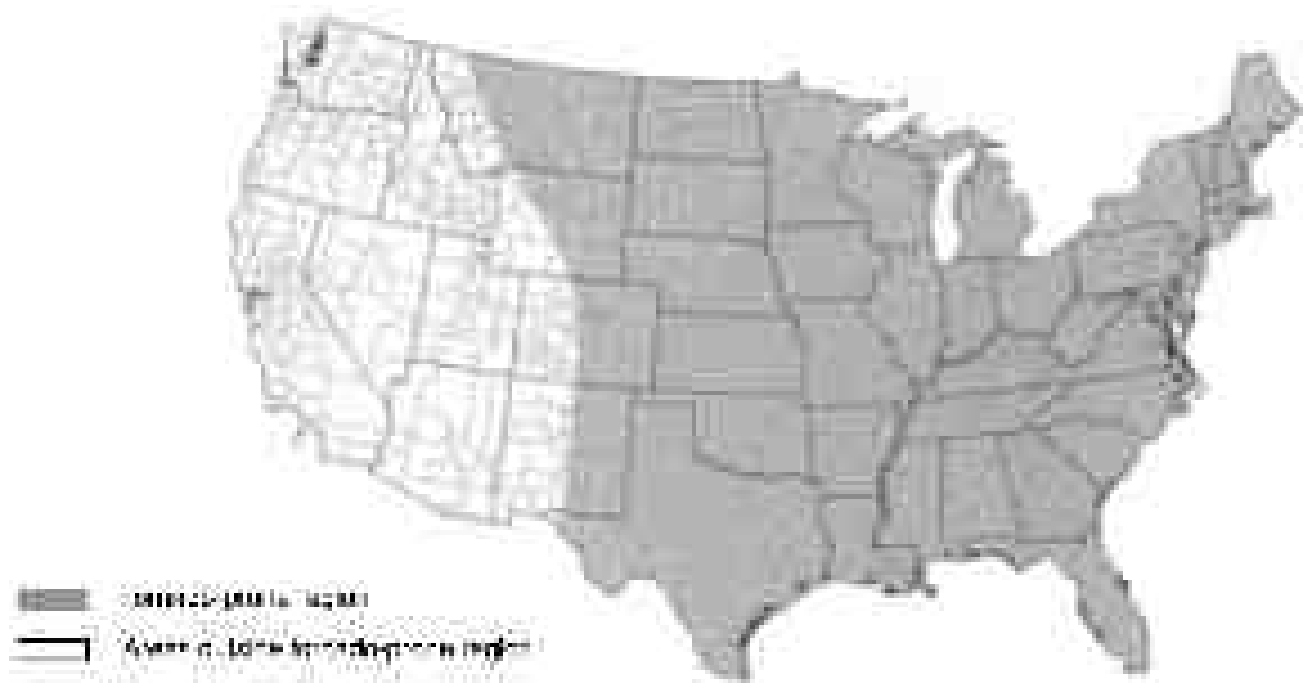


FIGURE 1609.5 TORNADO-PRONE REGION

H. Add Sections 1609.6, 1609.6.1, 1609.6.2, 1609.6.3, 1609.6.3.1, and 1609.6.3.2 to the IBC to read:

1609.6 Roof systems. Roof systems shall be designed and constructed in accordance with Sections 1609.6.1 through 1609.6.3, as applicable.

1609.6.1 Roof deck. The roof deck shall be designed to withstand the greater of wind pressures or tornado pressures determined in accordance with ASCE 7.

1609.6.2 Roof coverings. Roof coverings shall comply with Section 1609.6.1.

Exception: Rigid tile roof coverings that are air permeable and installed over a roof deck complying with Section 1609.6.1 are permitted to be designed in accordance with Section 1609.6.3.

Asphalt shingles installed over a roof deck complying with Section 1609.6.1 shall comply with the wind-resistance requirements of Section 1504.2.

1609.6.3 Rigid tile. Wind and tornado loads on rigid tiles shall comply with Section 1609.6.3.1 or 1609.6.3.2, as applicable.

1609.6.3.1 Wind loads. Wind loads on rigid tile roof coverings shall be determined in accordance with the following equation:

$$M_a = q_h C_L b L L_a [1.0 - G C_p] \quad (\text{Equation 16-18})$$

For SI:

$$M_a = \frac{q_h C_L b L L_a [1.0 - GC_p]}{1,000}$$

where:

b = Exposed width, feet (mm) of the roof tile.

C_L = Lift coefficient. The lift coefficient for concrete and clay tile shall be 0.2 or shall be determined by test in accordance with Section 1504.3.1.

GC_p = Roof pressure coefficient for each applicable roof zone determined from Chapter 30 of ASCE 7. Roof coefficients shall not be adjusted for internal pressure.

L = Length, feet (mm) of the roof tile.

L_a = Moment arm, feet (mm) from the axis of rotation to the point of uplift on the roof tile. The point of uplift shall be taken at 0.76L from the head of the tile and the middle of the exposed width. For roof tiles with nails or screws (with or without a tail clip), the axis of rotation shall be taken as the head of the tile for direct deck application or as the top edge of the batten for battened applications. For roof tiles fastened only by a nail or screw along the side of the tile, the axis of rotation shall be determined by testing. For roof tiles installed with battens and fastened only by a clip near the tail of the tile, the moment arm shall be determined about the top edge of the batten with consideration given for the point of rotation of the tiles based on straight bond or broken bond and the tile profile.

M_a = Aerodynamic uplift moment, feet-pounds (N-mm) acting to raise the tail of the tile.

q_h = Wind velocity pressure, psf (kN/m²) determined from Section 26.10.2 of ASCE 7.

Concrete and clay roof tiles complying with the following limitations shall be designed to withstand the aerodynamic uplift moment as determined by this section.

1. The roof tiles shall be either loose laid on battens, mechanically fastened, mortar set, or adhesive set.
2. The roof tiles shall be installed on solid sheathing that has been designed as components and cladding.
3. An underlayment shall be installed in accordance with Chapter 15.
4. The tile shall be single lapped interlocking with a minimum head lap of not less than two inches (51 mm).
5. The length of the tile shall be between 1.0 and 1.75 feet (305 mm and 533 mm).
6. The exposed width of the tile shall be between 0.67 and 1.25 feet (204 mm and 381 mm).
7. The maximum thickness of the tail of the tile shall not exceed 1.3 inches (33 mm).

~~8. Roof tiles using mortar set or adhesive set systems shall have not less than two-thirds of the tile's area free of mortar or adhesive contact.~~

~~1609.6.3.2 Tornado loads. Tornado loads on rigid tile roof coverings shall be determined in accordance with Section 1609.6.3.1, replacing q_h with q_{ht} and (GC_p) with $K_{vt}(GC_p)$ in Equation 16-18, where:~~

~~q_{ht} = tornado velocity pressure, psf (kN/m^2) determined in accordance with Section 32.10 of ASCE 7.~~

~~K_{vt} = tornado pressure coefficient adjustment factor for vertical winds, determined in accordance with Section 32.14 of ASCE 7.~~

~~I. D. Add Section 1612.1.1 to the IBC to read:~~

~~1612.1.1 Elevation of manufactured homes. New or replacement manufactured homes to be located in any flood hazard zone shall be placed in accordance with the applicable elevation requirements of this code.~~

~~Exception: Manufactured homes installed on sites in an existing manufactured home park or subdivision shall be permitted to be placed so that the manufactured home chassis is supported by reinforced piers or other foundation elements of at least equivalent strength that are no less than 36 inches (914 mm) above grade in lieu of being elevated at or above the base flood elevation, provided no manufactured home at the same site has sustained flood damage exceeding 50% of the market value of the home before the damage occurred.~~

~~J. E. Change Items ~~1.1~~ and 1.1, 1.4, and 2.1 of Section 1612.4 of the IBC to read:~~

~~1.1. The elevation of the lowest floor, including the basement, as required by the lowest floor elevation inspection in Section 113.3.2 and for the final inspection in Section 113.3.3.~~

~~1.4. For dry floodproofed nonresidential buildings, the elevation to which the building is dry floodproofed as required for the final inspection in Section 113.3.3.~~

~~2.1. The elevation of the bottom of the lowest horizontal structural member as required by the lowest floor elevation inspection in Section 113.3.2 and for the final inspection in Section 113.3.3.~~

13VAC5-63-280. Chapter 17 Special inspections and tests.

A. Change Section 1703.1 of the IBC to read:

1703.1 Approved agency. An approved agency responsible for laboratory testing, special inspections, or both must comply with the qualification, certification and experience requirements of ASTM E329 or the alternatives listed in this section.

B. Change Section 1703.1.1 of the IBC to read:

1703.1.1 Independence. An approved agency shall be objective and competent. The agency shall also disclose possible conflicts of interest so that objectivity can be confirmed. The special inspector and the special inspector's agents shall be independent from the person or contractor responsible for the physical construction of the project requiring special inspections.

C. Change Section 1703.1.3 of the IBC to read:

1703.1.3 Personnel. An approved agency shall employ experienced personnel educated in conducting, supervising, and evaluating tests, inspections, or both. Upon request by the building official, documentation shall be provided demonstrating the applicable agency's accreditation as noted in ASTM E329 and individuals' resumes indicating pertinent training, certifications, and other qualifications for special inspection personnel associated with the proposed construction requiring special inspections. The building official may prescribe the manner of qualification documentation and frequency of updating information regarding agency or individual inspector approval.

Firms providing special inspection services or individual inspectors seeking approval of alternative certifications, qualifications, or both listed in ASTM E329 may submit documentation demonstrating equivalency. This documentation may include evidence of meeting other recognized standards or alternative certifications to demonstrate that the minimum qualifications, certification, and experience intended by ASTM E329 have been met. The building official may, if satisfied that equivalency has been demonstrated, approve the credentials of the firm or individual.

D. Change Section 1704.2 of the IBC to read:

1704.2 Special inspections. Where application is made for construction as described in this section, the owner shall employ one or more special inspectors to provide inspections and tests during construction on the types of work listed under Section 1705. All individuals or agents performing special inspection functions shall operate under the direct supervision of a registered design professional (RDP) in responsible charge of special inspection activities, also known as the "special inspector." The special inspector shall ensure that the individuals under the special inspector's charge are performing only those special inspections or laboratory testing that are consistent with the individual's knowledge, training, and certification for the specified inspection or laboratory testing.

Exceptions:

1. The building official shall be permitted to waive special inspections and tests.
2. Special inspections and tests are not required for:
 - 2.1. One story buildings under 20 feet (6096 mm) in height that do not exceed 5,000 square feet (465 m²) in building area; or

2.2. Alterations to Group U structures that do not increase loads in accordance with Sections 603.7.3 and 603.7.4 of the VEBC.

3. Unless otherwise required by the building official, special inspections and tests are not required for occupancies in Group R-3, R-4, or R-5 and occupancies in Group U that are accessory to a residential occupancy including those listed in Section 312.1.

4. Special inspections and tests are not required for portions of structures designed and constructed in accordance with the cold-formed steel light-frame construction provisions of Section ~~2211.1.2~~ 2206.1.1.2 or the conventional light-frame construction provisions of Section 2308.

5. The contractor is permitted to employ the approved agencies where the contractor is also the owner.

E. Change Section 1704.2.3 of the IBC to read:

1704.2.3 Statement of special inspections. The permit applicant shall submit a statement of special inspections prepared by the RDP in responsible charge in accordance with Section 111.1. This statement shall be in accordance with Section 1704.3.

Exception: The statement of special inspections is permitted to be prepared by a qualified person approved by the building official for construction not designed by a registered design professional.

F. Change Section 1704.6 of the IBC to read:

Where required by the provisions of Section 1704.6.1, the owner or the owner's authorized agent shall employ a registered design professional to perform structural observations. The structural observer shall visually observe representative locations of structural systems, details and load paths for general conformance to the approved construction documents. Structural observation does not include or waive the responsibility for the inspections in Section 113 or the special inspections in Section 1705 or other sections of this code. Prior to the commencement of observations, the structural observer shall submit to the building official a written statement identifying the frequency and extent of structural observations. At the conclusion of the work included in the permit, the structural observer shall submit to the building official a written statement that the site visits have been made and identify any reported deficiencies that, to the best of the structural observer's knowledge, have not been resolved.

G. Change category "14" of Table 1705.3 of the IBC to read:

Type	Continuous Special Inspection	Periodic Special Inspection	Referenced Standard ^a	IBC Reference

14. Inspect formwork for shape, location and dimensions of the concrete member being formed, shoring and reshoring.	--	X	ACI 318: 26.11.1.2(b)	--

~~G. H.~~ Delete Sections 1705.18, 1705.18.1, and 1705.18.2 of the IBC.

I. Change Section 1707.1 of the IBC to read:

1707.1 General. In the absence of approved rules or other approved standards, the building official shall make, or cause to be made, the necessary tests and investigations; or the building official shall accept duly authenticated reports from approved agencies in respect to the quality and manner of use of new materials or assemblies as provided for in Section 112.2. The cost of all tests and other investigations required under the provisions of this code shall be borne by the owner or the owner's authorized agent.

13VAC5-63-290. Chapter 18 Soils and foundations.

A. Change the exception to Section 1804.6 of the IBC to read:

Exception: Compacted fill material less than 12 inches (305 mm) in depth need not comply with an approved report, provided it is a natural non-organic material that is not susceptible to swelling when exposed to moisture and it has been compacted to a minimum of 90% Modified Proctor in accordance with ASTM D1557. The compaction shall be verified by a qualified inspector approved by the building official. Material other than natural material may be used as fill material when accompanied by a certification from an RDP and approved by the building official.

B. Add an exception to Section 1808.1 of the IBC to read:

Exception: One-story detached accessory structures not exceeding 256 square feet (23.78m²) of building area, provided all of the following conditions are met:

1. The building eave height is 10 feet (3048 mm) or less.
2. The maximum height from the finished floor level to grade does not exceed 18 inches (457.2 mm).
3. The supporting structural elements in direct contact with the ground shall be placed level on firm soil and when such elements are wood they shall be approved pressure preservative treated suitable for ground contact use.
4. The structure is anchored to withstand wind loads as required by this code.
5. The structure shall be of light-frame construction with walls and roof of light weight material, not slate, tile, brick or masonry.

C. Change Section 1810.3.10.4 of the IBC to read:

1810.3.10.4 Seismic reinforcement. For structures assigned to Seismic Design Category C, a permanent steel casing shall be provided from the top of the micropile down to the point of zero curvature. For structures assigned to Seismic Design Category D, E or F, the micropile shall be considered as an alternative system in accordance with Section 112.2. The alternative system design, supporting documentation and test data shall be submitted to the building official for review and approval.

13VAC5-63-295. Chapter 23 Wood.

A. Change Section 2303.4.6 to read:

2303.4.6 TPI 1 specifications. In addition to Sections 2303.4.1 through 2303.4.5, the design, manufacture and quality assurance of metal-plate-connected wood trusses shall be in accordance with TPI 1. Job-site inspections shall be in compliance with Section 113, as applicable.

B. Change footnote "g" of Table 2304.10.2 of the IBC to read:

g. Nails and staples are carbon steel meeting the specifications of ASTM F1667. Connections using nails and staples of other materials, such as stainless steel, shall be designed by acceptable engineering practice or approved under Section 112.2.

C. Add Change Exception 2 to Item 2 of Section 2308.2.3 of the IBC to read:

2- Concrete slab-on-grade live load limited only by allowable soil bearing pressure.

B. Add Exception 4 to Section 2308.2.3 of the IBC to read:

4. Where design for tornado loads is required, tornado loads on the main wind force resisting system and all components and cladding shall not exceed the corresponding wind loads on these same elements.

13VAC5-63-296. Chapter 24 Glass and Glazing.

Change item 2 of Section 2409.1 of the IBC to read:

2. Load requirements specified in Chapter 16 and approval in accordance with the provisions of Section 112.2.

13VAC5-63-297. Gypsum Panel Products and Plaster

Change Section 2503.1 of the IBC to read:

2503.1 Inspection. Lath and gypsum panel products shall be inspected in accordance with Section 113.

13VAC5-63-298. Chapter 26 Plastic.

Change Section 2603.5.5 of the IBC to read:

2603.5.5 Vertical and lateral fire propagation. Exterior wall assemblies shall be tested in accordance with, and comply with, acceptance criteria of NFPA 285. Where noncombustible

materials or combustible materials permitted by Section 603, 803, 806 or 1405 differ from assembly to assembly or within an assembly, multiple tests shall not be required.

Exceptions:

1. One-story buildings where the exterior wall covering is noncombustible.
2. Wall assemblies where the foam plastic insulation is covered on each face by not less than 1-inch (25 mm) thickness of masonry or concrete and meeting one of the following:
 - 2.1. There is no air space between the insulation and the concrete or masonry.
 - 2.2. The insulation has a flame spread index of not more than 25 as determined in accordance with ASTM E 84 or UL 723 and the maximum air space between the insulation and the concrete or masonry is not more than 1 inch (25 mm).
3. Buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.

13VAC5-63-300. Chapter 27 Electrical.

A. Change Section 2701.1 of the IBC to read:

2701.1 Scope. This chapter governs the electrical components, equipment, and systems used in buildings and structures covered by this code. Electrical components, equipment, and systems shall be designed and constructed in accordance with the provisions of this code and NFPA 70.

B. Add Section 2701.1.1 to the IBC to read:

2701.1.1 Changes to NFPA 70. The following changes shall be made to NFPA 70:

1. Change Sections 334.10(2) and 334.10(3) of NFPA 70 to read:

(2) Multifamily dwellings not exceeding four floors above ~~grade~~ grade, and multifamily dwellings of any height permitted to be of Types III, IV, and V construction and their detached garages, except in any case as prohibited in 334.12.

(3) Other structures not exceeding four floors above grade and other structures of any height permitted to be of Types III, IV, and V construction except in any case as prohibited in 334.12. In structures exceeding four floors above grade, cables shall be concealed within walls, floors, or ceilings that provide a thermal barrier of material that has at least a 15-minute finish rating as identified in listings of fire-rated assemblies.

For the purpose of Items 2 and 3, the first floor of a building shall be that floor that has 50% or more of the exterior wall surface area level with or above finished grade. One additional level that is the first level and not designed for human habitation and used only for vehicle parking, storage, or similar use shall be permitted.

2. Change Section ~~700.12(F)(2)(6)~~ 700.12(I)(2)(6) of NFPA 70 to read:

(6) Where the normal power branch circuits that supply luminaires providing illumination immediately on the inside and outside of exit doors are supplied by the same service or feeder, the remote heads providing emergency illumination for the exterior of an exit door shall be permitted to be supplied by the unit equipment serving the area immediately inside the exit door.

3. Delete Section 210.8(F) in its entirety.

C. Add Section 2701.1.2 to the IBC to read:

2701.1.2 Temporary connection to dwelling units. The building official shall give permission to energize the electrical service equipment of a one-family or two-family dwelling unit when all of the following requirements have been approved:

1. The service wiring and equipment, including the meter socket enclosure, shall be installed and the service wiring terminated.
2. The grounding electrode system shall be installed and terminated.
3. At least one receptacle outlet on a ground fault protected circuit shall be installed and the circuit wiring terminated.
4. Service equipment covers shall be installed.
5. The building roof covering shall be installed.
6. Temporary electrical service equipment shall be suitable for wet locations unless the interior is dry and protected from the weather.

D. Add Section 2701.1.3 to the IBC to read:

2701.1.3 Assisted living facility generator requirements. Generators installed to comply with regulations for assisted living facilities licensed by the Virginia Department of Social Services shall be permitted to be optional standby systems.

E. Delete Section 2702.2.3 of the IBC.

F. Change Sections 2702.2.8 and 2702.2.9 of the IBC to read:

2702.2.8 Group I-2 occupancies. Emergency power shall be provided in accordance with Section 407.11 for Group I-2 occupancies licensed by the Virginia Department of Health as a hospital, nursing, or hospice facility.

2702.2.9 Group I-3 occupancies. Emergency power shall be provided for doors in Group I-3 occupancies in accordance with Section 408.4.2.

13VAC5-63-310. Chapter 28 Mechanical systems.

A. Change Section 2801.1 of the IBC to read:

2801.1 Scope. Mechanical appliances, equipment, and systems shall be constructed and installed in accordance with this chapter, the IMC, and the IFGC. Masonry chimneys, fireplaces, and barbecues shall comply with the IMC and Chapter 21 of this code.

Exception: This code shall not govern the construction of water heaters, boilers, and pressure vessels to the extent that they are regulated by the Virginia Boiler and Pressure Vessel Regulations (16VAC25-50). However, the building official may require the owner of a structure to submit documentation to substantiate compliance with those regulations.

B. Add Section 2801.1.1 to the IBC to read:

2801.1.1 Required heating in dwelling units. Heating facilities shall be required in every dwelling unit or portion thereof that is to be rented, leased, or let on terms, either expressed or implied, to furnish heat to the occupants thereof. The heating facilities shall be capable of maintaining the room temperature at 65°F (18°C) during the period from October 15 to May 1 during the hours between 6:30 a.m. and 10:30 p.m. of each day and not less than 60°F (16°C) during other hours when measured at a point three feet (914 mm) above the floor and three feet (914 mm) from the exterior walls. The capability of the heating system shall be based on the outside design temperature required for the locality by this code.

C. Add Section 2801.1.2 to the IBC to read:

2801.1.2 Required heating in nonresidential structures. Heating facilities shall be required in every enclosed occupied space in nonresidential structures. The heating facilities shall be capable of producing sufficient heat during the period from October 1 to May 15 to maintain a temperature of not less than 65°F (18°C) during all working hours. The required room temperature shall be measured at a point three feet (914 mm) above the floor and three feet (914 mm) from the exterior walls.

Processing, storage, and operation areas that require cooling or special temperature conditions and areas in which persons are primarily engaged in vigorous physical activities are exempt from these requirements.

D. Add Section 2801.1.3 to the IBC to read:

2801.1.3 Changes to the IMC. The following changes shall be made to the IMC:

1. ~~Add the following definitions to Section 202 of the IMC:~~

~~Refrigerant designation. The unique identifying alphanumeric value or refrigerant number assigned to an individual refrigerant and published in ASHRAE Standard 34.~~

2. ~~Change Section 401.2 of the IMC to read:~~

~~401.2 Ventilation required. Every occupied space shall be ventilated by natural means in accordance with Section 402 or by mechanical means in accordance with Section 403. Group~~

~~R-dwelling units shall be ventilated by mechanical means in accordance with Section 403. Ambulatory care facilities and Group I-2 occupancies shall be ventilated by mechanical means in accordance with Section 407.~~

3. Change Section 301.1 of the IMC and Section 301.7 of the IMC (exception remains) to read:

301.1 Scope. This chapter shall govern the approval and installation of all equipment and appliances that comprise parts of the building mechanical systems regulated by this code in accordance with Section 102.2.

301.7 Listed and labeled. Appliances regulated by this code shall be listed and labeled for the application in which they are installed and used, unless otherwise approved in accordance with Section 112.2.

2. Change the last paragraph of Section 403.3.1.1 (exception remains) of the IMC to read:

~~403.3.1.1 Outdoor airflow rate. Ventilation systems shall be designed to have the capacity to supply the minimum outdoor airflow rate determined in accordance with this section. In each occupiable space, the ventilation system shall be designed to deliver the required rate of outdoor airflow to the breathing zone. The occupant load utilized for design of the ventilation system shall not be less than the number determined from the estimated maximum occupant load rate indicated in Table 403.3.1.1. Ventilation rates for occupancies not represented in Table 403.3.1.1 shall be those for a listed occupancy classification that is most similar in terms of occupant density, activities, and building construction or shall be determined by an approved engineering analysis. The ventilation system shall be designed to supply the required rate of ventilation air continuously during the period the building is occupied, except as otherwise stated in other provisions of the code.~~

With the exception of smoking lounges and other designated areas where smoking is permitted, the ventilation rates in Table 403.3.1.1 are based on the absence of smoking in occupiable spaces.

~~Exception: The occupant load is not required to be determined based on the estimated maximum occupant load rate indicated in Table 403.3.1.1 where approved statistical data document the accuracy of an alternate anticipated occupant density.~~

4. 3. Add the following rows to Table 403.3.1.1 of the IMC to read:

OCCUPANCY CLASSIFICATION	Occupant Density #/1000 ft ² ^a	People Outdoor Airflow Rate in Breathing Zone, R _p cfm/person	Area Outdoor Airflow Rate in Breathing Zone, R _a cfm/ft ² ^a	Exhaust Airflow Rate Cfm/ft ² ^a

Food and beverage service				
Bars or cocktail lounges designated as an area where smoking is permitted ^b	100	30	--	--
Cafeteria or fast food designated as an area where smoking is permitted ^b	100	20	--	--
Dining rooms designated as an area where smoking is permitted ^b	70	20	--	--
Public spaces				
Lounges designated as an area where smoking is permitted ^b	100	30	--	--
Medical procedure rooms ^{†i}	20	15	--	--
Patient rooms ^{†i}	10	25	--	--
Physical therapy rooms ^{†i}	20	15	--	--
i. For spaces that are located in clinic, outpatient facilities as defined in Chapter 2 of the VCC.				

5. 4. Change Section 504.9.2 of the IMC to read:

504.9.2 Duct installation. Exhaust ducts shall be supported at four-foot (1219 mm) intervals and secured in place. The insert end of the duct shall extend into the adjoining duct or fitting in the direction of airflow. Ducts shall not be joined with screws or similar fasteners that protrude into the inside of the duct.

Where dryer exhaust ducts are enclosed in wall or ceiling cavities, such cavities shall allow the installation of the duct without deformation.

~~6.~~ 5. Change Item 2 of Section 504.11 to read:

2. Dampers shall be prohibited in the exhaust duct. Penetrations of the shaft and ductwork shall be protected in accordance with Section 607.5.5, Exception 1.

~~7.~~ 6. Change Exception 1 of Section 505.3 of the IMC to read:

1. In Group R buildings, where installed in accordance with the manufacturer's installation instructions and where mechanical or natural ventilation is otherwise provided in accordance with Chapter 4, listed and labeled ductless range hoods shall not be required to discharge to the outdoors.

~~8.~~ 7. Change Item 2 in Section 505.5 to read:

2. Penetrations of the shaft and ductwork shall be protected in accordance with Section 607.5.5.

~~9.~~ 8. Change Section 505.6 of the IMC to read:

505.6 Other than Group R. In other than Group R occupancies, where electric domestic cooking appliances are utilized for domestic purposes, domestic range hoods shall be permitted for such appliances. Hoods and exhaust systems for such electric domestic cooking appliances shall be in accordance with Sections 505.2 and 505.4. In other than Group R occupancies, where fuel-fired domestic cooking appliances are utilized for domestic purposes, a Type I or Type II hood shall be provided as required for the type of appliances and processes in accordance with Section 507.1.

~~10.~~ 9. Change Section ~~510.6.1.1~~ 509.6.1.1 of the IMC to read:

~~510.6.1.1~~ 509.6.1.1 Shaft penetrations. Hazardous exhaust ducts that penetrate fire-resistance-rated shafts shall comply with Section 713.11 of the International Building Code.

~~11.~~ 10. Change Section 512.6 of the IMC to read:

512.6 Pressurization method. When approved by the building official, the means of controlling smoke shall be permitted by pressure differences across smoke barriers. Maintenance of a tenable environment is not required in the smoke-control zone of fire origin.

11. Change Section 607.5.5 of the IMC to read:

607.5.5 Shaft enclosures. Shaft enclosures that are permitted to be penetrated by ducts and air transfer openings shall be protected with approved fire and smoke dampers installed in accordance with their listing.

Exceptions:

1. Fire and smoke dampers are not required where steel exhaust subducts extend at least 22 inches (559 mm) vertically in exhaust shafts, provided there is a continuous airflow upward to the outside.
2. Fire dampers are not required where penetrations are tested in accordance with ASTM E119 as part of the fire-resistance-rated assembly.
3. Fire and smoke dampers are not required where ducts are used as part of an approved smoke control system in accordance with Section 909 of the International Building Code.
4. Fire and smoke dampers are not required where the penetrations are in parking garage exhaust or supply shafts that are separated from other building shafts by not less than two-hour fire-resistance-rated construction.
5. Smoke dampers are not required where the building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 of the International Building Code.

12. Add Section 607.6.2.2 to the IMC to read:

~~607.6.2.2 Equipment shutdown. Where ceiling radiation dampers are listed as static dampers, the HVAC equipment shall be effectively shut down to stop the airflow prior to the damper closing using one of the following methods:~~

- ~~1. A duct detector installed in the return duct.~~
- ~~2. An area smoke detector interlocked with the HVAC equipment.~~
- ~~3. A listed heat sensor installed in the return duct.~~

13. ~~Change~~ Revise the "Air-conditioning equipment" row and add the following rows to Table 1101.2 to read:

EQUIPMENT	STANDARDS
Refrigeration fittings, including press connect, flared and threaded	UL 109 and UL 207

Air-conditioning equipment and heat pump equipment	UL 1995 or UL/CSA 60335-2-40
Packaged terminal air conditioners and heat pumps	UL 484 or UL/CSA 60335-2-40
Split-system air conditioners and heat pumps	UL 1995 or UL/CSA 60335-2-40
Dehumidifiers	UL 474 or UL/CSA 60335-2-40
Air/water cooled condensers	UL 1995 or UL/CSA 60335-2-40 or UL/CSA 60335-2-89
Refrigeration equipment	UL 1995 or UL/CSA 60335-2-89
Unit coolers	UL 412 or UL/CSA 60335-2-89
Commercial refrigerators, freezers, beverage coolers, and walk-in coolers	UL 471 or UL/CSA 60335-2-89
Refrigerating units and walk-in coolers	UL 427 or UL 60335-2-89
Refrigeration condensing units	UL 1995 or UL/CSA 60335-2-89
Automatic commercial ice machines	UL 563 or UL/CSA 60335-2-89
Refrigerant-containing components and accessories	UL 207

14. Add Section 1101.2.1 to read:

1101.2.1 Group A2L, A2, A3, and B1 high-probability equipment. High-probability equipment using Group A2L, A2, A3, or B1 refrigerant shall comply with UL 484, UL/CSA 60335-2-40, or UL/CSA 60335-2-89.

15. Change Sections 1101.7 and 1102.2.1 to read:

~~1101.7 Changing refrigerant. Changes of refrigerant in an existing system to a refrigerant with a different refrigerant designation shall only be allowed where in accordance with the following:~~

~~1. The owner or the owner's authorized agent shall be notified prior to making a change of refrigerant, and the change of refrigerant shall not be made where the owner objects to the change.~~

~~2. The change in refrigerant shall be in accordance with one of the following.~~

~~2.1 Written instructions of the original equipment manufacturer.~~

~~2.2 An evaluation of the system by a registered design professional or by an approved agency that validates safety and suitability of the replacement refrigerant.~~

~~2.3 Approved by the code official.~~

~~3. Where the replacement refrigerant is classified into the same safety group, requirements that were applicable to the existing system shall continue to apply.~~

~~4. Where the replacement refrigerant is classified into a different safety group, the system shall comply with the requirements of this standard for a new installation, and the change of refrigerant shall require code official approval.~~

~~1102.2.1 Mixing. Refrigerants with different refrigerant designations shall only be mixed in a system in accordance with both of the following:~~

~~1. The addition of a second refrigerant is allowed by the equipment manufacturer and is in accordance with the manufacturer's written instructions.~~

~~2. The resulting mixture does not change the refrigerant safety group.~~

16. Change Table 1103.1 of the IMC to read (portions of table not shown remain):

TABLE 1103.1 REFRIGERANT CLASSIFICATION, AMOUNT AND OEL									
Chemical Refrigerant	Formula	Chemical Name of Blend	Refrigerant Safety Group Classification	AMOUNT OF REFRIGERANT PER OCCUPIED SPACE					
				RCL			LFL		
				lb/Mcf	ppm	g/m ³	lb/Mcf	ppm	g/m ³
									OEL ^d

R-11 ^e	CCl ₃ F	trichlorofluoromethane	A1	0.39	1,100	6.1				1,000
R-12 ^e	CCl ₂ F ₂	dichlorodifluoromethane	A1	5.6	18,000	90				1,000
R-13 ^e	CClF ₃	chlorotrifluoromethane	A1	—	—	—				1,000
R-13B1 ^e	CBrF ₃	bromotrifluoromethane	A1	—	—	—				1,000
R-1311	CF ₃ I	trifluoroiodomethane	A1	1.0	2,000	16				500
R-31	CH ₂ ClF	chlorofluoromethane	—	—	—	—				—
R-32	CH ₂ F ₂	difluoromethane (methylene fluoride)	A2L	4.8	36,000	77	19.1	144,000	306	1,000
R-41	CH ₃ F	fluoromethane (methyl fluoride)	—	—	—	—				—
R-50	CH ₄	methane	A3	—	—	—		50,000		1,000
R-113 ^e	CCl ₂ FCClF ₂	1,1,2 trichloro 1,2,2-trifluoroethane	A1	1.2	2,600	20				1,000
R-114 ^e	CClF ₂ CClF ₂	1,2-dichloro-1,1,2,2-tetrafluoroethane	A1	8.7	20,000	140				1,000
R-141b	CH ₃ CCl ₂ F	1,1-dichloro 1-fluoroethane	—	0.78	2,600	12	17.8	60,000	287	500
R-142b	CH ₃ CClF ₂	1-chloro-1,1-difluoroethane	A2	5.1	20,000	82	20.4	80,000	329	1,000
R-143a	CH ₃ CF ₃	1,1,1-trifluoroethane	A2L	4.4	21,000	70	17.5	82,000	282	1,000
R-152a	CH ₃ CHF ₂	1,1-difluoroethane	A2	2.0	12,000	32	8.1	48,000	130	1,000

R-170	CH ₃ CH ₃	ethane	A3	0.54	7,000	8.6	2.4	31,000	38	1,000
R-E170	CH ₃ OCH ₃	Methoxymethane (dimethyl ether)	A3	1.0	8,500	16	4.0	34,000	64	1,000
R-290	CH ₃ CH ₂ CH ₃	propane	A3	0.59	5,300	9.5	2.4	21,000	38	1,000
R-C318	(CF ₂) ₄	octafluorocyclobutane	A1	41	80,000	650				1,000
R-400A ^e	zeotrope	R-12/114 (50.0/50.0)	A1	10	28,000	160				1,000
R-400B ^e	zeotrope	R-12/114 (60.0/40.0)	A1	11	30,000	170				1,000
R-403B	zeotrope	R-290/22/218 (5.0/56.0/39.0)	A1	18	68,000	290				1,000
R-406A	zeotrope	R-22/600a/142b (55.0/4.0/41.0)	A2	4.7	21,000	75	18.8	82,000	301.9	1,000
R-407I	zeotrope	R-32/125/134a(19.5/8.5/72.0)	A1	16	71,100	250				1,000
R-408A	zeotrope	R-125/143a/22 (7.0/46.0/47.0)	A1	21	94,000	330				1,000
R-411A	zeotrope	R-127/22/152a (1.5/87.5/11.0)	A2	2.9	14,000	46	11.6	55,000	185.6	970
R-411B	zeotrope	R-1270/22/152a (3.0/94.0/3.0)	A2	2.8	13,000	45	14.8	70,000	238.3	940
R-412A	zeotrope	R-22/218/142b (70.0/5.0/25.0)	A2	5.1	22,000	82	20.5	87,000	328.6	1,000
R-413A	zeotrope	R-218/134a/600a (9.0/88.0/3.0)	A2	5.8	22,000	93	23.4	88,000	374.9	1,000

R-414B	zeotrope	R-22/124/600a/142b (50.0/39.0/1.5/9.5)	A1	6.0	23,00 0	96				1,00 0
R-417A	zeotrope	R-125/134a/600 (46.6/50.0/3.4)	A1	3.5	13,00 0	55				1,00 0
R-417B	zeotrope	R-125/134a/600 (79.0/18.3/2.7)	A1	4.3	15,00 0	69				1,00 0
R-418A	zeotrope	R-290/22/152a (1.5/96.0/2.5)	A2	4.8	22,00 0	77	19.2	89,00 0	308. 4	1,00 0
R-419A	zeotrope	R-125/134a/E170 (77.0/19.0/4.0)	A2	4.2	15,00 0	67	16.7	60,00 0	268. 6	1,00 0
R-419B	zeotrope	R-125/134a/E170 (48.5/48.0/3.5)	A2	4.6	17,00 0	74	18.5	69,00 0	297. 3	1,00 0
R-420A	zeotrope	R-134a/142b (88.0/12.0)	A1	12	44,00 0	180				1,00 0
R-423A	zeotrope	R-134a/227ea (52.5/47.5)	A1	19	59,00 0	300				1,00 0
R-424A	zeotrope	R-125/134a/600a/600/601 a (50.5/47.0/0.9/1.0/0.6)	A1	6.2	23,00 0	100				990
R-428A	zeotrope	R-125/143a/290/600a (77.5/20.0/0.6/1.9)	A1	23	84,00 0	370				1,00 0
R-429A	zeotrope	R-E170/152a/600a (60.0/10.0/30.0)	A3	0.81	6,300	13	3.2	25,00 0	83.8	1,00 0
R-430A	zeotrope	R-152a/600a (76.0/24.0)	A3	1.3	8,000	21	5.2	32,00 0	44.0	1,00 0
R-431A	zeotrope	R-290/152a (71.0/29.0)	A3	0.68	5,500	11	2.7	22,00 0	38.6	1,00 0
R-432A	zeotrope	R-1270/E170 (80.0/20.0)	A3	0.13	1,200	2.1	2.4	22,00 0	39.2	550

R-433A	zeotrope	R-1270/290 (30.0/70.0)	A3	0.34	3,100	5.5	2.4	20,000	32.4	760
R-433B	zeotrope	R-1270/290 (5.0-95.0)	A3	0.39	3,500	6.3	2.0	18,000	32.1	950
R-433C	zeotrope	R-1270/290 (25.0-75.0)	A3	0.41	3,700	6.5	2.0	18,000	83.8	790
R-435A	zeotrope	R-E170/152a (80.0/20.0)	A3	1.1	8,500	17	4.3	34,000	68.2	1,000
R-436A	zeotrope	R-290/600a (56.0/44.0)	A3	0.50	4,000	8.1	2.0	16,000	32.2	1,000
R-436B	zeotrope	R-290/600a (52.0/48.0)	A3	0.51	4,000	8.2	2.0	16,000	32.7	1,000
R-437A	zeotrope	R-125/134a/600/601 (19.5/78.5/1.4/0.6)	A1	5.1	19,000	82				990
R-439A	zeotrope	R-32/125/600a (50.0/47.0/3.0)	A2	4.7	26,000	76	18.9	104,000	303.3	1,000
R-440A	zeotrope	R-290/134a/152a (0.6/1.6/97.8)	A2	1.9	12,000	31	7.8	46,000	124.7	1,000
R-441A	zeotrope	R-170/290/600a/600 (3.1/54.8/6.0/36.1)	A3	0.39	3,200	6.3	2.0	16,000	31.7	1,000
R-443A	zeotrope	R-1270/290/600a (55.0/40.0/5.0)	A3	0.19	1,700	3.1	2.2	20,000	35.6	640
R-444A	zeotrope	R-32/152a/1234ze(E) (12.0/5.0/83.0)	A2L	5.1	21,000	81	19.9	82,000	324.8	850
R-444B	zeotrope	R-32/152a/1234ze(E) (41.5/10.0/48.5)	A2L	4.3	23,000	69	17.3	93,000	277.3	930
R-445A	zeotrope	R-744/134a/1234ze(E) (6.0/9.0/85.0)	A2L	4.2	16,000	67	21.7	63,000	347.4	930
R-446A	zeotrope	R-32/1234ze(E)/600 (68.0/29.0/3.0)	A2L	2.5	16,000	39	13.5	62,000	217.4	960

R-447A	zeotrope	R-32/125/1234ze(E) (68.0/3.5/28.5)	A2L	2.6	16,00 0	42	18.9	65,00 0	303. 5	960
R-447B	zeotrope	R-32/125/1234ze(E) (68.0/8.0/24.0)	A2L	2.3	16,00 0	42	20.6	121,0 00	312. 7	970
R-448A	zeotrope	R-32/125/1234yf/134a/1234ze(E) (26.0/26.0/20.0/21.0/7.0)	A1	2.4	110,0 00	390				860
R-449A	zeotrope	R-32/125/1234yf/134a (24.3/24.7/25.3/25.7)	A1	2.3	100,0 00	370				840
R-451A	zeotrope	R-1234yf/134a (89.8/10.2)	A2L	5.3	18,00 0	81	20.3	70,00 0	326. 6	530
R-451B	zeotrope	R-1234yf/134a (88.8/11.2)	A2L	5.3	18,00 0	81	20.3	70,00 0	326. 6	530
R-452A	zeotrope	R-32/125/1234yf (11.0/59.0/30.0)	A1	2.7	100,0 00	440				790
R-452B	zeotrope	R-32/125/1234yf (67.0/7.0/26.0)	A2L	4.8	30,00 0	77	19.3	119,0 00	310. 5	870
R-452C	zeotrope	R-32/125/1234yf (12.5/61.0/26.5)	A1	2.7	100,0 00	430				810
R-454A	zeotrope	R-32/1234yf (35.0/65.0)	A2L	3.2	16,00 0	52	18.3	63,00 0	293. 9	690
R-454B	zeotrope	R-32/1234yf (68.9/31.1)	A2L	3.1	19,00 0	49	22.0	77,00 0	352. 6	850
R-454C	zeotrope	R-32/1234yf (21.5/78.5)	A2L	4.4	19,00 0	71	18.0	62,00 0	289. 5	620
R-455A	zeotrope	R-744/32/1234yf (3.0/21.5/75.5)	A2L	4.9	22,00 0	79	26.9	118,0 00	432. 1	650

R-457A	zeotrope	R-32/1234yf/152a (18.0/70.0/12.0)	A2L	3.4	15,00 0	54	13.5	60,00 0	216. 3	650
R-457B	zeotrope	R-32/1234yf/152a (35.0/55.0/10.0)	A2L	3.7	19,00 0	59	14.9	76,00 0	239	730
R-459A	zeotrope	R-32/1234yf/1234ze(E) (68.0/26.0/6.0)	A2L	4.3	27,00 0	69	17.4	107,0 00	278. 7	870
R-459B	zeotrope	R-32/1234yf/1234ze(E) (21.0/69.0/10.0)	A2L	3.0	25,00 0	92	23.3	99,00 0	373. 5	640
R-460A	zeotrope	R-32/125/134a/1234ze(E) (12.0/52.0/14.0/22.0)	A1	24	92,00 0	380				950
R-460C	zeotrope	R-32/125/134a/1234ze(E) (2.5/52.5/46.0/49.0)	A1	20	73,00 0	310				900
R-462A	zeotrope	R-32/125/143a/134a/600 (9.0/42.0/2.0/44.0/3.0)	A2	3.9	16,00 0	62	16.6	105,0 00	265. 8	1,00 0
R-464A	zeotrope	R-32/125/1234ze(E)/227ea (27.0/27.0/40.0/6.0)	A1	27	120,0 00	430				930
R-465A	zeotrope	R-32/290/1234yf (21.0/7.9/71.1)	A2	2.5	12,00 0	40	10.0	98,00 0	160. 9	660
R-466A	zeotrope	R-32/125/131i (49.0/11.5/39.5)	A1	6.2	30,00 0	99				860
R-467A	zeotrope	R-32/125/134a/600a (22.0/5.0/72.4/0.6)	A2L	6.7	31,00 0	110				1,00 0
R-468A	zeotrope	R-1132a/32/1234yf (3.5/21.5/75.0)	A2L	4.1	16,00	66				610
R-469A	zeotrope	R-744/32/125 (35.0/32.5/32.5)	A1	8	53,00 0					1,60 0

R-470A	zeotrope	R-744/32/125/134a/1234ze(E)/227ea (10.0/17.0/19.0/7.0/44.0/3.0)	A1	17	77,000	270				1,100
R-470B	zeotrope	R-744/32/125/134a/1234ze(E)/227ea (10.0/11.5/11.5/3.0/57.0/7.0)	A1	16	72,000	270				1,100
R-471A	zeotrope	R-1234ze(E)/227ea/1336mzz(E) (78.7/4.3/17.0)	A1	9.7	31,000	160				710
R-472A	zeotrope	R-744/32/134a (69.0/12.0/19.0)	A1	4.5	35,000	72				2,700
R-500 ^d	azeotrope	R-12/152a (73.8/26.2)	A1	7.4	29,000	120				1,000
R-501	azeotrope	R-22/12 (75.0/25.0)	A1	13	54,000	210				1,000
R-502 ^d	azeotrope	R-22/115 (48.8/51.2)	A1	21	73,000	330				1,000
R-503 ^d	azeotrope	R-23/13 (40.1/59.9)	—	—	—	—				1,000
R-504 ^e	azeotrope	R-32/115 (48.2/51.8)	—	28	140,000	450				1,000
R-507A	azeotrope	R-125/143a (50.0/50.0)	A1	32	130,000	510				1,000
R-509A	azeotrope	R-22/218 (44.0/56.0)	A1	24	75,000	380				1,000
R-510A	azeotrope	R-E170/600a (88.0/12.0)	A3	0.87	7,300	14	3.5	29,000	56.1	1,000

R-511A	azeotrope	R-290/E170 (95.0/5.0)	A3	0.59	5,300	9.5	2.4	21,000	38.0	1,000
R-512A	azeotrope	R-134a/152a (5.0/95.0)	A2	1.9	11,000	31	7.7	45,000	123.9	1,000
R-515A	azeotrope	R-1234ze(E)/227ea (88.0/12.0)	A1	19	63,000	300				810
R-515B	azeotrope	R-1234ze(E)/227ea (91.1/8.9)	A1	18	61,000	290				810
R-516A	azeotrope	R-1234yf/134a/152a (77.5/8.5/14.0)	A2	3.2	13,000	52	13.1	50,000	210.1	590
R-600	$\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_3$	butane	A3	0.15	1,000	2.4	3.0	20,000	48	1,000
R-600a	$\text{CH}(\text{CH}_3)_2\text{CH}_3$	2-methylpropane (isobutane)	A3	0.59	4,000	9.6	2.4	16,000	38	1,000
R-601	$\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_3$	pentane	A3	0.18	1,000	2.9	2.2	12,000	35	600
R-601a	$(\text{CH}_3)_2\text{CHCH}_2\text{CH}_3$	2-methylbutane (isopentane)	A3	0.18	1,000	2.9	2.4	13,000	38	600
R-717	NH_3	ammonia	B2L	0.014	320	0.22	7.2	167,000	116	25
R-1130(E)	$\text{CHCl}=\text{CHCl}$	trans-1,2-dichloroethene	B2	0.25	1,000	4	16	65,000	258	200
R-1132a	$\text{CF}_2=\text{CH}_2$	1,1-difluoroethylene	A2	2.0	13,000	33	8.1	50,000	131	500
R-1150	$\text{CH}_2=\text{CH}_2$	ethene (ethylene)	A3	—	—	—	2.2	31,000	36	200
R-1224yd(Z)	$\text{CF}_3\text{CF}=\text{CHF}$	(Z)-1-chloro-2,3,3,3-tetrafluoroethylene	A1	23	60,000	370				1,000

R-1234yf	CF ₃ CF=CH ₂	2,3,3,3-tetrafluoro-1-propene	A2L	4.7	16,000	75	18.0	62,000	289	500
R-1234ze(E)	CF ₃ CH=CHF	trans-1,3,3,3-tetrafluoro-1-propene	A2L	4.7	16,000	76	18.8	65,000	303	800
R-1270	CH ₃ CH=CH ₂	Propene (propylene)	A3	0.1	1,000	1.7				500
R-1336mzz(E)	CF ₃ CHCHCF ₃	trans-1,1,1,4,4,4-hexafluoro-2-butene	A1	3.0	7,200	48				400
R-1336mzz(Z)	CF ₃ CHCHCF ₃	cis-1,1,1,4,4,4-hexafluoro-2-butene	A1	5.2	13,000	84				500

- a. Degrees of hazard are for health, fire, and reactivity, respectively, in accordance with NFPA 704.
- b. Reduction to 1-0-0 is allowed if analysis satisfactory to the code official shows that the maximum concentration for a rupture or full loss of refrigerant charge would not exceed the IDLH, considering both the refrigerant quantity and room volume.
- c. Class 1 ozone depleting substance; prohibited for new installations.
- d. Occupational Exposure Limit based on the OSHA PEL, ACGIH TLV-TWA, the TERA WEEL or consistent value on a time-weighted average (TWA) basis (unless noted C for ceiling) for an 8-hr/d and 40-hr/wk.

17. Change Section 1104.3.1 of the IMC to read:

1104.3.1 Air conditioning for human comfort. High probability systems used for human comfort shall use Group A1 or A2L refrigerant.

Exceptions:

1. Listed equipment for residential occupancies containing a maximum of 6.6 pounds (3 kg) of refrigerant.
2. Listed equipment for commercial occupancies containing a maximum of 22 pounds (10 kg) of refrigerant.
3. Industrial occupancies.

18. Change Section 1104.3.2 of the IMC to read:

1104.3.2 Group A3 and B3 refrigerants. Group A3 and B3 refrigerants shall not be used except where approved.

Exceptions: This section does not apply to:

1. Laboratories where the floor area per occupant is not less than 100 square feet (9.3 m²).
2. Listed self-contained systems having a maximum of 0.331 pounds (150 g) of Group A3 refrigerant.
3. Self-contained systems listed per UL 60335-2-89 having a maximum of 1.1 pounds (500g) of Group A3 refrigerant.
4. Industrial occupancies.
5. Equipment listed for and used in residential occupancies containing a maximum of 6.6 pounds (3 kg) of Group A2 or B2 refrigerant.
6. Equipment listed for and used in commercial occupancies containing a maximum of 22 pounds (10 kg) of Group A2 or B2 refrigerant.

19. Delete Table 1104.3.2 of the IMC.

20. Delete the exception to Section 1106.3 of the IMC and change Section 1106.3 of the IMC to read:

1106.3 Class 2 and Class 3 refrigerants. Where refrigerants of Groups A2, A3, B2, and B3 are used, the machinery room shall conform to the Class I, Division 2, hazardous location classification requirements of NFPA 70.

21. Delete the exception to Section 1106.4 and change Section 1106.4 of the IMC to read:

1106.4 Group A2L and B2L refrigerant. Machinery rooms for Group A2L and Group B2L refrigerant shall comply with Sections 1106.4.1 through 1106.4.3.

22. Change Section 1106.4.1 to the IMC to read:

1106.4.1 Elevated temperature. Open flame-producing devices or continuously operating hot surfaces over 1290 °F (700 °C) shall not be permanently installed in the room

23. Change Section 1106.4.2 of the IMC to read:

1106.4.2 Refrigerant detector. In addition to the requirements of Section 1105.3, refrigerant detectors shall signal an alarm and activate the ventilation system in accordance with the response time specified in Table 1106.4.2.

24. Replace Table 1106.4.2 of the IMC with the following:

Table 1106.4.2 GROUP A2L and B2L DETECTOR ACTIVATION

Activation Level	Maximum Response Time (seconds)	ASHRAE 15 Ventilation Level	Alarm Reset	Alarm Type
Less than or equal to the OEL in Table 1103.1	300	1	Automatic	Trouble
Less than or equal to the refrigerant concentration level in Table 1103.1	15	2	Manual	Emergency

25. Change Section 1106.4.3 of the IMC to read:

1106.4.3 Mechanical Ventilation. The machinery room shall have a mechanical ventilation system complying with ASHRAE 15.

26. Add the following standards to the list of referenced standards in Chapter 15 of the IMC:

Standard Reference Number	Title
UL 484-2019	Standard for Room Air Conditioners
UL/CSA 60335-2-40-2019	Household and Similar Electrical Appliances-Safety-Part 2-40: Particular Requirements for Electrical Heat Pumps, Air Conditioners and Dehumidifiers
UL/CSA 60335-2-89-2021	Household and Similar Electrical Appliances—Safety—Part 2-89: Particular Requirements for Commercial Refrigerating Appliances and Ice-Makers with an Incorporated or Remote Refrigerant Unit or Motor-Compressor

27. Delete the following standards from the list of referenced standards in Chapter 15 of the IMC:

Standard Reference Number	Title
UL 484-2014	Standard for Room Air Conditioners
UL/CSA 60335-2-40-2017	Household and Similar Electrical Appliances-Safety-Part 2-40: Particular Requirements for Electrical Heat Pumps, Air-Conditioners and Dehumidifiers

UL/CSA 60335-2-89-2017	Household and Similar Electrical Appliances—Safety—Part 2 89: Particular Requirements for Commercial Refrigerating Appliances and Ice Makers with an Incorporated or Remote Refrigerant Unit or Motor Compressor
UL 109—97	Tube Fittings for Flammable and Combustible Fluids, Refrigeration Service and Marine Use
UL 207—2009	Refrigerant-containing Components and Accessories, Nonelectrical—with revisions through June 2014

E. Add Section 2801.1.4 to the IBC to read:

2801.1.4 Changes to the IFGC. The following changes shall be made to the IFGC:

1. Change Section 301.1 of the IFGC to read:

301.1 Scope. This code shall apply to the installation of fuel gas piping systems, fuel gas utilization equipment, and related accessories as follows:

1. Coverage of piping systems shall extend from the point of delivery to the connections with gas utilization equipment. (See "point of delivery.")

2. Systems with an operating pressure of 125 psig (862 kPa gauge) or less.

Piping systems for gas-air mixtures within the flammable range with an operating pressure of 10 psig (69 kPa gauge) or less.

LP-Gas piping systems with an operating pressure of 20 psig (140 kPa gauge) or less.

3. Piping systems requirements shall include design, materials, components, fabrication, assembly, installation, testing, and inspection.

4. Requirements for gas utilization equipment and related accessories shall include installation, combustion, and ventilation air and venting.

This code shall not apply to the following:

1. Portable LP-Gas equipment of all types that are not connected to a fixed fuel piping system.

2. Installation of farm equipment such as brooders, dehydrators, dryers, and irrigation equipment.

3. Raw material (feedstock) applications except for piping to special atmosphere generators.

4. Oxygen-fuel gas cutting and welding systems.
5. Industrial gas applications using gases such as acetylene and acetylenic compounds, hydrogen, ammonia, carbon monoxide, oxygen, and nitrogen.
6. Petroleum refineries, pipeline compressor or pumping stations, loading terminals, compounding plants, refinery tank farms, and natural gas processing plants.
7. Integrated chemical plants or portions of such plants where flammable or combustible liquids or gases are produced by chemical reactions or used in chemical reactions.
8. LP-Gas installations at utility gas plants.
9. Liquefied natural gas (LNG) installations.
10. Fuel gas piping in power and atomic energy plants.
11. Proprietary items of equipment, apparatus, or instruments such as gas generating sets, compressors, and calorimeters.
12. LP-Gas equipment for vaporization, gas mixing, and gas manufacturing.
13. Temporary LP-Gas piping for buildings under construction or renovation that is not to become part of the permanent piping system.
14. Installation of LP-Gas systems for railroad switch heating.
15. Installation of LP-Gas and compressed natural gas (CNG) systems on vehicles.
16. Except as provided in Section 401.1.1, gas piping, meters, gas pressure regulators, and other appurtenances used by the serving gas supplier in the distribution of gas, other than undiluted LP-Gas.
17. Building design and construction, except as specified herein.

2. Change Section 301.3 of the IFGC to read:

301.3 Listed and labeled. Appliances regulated by this code shall be listed and labeled for the application in which they are used unless otherwise approved in accordance with Section 112. The approval of unlisted appliances in accordance with Section 112 shall be based on approved engineering evaluation.

3. Add Section 404.11.5 to the IFGC to read:

404.11.5 Coating application. Joints in gas piping systems shall not be coated prior to testing and approval.

4. Change Item 6 of Section 410.2 of the IFGC to read (Items 1 through 5 and Item 7 remain):

6. Means shall be provided downstream of the MP regulator for the connection of a pressure measuring instrument and shall be positioned to allow connection of a pressure measuring instrument. Such means shall be permitted to be a dedicated test port on a regulator, gas control, or manifold or a plugged tee fitting or plugged manifold port.

5. Change Section 614.9.2 of the IFGC to read:

614.9.2 Duct installation. Exhaust ducts shall be supported at 4-foot (1219 mm) intervals and secured in place. The insert end of the duct shall extend into the adjoining duct or fitting in the direction of airflow. Ducts shall not be joined with screws or similar fasteners that protrude into the inside of the duct.

Where dryer exhaust ducts are enclosed in wall or ceiling cavities, such cavities shall allow the installation of the duct without deformation.

6. Add the following standards to the list of referenced standards in Chapter 8 of the IFGC:

Standard Reference Number	Title
ANSI LC1/CSA 6.26-18	Fuel Gas Piping Systems Using Corrugated Stainless Steel Tubing (CSST)

7. Delete the following standards from the list of referenced standards in Chapter 8 of the IFGC:

Standard Reference Number	Title
ANSI LC1/CSA 6.26-16	Fuel Gas Piping Systems Using Corrugated Stainless Steel Tubing (CSST)

Change Item 2 of Section 614.11 of the IFGC to read:

2. Dampers shall be prohibited in the exhaust duct. Penetrations of the shaft and ductwork shall be protected in accordance with Section 607.5.5, Exception 1, of the Virginia Mechanical Code.

7. Change Section 701.2 of the IFGC to read:

701.2 Permits. Permits shall be required as set forth in Section 108.

13VAC5-63-320. Chapter 29 Plumbing systems.

A. Change Section 2901.1 of the IBC to read:

2901.1 Scope. The provisions of this chapter and the IPC shall govern the design and installation of all plumbing systems and equipment, except that as provided for in Section 103.5 for functional design, water supply sources and sewage disposal systems are regulated and approved by the Virginia Department of Health and the Virginia Department of Environmental Quality. The approval of pumping and electrical equipment associated with such water supply sources and sewage disposal systems shall, however, be the responsibility of the building official.

Note: See also the Memorandum of Agreement in the "Related Laws Package," which is available from DHCD.

B. Add Section 2901.1.1 to the IBC to read:

2901.1.1 Changes to the IPC. The following changes shall be made to the IPC:

1. Add the following definitions to the IPC to read:

Nonpotable fixtures and outlets. Fixtures and outlets that are not dependent on potable water for the safe operation to perform their intended use. Such fixtures and outlets may include water closets, urinals, irrigation, mechanical equipment, and hose connections to perform operations, such as vehicle washing and lawn maintenance.

Nonpotable water systems. Water systems for the collection, treatment, storage, distribution, and use or reuse of nonpotable water. Nonpotable systems include reclaimed water, rainwater, and gray water systems.

~~Service sink. A general purpose sink exclusively intended to be used for facilitating the cleaning of a building or tenant space.~~

~~Stormwater. Precipitation that is discharged across the land surface or through conveyances to one or more waterways and that may include stormwater runoff, snow melt runoff, and surface runoff and drainage.~~

2. Change the following definitions in the IPC to read:

Rainwater. Natural precipitation, including snow melt, from roof surfaces only.

Reclaimed water. Reclaimed water means water resulting from the treatment of domestic, municipal, or industrial wastewater that is suitable for a water reuse that would not otherwise occur. Specifically excluded from this definition is "gray water."

Stormwater. Precipitation that is discharged across the land surface or through conveyances to one or more waterways and that may include stormwater runoff, snow melt runoff, and surface runoff and drainage.

3. Change the exception to Section 301.3 of the IPC to read:

Exception: Bathtubs, showers, lavatories, clothes washers, and laundry trays shall not be required to discharge to the sanitary drainage system where such fixtures discharge to an approved nonpotable gray water system in accordance with the applicable provisions of Chapter 13.

4. Delete Section 306.2.4 of the IPC and Section ~~311~~ 310 (including subsections) of the IPC in its entirety.
IPC.

5. Change the following rows of Table 403.1 of the IPC (rows not shown remain) to read:

TABLE 403.1

MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES^a (See Sections 403.1.1 and 403.2)

NO.	CLASSIFICATION	DESCRIPTION	WATER CLOSETS (URINALS: SEE SECTION 424.2)		LAVATORIES		BATHTUBS/ SHOWERS	DRINKING FOUNTAINS (SEE SECTION 410)	OTHER
			MALE	FEMALE	MALE	FEMALE			
1	Assembly	Theaters and other buildings for the performing arts and motion pictures ^d	1 per 125	1 per 65	1 per 200		—	1 per 500	1 service sink
			1 per ~~85.5~~ ^{f,g} <u>85.5</u> ^g						
		Nightclubs, bars, taverns, dance halls and buildings for similar purposes ^d	1 per 40	1 per 40	1 per 75		—	1 per 500	1 service sink
		Restaurants, banquet halls and food courts ^d	1 per 75	1 per 75	1 per 200		—	1 per 500	1 service sink
		Gaming areas	1 per 100 for the first 400 and 1 per 250 for the remainder exceeding 400	1 per 50 for the first 400 and 1 per 150 for the remainder exceeding 400	1 per 250 for the first 750 and 1 per 500 for the remainder exceeding 750		—	1 per 1,000	1 service sink
			1 per 66.67 for the first 800 and 1 per 187.5 for the remainder exceeding ~~800~~ ^{f,g} <u>800</u> ^g						
		Auditoriums without permanent seating, art galleries, exhibition halls, museums, lecture	1 per 125	1 per 65	1 per 200		—	1 per 500	1 service sink
			1 per 85.5 ^g						

		halls, libraries, arcades and gymnasiums ^d							
		Passenger terminals (other than airport terminals) and transportation facilities ^d	1 per 500	1 per 500	1 per 750	—	1 per 1,000	1 service sink	
		Airport terminals	1 per 500	1 per 100 for the first 500 and 1 per 150 for the remainder exceeding 500	1 per 750	—	1 per 1,000	1 service sink	
		Places of worship and other religious services ^d	1 per 150	1 per 75	1 per 200		—	1 per 1,000	1 service sink
			1 per 100 ^{f,g} 100 ^g						
		Coliseums, arenas, skating rinks, pools and tennis courts for indoor sporting events and activities ^f	1 per 75 for the first 1,500 and 1 per 120 for the remainder exceeding 1,500	1 per 40 for the first 1,520 and 1 per 60 for the remainder exceeding 1,520	1 per 200	1 per 150	—	1 per 1,000	1 service sink
			1 per 52.2 for the first 3,025 and 1 per 80 for the remainder exceeding 3,025 ^{f,g} 3,025 ^g		1 per 171.4 ^g				
		Stadiums, amusement parks, bleachers and grandstands for	1 per 75 for the first 1,500 and 1 per 120 for the remainder	1 per 40 for the first 1,520 and 1 per 60 for the remainder	1 per 200	1 per 150	—	1 per 1,000	1 service sink

		outdoor sporting events and activities ^f	exceeding 1,500	exceeding 1,520					
			1 per 52.2 for the first 3,025 and 1 per 80 for the remainder exceeding 3,025 ^{f,g}		1 per ~~171.4~~ ^{f,g} <u>171.4</u> ^g				

6. Add footnote "g" and change footnote "f" to Table 403.1 of the IPC to read:

f. The occupant load for pools shall be in accordance with the "Skating rinks, swimming pools" category of Table 1004.5 of the IBC.

g. Use this fixture ratio for determining the minimum number of fixtures for multi-user gender-neutral toilet facilities.

7. Change ~~Exceptions~~ exception 2 and add exception 3 to Section 403.1.1 of the IPC to read (Exception 1 remains):

2. Where multiuser facilities are designed to serve all genders, the minimum fixture count shall be calculated 100% based on the total occupant load.

3. The total occupant load shall not be required to be divided in half with a distribution of sexes where single-user water closets and bathing room fixtures are provided in accordance with Section 403.1.2.

8. Add Section 403.1.4 and Table 403.1.4 to the IPC to read:

403.1.4 Marina fixtures. Notwithstanding any provision to the contrary, plumbing fixtures shall be provided for marinas in the minimum number shown in Table 403.1.4. Fixtures shall be located within 500 feet walking distance from the shore end of any dock they serve. Separate facilities shall be provided for each sex with an equal number of fixtures of each type in each facility, except that separate facilities are not required where the number of slips is less than 25. Urinals may be substituted for up to 50% of water closets.

Table 403.1.4 Minimum Number of Required Plumbing Fixtures for Marinas			
Number of Slips	Plumbing Fixtures		
	Water Closets	Lavatories	Showers
1 - 24	1	1	1
25 - 49	4	4	2

50 - 99	6	4	2
100 - 149	8	6	4
150 - 199	10	8	4
200 - 249	12	10	6
250 or greater	Two additional fixtures of each type for each 100 additional slips.		

9. Change Exception 6 to Section 403.2 of the IPC to read:

6. Separate facilities shall not be required where multi-user gender-neutral facilities are provided in accordance with Section 405.3 and Section ~~1109.2.6~~ 1110.2.6 of the VCC.

10. Change Section 403.3.3 of the IPC and add Exception 3 to Section 403.3.3 of the IPC (Exceptions 1 and 2 remain ~~as they are~~), to read:

403.3.3 Location of toilet facilities in occupancies other than malls and airports. In occupancies other than covered and open mall buildings and airport terminals, the required public and employee toilet facilities shall be located not more than one story above or below the space required to be provided with toilet facilities, and the path of travel to such facilities shall not exceed a distance of 500 feet (152 m).

3. The location and maximum distances of travel to the required public facilities located on cemetery property are permitted to exceed that required by this section, provided that the location and maximum travel distance are located on the same property and approved.

11. Renumber Section 403.3.5 of the IPC to Section 403.3.6 and Section 403.3.6 of the IPC to Section 403.3.7 and change Section 403.3.5 of the IPC to read:

403.3.5 Location of toilet facilities in airport terminals. In airport terminals, the minimum number of public and employee toilet fixtures shall be located before arriving at and after leaving the main security screening checkpoints and shall comply with the following:

1. Shall be based on the actual use and occupant load of those spaces before and after the main security screening checkpoints.
2. Shall not be more than one story above or below the space required to be provided with toilet facilities.
3. The path of travel to such facilities shall not exceed a distance of 300 feet (91 mm). For e employee toilet facilities, the maximum distance of travel shall be measured from an employee's work area.

~~403.3.6 Pay facilities. Where pay facilities are installed, such facilities shall be in excess of the required minimum facilities. Required facilities shall be free of charge.~~

~~403.3.7 Door locking. Where a toilet room is provided for the use of multiple occupants, the egress door for the room shall not be lockable from the inside of the room. This section does not apply to family or assisted use toilet rooms.~~

12. Add an exception to Section 405.3.2 of the IPC to read:

Exception: In educational use occupancies, the required lavatory shall be permitted to be located adjacent to the room or space containing the water closet, provided that not more than one operational door is between the water closet and the lavatory.

13. Change Section 405.3.4 (exceptions remain) and add Sections 405.3.4.1 and 405.3.4.2 to the IPC to read:

405.3.4 Water closet compartment. Each water closet utilized by the public or employees shall comply with Sections 405.3.4.1 and 405.3.4.2, as applicable. All fully-enclosed compartments shall be provided with occupancy indicators.

Exceptions:

- ~~1. Water closet compartments shall not be required in a single-occupant toilet room with a lockable door.~~
- ~~2. Toilet rooms located in child day care facilities and containing two or more water closets shall be permitted to have one water closet without an enclosing compartment.~~
- ~~3. This provision is not applicable to toilet areas located within Group I-3 housing areas.~~

405.3.4.1 Separate facilities. Each water closet provided in separate facilities shall occupy a separate compartment with walls or partitions and a door enclosing the fixtures to ensure privacy and shall comply with Section 405.3.1. Accessible water closets and compartments shall comply with ICC A117.1.

405.3.4.2 Multi-user gender-neutral facilities. Each water closet provided in a multi-user, gender-neutral toilet facility shall occupy a separate compartment with walls or partitions, including the doors thereto, that shall extend to the floor and to the ceiling with maximum 1/2-inch (13 mm) clearances at the floor and ceiling, with gaps not exceeding 1/8-inch (3 mm) between the doors and partitions and partitions and walls, and shall comply with Section 405.3.1. Accessible water closet compartments shall comply with ICC A117.1 and the increased toe clearance requirements.

14. Change Section 405.3.5 of the IPC (exceptions remain) to read:

405.3.5 Urinal separation and partitions. Each urinal utilized by the public or employees shall occupy a separate area with walls or partitions to provide privacy. The horizontal dimension between walls or partitions at each urinal shall be not less than 30 inches (762 mm). The walls or partitions shall begin at a height not greater than 12 inches (305 mm) from and extend not less than 60 inches (1524 mm) above the finished floor surface. The walls or

partitions shall extend from the wall surface at each side of the urinal not less than 18 inches (457 mm) or to a point not less than six inches (152 mm) beyond the outermost front lip of the urinal measured from the finished backwall surface, whichever is greater. All fully-enclosed compartments shall be provided with occupancy indicators.

Exceptions:

- ~~1. Urinal partitions shall not be required in a single-occupant or family-assisted-use toilet room with a lockable door.~~
- ~~2. Toilet rooms located in child day care facilities and containing two or more urinals shall be permitted to have one urinal without partitions.~~

15. Add Sections 405.3.5.1 and 405.3.5.2 to the IPC to read:

405.3.5.1 Separate facilities. The walls or partitions for urinals in separate facilities shall begin at a height not more than 12 inches (305 mm) from and extend not less than 60 inches (1524 mm) above the finished floor surface. The walls or partitions shall extend from the wall surface at each side of the urinal not less than 18 inches (457 mm) or to a point not less than six inches (152 mm) beyond the outermost front lip of the urinal measured from the finished backwall surface, whichever is greater.

405.3.5.2 Multi-user gender-neutral facilities. Each urinal provided in a multi-user gender-neutral toilet facility shall occupy a separate compartment with walls or partitions, including the doors thereto, where the partitions extend to the floor and to the ceiling with maximum 1/2-inch (13 mm) clearances, with gaps not exceeding 1/8-inch (3 mm) between the doors and partitions and partitions and walls, or shall all be located in a separate room with a door, enclosing the urinals to ensure privacy. Where an accessible urinal is located within a compartment, grab bars shall not be required for the urinal, the door shall be located to allow for a forward approach to the urinal, and increased toe clearances shall be provided in accordance with A117.1.

Exceptions:

1. A separate room or compartment shall not be required in a single-occupant toilet room with a lockable door.
2. This provision is not applicable to toilet areas located within Group I-3 occupancy housing areas.

16. Change Section 423.1 of the IPC to read:

423.1 Water connections. Baptisteries, ornamental and lily pools, aquariums, ornamental fountain basins, swimming pools, footbaths and pedicure baths, and similar constructions, where provided with water supplies, shall be protected against backflow in accordance with Section 608.

17. Add an exception to Section 424.2 of the IPC to read:

Exception: In each multi-user gender-neutral bathroom or toilet room, urinals shall not be substituted for more than 22.5 % of the total number of water closets in Assembly and Educational occupancies. Urinals shall not be substituted for more than 25% of the total number of water closets in all other occupancies.

18. Add Section 602.2.1 to the IPC to read:

602.2.1 Nonpotable fixtures and outlets. Nonpotable water shall be permitted to serve nonpotable type fixtures and outlets in accordance with Chapter 13.

19. Add Section 603.3 to the IPC to read:

603.3 Tracer wire. Nonmetallic water service piping that connects to public systems shall be locatable. An insulated copper tracer wire, 18 AWG minimum in size and suitable for direct burial or an equivalent product, shall be utilized. The wire shall be installed in the same trench as the water service piping and within 12 inches (305 mm) of the pipe and shall be installed to within five feet (1524 mm) of the building wall to the point where the building water service pipe intersects with the public water supply. At a minimum, one end of the wire shall terminate above grade to provide access to the wire in a location that is resistant to physical damage, such as with a meter vault or at the building wall.

20. Change Section 605.2.1 to read:

605.2.1 Lead content of drinking water pipe and fittings. Pipe, pipe fittings, joints, valves, faucets, and fixture fittings utilized to supply water for drinking or cooking purposes shall comply with NSF 372.

~~21. Change Item 2 of the exception to Section 605.15.2 to read:~~

~~2. The solvent cement used is yellow or green in color.~~

~~22. Change Section 608.15 to read:~~

608.15 Location of backflow preventers. Access for inspection, testing, service, repair, and replacement shall be provided to backflow prevention assemblies. Backflow prevention assemblies shall be installed between 12 inches (305 mm) and 60 inches (1525 mm) from grade, floor level, or service platform and as specified by the manufacturer's instructions. Where the manufacturer's listed installation height conflicts with this requirement, the manufacturer's listed heights shall apply. Access shall be provided to backflow prevention devices and as specified by the manufacturer's instructions.

~~23.~~ 22. Add Section 703.7 to the IPC to read:

703.7 Tracer wire. Nonmetallic sanitary sewer piping that discharges to public systems shall be locatable. An insulated copper tracer wire, 18 AWG minimum in size and suitable for direct burial or an equivalent product, shall be utilized. The wire shall be installed in the

same trench as the sewer within 12 inches (305 mm) of the pipe and shall be installed to within five feet (1524 mm) of the building wall to the point where the building sewer intersects with the public system. At a minimum, one end of the wire shall terminate above grade in an accessible location that is resistant to physical damage, such as with a cleanout or at the building wall.

~~24.~~ 23. Delete the exception for Section 705.10.2 of the IPC.

~~25.~~ 24. Change Section 1003.3.2 of the IPC to read:

1003.3.2 Food waste disposers. Where food waste disposers connect to grease interceptors, a solids interceptor shall separate the discharge before connecting to the grease interceptor. Solids interceptors and grease interceptors shall be sized and rated for the discharge of the food waste disposers. Emulsifiers, chemicals, enzymes, and bacteria shall not discharge into the food waste disposer.

~~26.~~ 25. Add an exception to Section 1101.2 of the IPC to read:

Exception. Rainwater nonpotable water systems shall be permitted in accordance with Chapter 13.

~~27.~~ 26. Delete the last sentence from Section 1101.7 of the IPC.

~~28.~~ 27. Delete Section 1105.2 of the IPC.

~~29.~~ 28. Delete Section 1106.2.1 and change Section 1106.2 of the IPC to read:

1106.2 Vertical conductors and leaders. Vertical conductors and leaders shall be sized for the maximum projected roof area, in accordance with Tables 1106.2(1) and 1106.2(2).

~~30.~~ 29. Delete Table 1106.2 of the IPC and add Tables 1106.2(1) and 1106.2(2) to the IPC to read:

Table 1106.2(1)												
Size of Circular Vertical Conductors and Leaders												
Diameter of Leader (inches ^a)	Horizontally Projected Roof Area (square feet)											
	Rainfall rate (inches per hour)											
	1	2	3	4	5	6	7	8	9	10	11	12
2	2,280	1,440	960	720	575	480	410	360	320	290	260	240
3	8,800	4,400	2,930	2,200	1,760	1,470	1,260	1,100	980	880	800	730

4	18,400	9,200	6,130	4,600	3,680	3,070	2,630	2,300	2,045	1,840	1,675	1,530
5	34,600	17,300	11,530	8,650	6,920	5,765	4,945	4,325	3,845	3,460	3,145	2,880
6	54,000	27,000	17,995	13,500	10,800	9,000	7,715	6,750	6,000	5,400	4,910	4,500
8	116,000	58,000	38,660	29,000	23,200	19,315	16,570	14,500	12,890	11,600	10,545	9,600

For SI: 1 inch = 25.4 mm, 1 square foot = 0.0929 m².

a. Sizes indicated are the diameter of circular piping. This table is applicable to piping of other shapes, provided the cross-sectional shape fully enclosed a circle of the diameter indicated in this table. For rectangular leaders, see Table 1106.2(2). Interpolation is permitted for pipe sizes that fall between those listed in this table.

Table 1106.2(2)

Size of Rectangular Vertical Conductors and Leaders

Dimensions of Common Leader Sizes	Horizontally Projected Roof Area (square feet)											
	Rainfall rate (inches per hour)											
	1	2	3	4	5	6	7	8	9	10	11	12
width x length (inches) ^{a, b}												
1-3/4 x 2-1/2	3,410	1,700	1,130	850	680	560	480	420	370	340	310	280
2 x 3	5,540	2,770	1,840	1,380	1,100	920	790	690	610	550	500	460
2-3/4 x 4-1/4	12,830	6,410	4,270	3,200	2,560	2,130	1,830	1,600	1,420	1,280	1,160	1,060
3 x 4	13,210	6,600	4,400	3,300	2,640	2,200	1,880	1,650	1,460	1,320	1,200	1,100
3-1/2 x 4	15,900	7,950	5,300	3,970	3,180	2,650	2,270	1,980	1,760	1,590	1,440	1,320
3-1/2 x 5	21,310	10,650	7,100	5,320	4,260	3,550	3,040	2,660	2,360	2,130	1,930	1,770
3-3/4 x 4-3/4	21,960	10,980	7,320	5,490	4,390	3,660	3,130	2,740	2,440	2,190	1,990	1,830
3-3/4 x 5-1/4	25,520	12,760	8,500	6,380	5,100	4,250	3,640	3,190	2,830	2,550	2,320	2,120
3-1/2 x 6	27,790	13,890	9,260	6,940	5,550	4,630	3,970	3,470	3,080	2,770	2,520	2,310

4 x 6	32,980	16,490	10,990	8,240	6,590	5,490	4,710	4,120	3,660	3,290	2,990	2,740
5-1/2 x 5-1/2	44,300	22,150	14,760	11,070	8,860	7,380	6,320	5,530	4,920	4,430	4,020	3,690
7-1/2 x 7-1/2	100,500	50,250	33,500	25,120	20,100	16,750	14,350	12,560	11,160	10,050	9,130	8,370

For SI: 1 inch = 25.4mm, 1 square foot = 0.0929 m².

a. Sizes indicated are nominal width x length of the opening for rectangular piping.

b. For shapes not included in this table, Equation 11-1 shall be used to determine the equivalent circular diameter, De, of rectangular piping for use in interpolation using the data from Table 1106.2(1).

(Equation 11-1)

$$De = (\text{width} \times \text{length})^{1/2}$$

where:

De = equivalent circular diameter and De, width and length are in inches.

~~31.~~ 30. Change Section 1106.3 and Table 1106.3 of the IPC to read:

1106.3 Building storm drains and sewers. The size of the building storm drain, building storm sewer and their horizontal branches having a slope of 1/2 unit or less vertical in 12 units horizontal (4% slope) shall be based on the maximum projected roof area in accordance with Table 1106.3. The slope of horizontal branches shall be not less than 1/8 unit vertical in 12 units horizontal (1% slope) unless otherwise approved.

Table 1106.3						
Size of Horizontal Storm Drainage Piping						
Size of Horizontal Piping (inches)	Horizontally Projected Roof Area (square feet)					
	Rainfall rate (inches per hour)					
	1	2	3	4	5	6
1/8 unit vertical in 12 units horizontal (1% slope)						
3	3,288	1,644	1,096	822	657	548
4	7,520	3,760	2,506	1,800	1,504	1,253
5	13,360	6,680	4,453	3,340	2,672	2,227
6	21,400	10,700	7,133	5,350	4,280	3,566
8	46,000	23,000	15,330	11,500	9,200	7,600

10	82,800	41,400	27,600	20,700	16,580	13,800
12	133,200	66,600	44,400	33,300	26,650	22,200
15	218,000	109,000	72,800	59,500	47,600	39,650
1/4 unit vertical in 12 units horizontal (2% slope)						
3	4,640	2,320	1,546	1,160	928	773
4	10,600	5,300	3,533	2,650	2,120	1,766
5	18,880	9,440	6,293	4,720	3,776	3,146
6	30,200	15,100	10,066	7,550	6,040	5,033
8	65,200	32,600	21,733	16,300	13,040	10,866
10	116,800	58,400	38,950	29,200	23,350	19,450
12	188,000	94,000	62,600	47,000	37,600	31,350
15	336,000	168,000	112,000	84,000	67,250	56,000
1/2 unit vertical in 12 units horizontal (4% slope)						
3	6,576	3,288	2,295	1,644	1,310	1,096
4	15,040	7,520	5,010	3,760	3,010	2,500
5	26,720	13,360	8,900	6,680	5,320	4,450
6	42,800	21,400	13,700	10,700	8,580	7,140
8	92,000	46,000	30,650	23,000	18,400	15,320
10	171,600	85,800	55,200	41,400	33,150	27,600
12	266,400	133,200	88,800	66,600	53,200	44,400
15	476,000	238,000	158,800	119,000	95,300	79,250
For SI: 1 inch = 25.4 mm, 1 square foot = 0.0929 m ² .						

~~32-~~ 31. Change Section 1106.6 and Table 1106.6 of the IPC to read:

1106.6 Size of roof gutters. The size of semicircular gutters shall be based on the maximum projected roof area in accordance with Table 1106.6.

Table 1106.6						
Size of Semicircular Roof Gutters						
Diameter of Gutters (inches)	Horizontally Projected Roof Area (square feet)					
	Rainfall rate (inches per hour)					
	1	2	3	4	5	6
1/16 unit vertical in 12 units horizontal (0.5% slope)						

3	680	340	226	170	136	113
4	1,440	720	480	360	288	240
5	2,500	1,250	834	625	500	416
6	3,840	1,920	1,280	960	768	640
7	5,520	2,760	1,840	1,380	1,100	918
8	7,960	3,980	2,655	1,990	1,590	1,325
10	14,400	7,200	4,800	3,600	2,880	2,400
1/8 unit vertical in 12 units horizontal (1% slope)						
3	960	480	320	240	192	160
4	2,040	1,020	681	510	408	340
5	3,520	1,760	1,172	880	704	587
6	5,440	2,720	1,815	1,360	1,085	905
7	7,800	3,900	2,600	1,950	1,560	1,300
8	11,200	5,600	3,740	2,800	2,240	1,870
10	20,400	10,200	6,800	5,100	4,080	3,400
1/4 unit vertical in 12 units horizontal (2% slope)						
3	1,360	680	454	340	272	226
4	2,880	1,440	960	720	576	480
5	5,000	2,500	1,668	1,250	1,000	834
6	7,680	3,840	2,560	1,920	1,536	1,280
7	11,040	5,520	3,860	2,760	2,205	1,840
8	15,920	7,960	5,310	3,980	3,180	2,655
10	28,800	14,400	9,600	7,200	5,750	4,800
1/2 unit vertical in 12 units horizontal (4% slope)						
3	1,920	960	640	480	384	320
4	4,080	2,040	1,360	1,020	816	680
5	7,080	3,540	2,360	1,770	1,415	1,180
6	11,080	5,540	3,695	2,770	2,220	1,850
7	15,600	7,800	5,200	3,900	3,120	2,600
8	22,400	11,200	7,460	5,600	4,480	3,730
10	40,000	20,000	13,330	10,000	8,000	6,660
For SI: 1 inch = 25.4 mm, 1 square foot = 0.0929 m ² .						

~~33-~~ 32. Add Section 1114 Values for Continuous Flow to the IPC.

~~34-~~ 33. Add Section 1114.1 to the IPC to read:

1114.1 Equivalent roof area. Where there is a continuous or semicontinuous discharge into the building storm drain or building storm sewer, such as from a pump, ejector, air conditioning plant, or similar device, each gallon per minute (L/m) of such discharge shall be computed as being equivalent to 96 square feet (9 m²) of roof area, based on a rainfall rate of 1 inch (25.4 mm) per hour.

34. Change Section 1201.1 of the IPC to read:

1201.1 Scope: The provisions of this chapter shall govern the design and installation of piping and storage systems for nonflammable medical gas systems and nonmedical oxygen systems. All maintenance and operations of such systems shall be in accordance with the Statewide Fire Prevention Code.

35. Change Sections 1301.1 through 1301.12 and add Sections 1301.13 through 1301.18, including subsections, to the IPC to read:

1301.1 Scope. The provisions of Chapter 13 shall govern the materials, design, construction, and installation of nonpotable water systems subject to this code. In addition to the applicable provision of this section, reclaimed water shall comply with the requirements of Section 1304.

1301.1.1 Design of nonpotable water systems. All portions of nonpotable water systems subject to this code shall be constructed using the same standards and requirements for the potable water systems or drainage systems as provided for in this code unless otherwise specified in this chapter.

1301.2 Makeup water. Makeup water shall be provided for all nonpotable water supply systems. The makeup water system shall be designed and installed to provide supply of water in the amounts and at the pressures specified in this code. The makeup water supply shall be potable and be protected against backflow in accordance with the applicable requirements of Section 608.

1301.2.1 Makeup water sources. Potable water shall be provided as makeup water for reclaimed water systems. Nonpotable water shall be permitted to serve as makeup water for gray water and rainwater systems.

1301.2.2 Makeup water supply valve. A full-open valve shall be provided on the makeup water supply line.

1301.2.3 Control valve alarm. Makeup water systems shall be fitted with a warning mechanism that alerts the user to a failure of the inlet control valve to close correctly. The alarm shall activate before the water within the storage tank begins to discharge into the overflow system.

1301.3 Sizing. Nonpotable water distribution systems shall be designed and sized for peak demand in accordance with approved engineering practice methods that comply with the applicable provisions of Chapter 6.

1301.4 Signage required. All nonpotable water outlets, other than water closets and urinals, such as hose connections, open-ended pipes, and faucets, shall be identified at the point of use for each outlet with signage that reads as follows: "Nonpotable water is utilized for (insert application name). Caution: nonpotable water. DO NOT DRINK." The words shall be legibly and indelibly printed on a tag or sign constructed of corrosion-resistant waterproof material or shall be indelibly printed on the fixture. The letters of the words shall be not less than 0.5 inches (12.7 mm) in height and in colors in contrast to the background on which they are applied. The pictograph shown in Figure 1301.4 shall appear on the signage required by this section.



1301.5 Potable water supply system connections. Where a potable water supply system is connected to a nonpotable water system, the potable water supply shall be protected against backflow in accordance with the applicable provisions of Section 608.

1301.6 Nonpotable water system connections. Where a nonpotable water system is connected and supplies water to another nonpotable water system, the nonpotable water system that supplies water shall be protected against backflow in accordance with the applicable provisions of Section 608.

1301.7 Approved components and materials. Piping, plumbing components, and materials used in the nonpotable water drainage and distribution systems shall be approved for the intended application and compatible with the water and any disinfection or treatment systems used.

1301.8 Insect and vermin control. Nonpotable water systems shall be protected to prevent the entrance of insects and vermin into storage and piping systems. Screen materials shall be compatible with system material and shall not promote corrosion of system components.

1301.9 Freeze protection. Nonpotable water systems shall be protected from freezing in accordance with the applicable provisions of Chapter 3.

1301.10 Nonpotable water storage tanks. Nonpotable water storage tanks shall be approved for the intended application and comply with Sections 1301.10.1 through 1301.10.12.

1301.10.1 Sizing. The holding capacity of storage tanks shall be sized for the intended use.

1301.10.2 Inlets. Storage tank inlets shall be designed to introduce water into the tank and avoid agitating the contents of the storage tank. The water supply to storage tanks shall be controlled by fill valves or other automatic supply valves designed to stop the flow of incoming water before the tank contents reach the overflow pipes.

1301.10.3 Outlets. Outlets shall be located at least four inches (102 mm) above the bottom of the storage tank and shall not skim water from the surface.

1301.10.4 Materials and location. Storage tanks shall be constructed of material compatible with treatment systems used to treat water. Above-grade storage vessels shall be constructed using opaque, UV-resistant materials, such as tinted plastic, lined metal, concrete, or wood or painted to prevent algae growth. Above-grade storage tanks shall be protected from direct sunlight unless their design specifically incorporates the use of the sunlight heat transfer. Wooden storage tanks shall be provided with a flexible liner. Storage tanks and their manholes shall not be located directly under soil or waste piping or sources of contamination.

1301.10.5 Foundation and supports. Storage tanks shall be supported on a firm base capable of withstanding the storage tank's weight when filled to capacity. Storage tanks shall be supported in accordance with the applicable provisions of the IBC.

1301.10.5.1 Ballast. Where the soil can become saturated, an underground storage tank shall be ballasted or otherwise secured to prevent the effects of buoyancy. The combined weight of the tank and hold down ballast shall meet or exceed the buoyancy force of the tank. Where the installation requires a foundation, the foundation shall be flat and shall be designed to support the storage tank weight when full, consistent with the bearing capability of adjacent soil.

1301.10.5.2 Structural support. Where installed below grade, storage tank installations shall be designed to withstand earth and surface structural loads without damage.

1301.10.6 Overflow. The storage tank shall be equipped with an overflow pipe having a diameter not less than that shown in Table 606.5.4. The overflow outlet shall discharge at a point not less than six inches (152 mm) above the roof or roof drain, floor or floor drain, or over an open water-supplied fixture. The overflow outlet shall terminate through a check valve. Overflow pipes shall not be directed on walkways. The overflow drain shall not be equipped with a shutoff valve. A minimum of one cleanout shall be provided on each overflow pipe in accordance with the applicable provisions of Section 708.

1301.10.7 Access. A minimum of one access opening shall be provided to allow inspection and cleaning of the tank interior. Access openings shall have an approved locking device or other approved method of securing access. Below grade storage tanks, located outside of the building, shall be provided with either a manhole not less than 24 inches (610 mm) square or a manhole with an inside diameter not less than 24 inches (610 mm). The design and installation of access openings shall prohibit surface water from entering the tank. Each manhole cover shall have an approved locking device or other approved method of securing access.

Exception: Storage tanks under 800 gallons (3028 L) in volume installed below grade shall not be required to be equipped with a manhole, but shall have an access opening not less than eight inches (203 mm) in diameter to allow inspection and cleaning of the tank interior.

1301.10.8 Venting. Storage tanks shall be vented. Vents shall not be connected to sanitary drainage system. Vents shall be at least equal in size to the internal diameter of the drainage inlet pipe connected to the tank. Where installed at grade, vents shall be protected from contamination by means of a U-bend installed with the opening directed downward. Vent outlets shall extend a minimum of 12 inches (304.8 mm) above grade or as necessary to prevent surface water from entering the storage tank. Vent openings shall be protected against the entrance of vermin and insects. Vents serving gray water tanks shall terminate in accordance with the applicable provisions of Sections 903 and 1301.8.

1301.10.9 Drain. Where drains are provided, they shall be located at the lowest point of the storage tank. The tank drain pipe shall discharge as required for overflow pipes and shall not be smaller in size than specified in Table 606.5.7. A minimum of one cleanout shall be provided on each drain pipe in accordance with Section 708.

1301.10.10 Labeling and signage. Each nonpotable water storage tank shall be labeled with its rated capacity and the location of the upstream bypass valve. Underground and otherwise concealed storage tanks shall be labeled at all access points. The label shall read: "CAUTION: NONPOTABLE WATER – DO NOT DRINK." Where an opening is provided that could allow the entry of personnel, the opening shall be marked with the words: "DANGER – CONFINED SPACE." Markings shall be indelibly printed on a tag or sign constructed of corrosion-resistant waterproof material mounted on the tank or shall be indelibly printed on the tank. The letters of the words shall be not less than 0.5 inches (12.7 mm) in height and shall be of a color in contrast with the background on which they are applied.

1301.10.11 Storage tank tests. Storage tanks shall be tested in accordance with the following:

1. Storage tanks shall be filled with water to the overflow line prior to and during inspection. All seams and joints shall be left exposed and the tank shall remain watertight without leakage for a period of 24 hours.

2. After 24 hours, supplemental water shall be introduced for a period of 15 minutes to verify proper drainage of the overflow system and verify that there are no leaks.

3. Following a successful test of the overflow, the water level in the tank shall be reduced to a level that is at two inches (50.8 mm) below the makeup water offset point. The tank drain shall be observed for proper operation. The makeup water system shall be observed for proper operation, and successful automatic shutoff of the system at the refill threshold shall be verified. Water shall not be drained from the overflow at any time during the refill test.

4. Air tests shall be permitted in lieu of water testing as recommended by the tank manufacturer or the tank standard.

1301.10.12 Structural strength. Storage tanks shall meet the applicable structural strength requirements of the IBC.

1301.11 Trenching requirements for nonpotable water system piping. Underground nonpotable water system piping shall be horizontally separated from the building sewer and potable water piping by five feet (1524 mm) of undisturbed or compacted earth. Nonpotable water system piping shall not be located in, under, or above sewage systems cesspools, septic tanks, septic tank drainage fields, or seepage pits. Buried nonpotable system piping shall comply with the requirements of this code for the piping material installed.

Exceptions:

1. The required separation distance shall not apply where the bottom of the nonpotable water pipe within five feet (1524 mm) of the sewer is equal to or greater than 12 inches (305 mm) above the top of the highest point of the sewer and the pipe materials conform to Table 702.3.
2. The required separation distance shall not apply where the bottom of the potable water service pipe within five feet (1524 mm) of the nonpotable water pipe is a minimum of 12 inches (305 mm) above the top of the highest point of the nonpotable water pipe and the pipe materials comply with the requirements of Table 605.4.
3. Nonpotable water pipe is permitted to be located in the same trench with building sewer piping, provided that such sewer piping is constructed of materials that comply with the requirements of Table 702.2.
4. The required separation distance shall not apply where a nonpotable water pipe crosses a sewer pipe, provided that the pipe is sleeved to at least five feet (1524 mm) horizontally from the sewer pipe centerline on both sides of such crossing with pipe materials that comply with Table 702.2.

5. The required separation distance shall not apply where a potable water service pipe crosses a nonpotable water pipe, provided that the potable water service pipe is sleeved for a distance of at least five feet (1524 mm) horizontally from the centerline of the nonpotable pipe on both sides of such crossing with pipe materials that comply with Table 702.2.

1301.12 Outdoor outlet access. Sillcocks, hose bibs, wall hydrants, yard hydrants, and other outdoor outlets that are supplied by nonpotable water shall be located in a locked vault or shall be operable only by means of a removable key.

1301.13 Drainage and vent piping and fittings. Nonpotable drainage and vent pipe and fittings shall comply with the applicable material standards and installation requirements in accordance with provisions of Chapter 7.

1301.13.1. Labeling and marking. Identification of nonpotable drainage and vent piping shall not be required.

1301.14 Pumping and control system. Mechanical equipment, including pumps, valves, and filters, shall be accessible and removable in order to perform repair, maintenance, and cleaning. The minimum flow rate and flow pressure delivered by the pumping system shall be designed for the intended application in accordance with the applicable provisions of Section 604.

1301.15 Water-pressure reducing valve or regulator. Where the water pressure supplied by the pumping system exceeds 80 psi (552 kPa) static, a pressure-reducing valve shall be installed to reduce the pressure in the nonpotable water distribution system piping to 80 psi (552 kPa) static or less. Pressure-reducing valves shall be specified and installed in accordance with the applicable provisions of Section 604.8.

1301.16 Distribution pipe. Distribution piping utilized in nonpotable water systems shall comply with Sections 1301.16.1 through 1301.16.4.

1301.16.1 Materials, joints, and connections. Distribution piping and fittings shall comply with the applicable material standards and installation requirements in accordance with the applicable provisions of Chapter 6.

1301.16.2 Design. Distribution piping shall be designed and sized in accordance with the applicable provisions of Chapter 6.

1301.16.3 Labeling and marking. Distribution piping labeling and marking shall comply with Section 608.9.

1301.16.4 Backflow prevention. Backflow preventers shall be installed in accordance with the applicable provisions of Section 608.

1301.17 Tests and inspections. Tests and inspections shall be performed in accordance with Sections 1301.17.1 through 1301.17.5.

1301.17.1 Drainage and vent pipe test. Drain, waste, and vent piping used for gray water and rainwater nonpotable water systems shall be tested in accordance with the applicable provisions of Section 312.

1301.17.2 Storage tank test. Storage tanks shall be tested in accordance with Section 1301.10.11.

1301.17.3 Water supply system test. Nonpotable distribution piping shall be tested in accordance with Section ~~312.5~~, 312.6.

1301.17.4 Inspection and testing of backflow prevention assemblies. The testing of backflow preventers and backwater valves shall be conducted in accordance with Section ~~312.10~~, 312.11.

1301.17.5 Inspection of vermin and insect protection. Inlets and vent terminations shall be visually inspected to verify that each termination is installed in accordance with Section 1301.10.8.

1301.18 Operation and maintenance manuals. Operations and maintenance ~~materials~~ manuals for nonpotable water systems shall be provided as prescribed by the system component manufacturers and supplied to the owner to be kept in a readily accessible location.

36. Change the title of Section 1302 of the IPC to "Gray Water Nonpotable Water Systems."

37. Change Sections 1302.1 through 1302.6, including subsections, of the IPC to read as follows:

1302.1 Gray water nonpotable water systems. This code is applicable to the plumbing fixtures, piping or piping systems, storage tanks, drains, appurtenances, and appliances that are part of the distribution system for gray water within buildings and to storage tanks and associated piping that are part of the distribution system for gray water outside of buildings. This code does not regulate equipment used for or the methods of processing, filtering, or treating gray water that may be regulated by the Virginia Department of Health or the Virginia Department of Environmental Quality.

1302.1.1 Separate systems. Gray water nonpotable water systems, unless approved otherwise under the permit from the Virginia Department of Health, shall be separate from the potable water system of a building with no cross connections between the two systems except as permitted by the Virginia Department of Health.

1302.2 Water quality. Each application of gray water reuse shall meet the minimum water quality requirements set forth in Sections 1302.2.1 through 1302.2.4 unless otherwise superseded by other state agencies.

1302.2.1 Disinfection. Where the intended use or reuse application for nonpotable water requires disinfection, other treatment, or both, it shall be disinfected as needed to ensure that the required water quality is delivered at the point of use or reuse.

1302.2.2 Residual disinfectants. Where chlorine is used for disinfection, the nonpotable water shall contain not more than four parts per million (4 mg/L) of free chlorine, combined chlorine, or total chlorine. Where ozone is used for disinfection, the nonpotable water shall not exceed 0.1 parts per million (by volume) of ozone at the point of use.

1302.2.3 Filtration. Water collected for reuse shall be filtered as required for the intended end use. Filters shall be accessible for inspection and maintenance. Filters shall utilize a pressure gauge or other approved method to indicate when a filter requires servicing or replacement. Shutoff valves installed immediately upstream and downstream of the filter shall be included to allow for isolation during maintenance.

1302.2.4 Filtration required. Gray water utilized for water closet and urinal flushing applications shall be filtered by a 100 micron or finer filter.

1302.3 Storage tanks. Storage tanks utilized in gray water nonpotable water systems shall comply with Section 1301.10.

1302.4 Retention time limits. Untreated gray water shall be retained in storage tanks for a maximum of 24 hours.

1302.5 Tank Location. Storage tanks shall be located with a minimum horizontal distance between various elements as indicated in Table 1302.5.1.

Table 1302.5.1 Location of Nonpotable Gray Water Reuse Storage Tanks	
Element	Minimum Horizontal Distance from Storage Tank (feet)
Lot line adjoining private lots	5
Sewage systems	5
Septic tanks	5
Water wells	50
Streams and lakes	50
Water service	5
Public water main	10

1302.6 Valves. Valves shall be supplied on gray water nonpotable water drainage systems in accordance with Sections 1302.6.1 and 1302.6.2.

1302.6.1 Bypass valve. One three-way diverter valve certified to NSF 50 or other approved device shall be installed on collection piping upstream of each storage tank or drainfield as

applicable, to divert untreated gray water to the sanitary sewer to allow servicing and inspection of the system. Bypass valves shall be installed downstream of fixture traps and vent connections. Bypass valves shall be labeled to indicate the direction of flow, connection, and storage tank or drainfield connection. Bypass valves shall be provided with access for operation and maintenance. Two shutoff valves shall not be installed to serve as a bypass valve.

1302.6.2 Backwater valve. Backwater valves shall be installed on each overflow and tank drain pipe to prevent unwanted water from draining back into the storage tank. If the overflow and drain piping arrangement is installed to physically not allow water to drain back into the tank, such as in the form of an air gap, backwater valves shall not be required. Backwater valves shall be constructed and installed in accordance with Section 715.

38. Delete Sections 1302.7 through 1302.13.4, including subsections, of the IPC.

39. Change the title of Section 1303 of the IPC to "Rainwater Nonpotable Water Systems."

40. Change Sections 1303.1 through 1303.10, including subsections, of the IPC to read as follows:

1303.1 General. The provisions of this section shall govern the design, construction, installation, alteration, and repair of rainwater nonpotable water systems for the collection, storage, treatment, and distribution of rainwater for nonpotable applications. The provisions of CSA B805/ICC 805 shall be permitted as an alternative to the provisions contained in this section for the design, construction, installation, alteration, and repair of rainwater nonpotable water systems for the collection, storage, treatment, and distribution of rainwater for nonpotable applications. Roof runoff or stormwater runoff collection surfaces shall be limited to roofing materials, public pedestrian accessible roofs, and subsurface collection identified in CSA B805/ICC 805 Table 7.1. Stormwater runoff shall not be collected from any other surfaces.

1303.2 Water quality. Each application of rainwater reuse shall meet the minimum water quality requirements set forth in Sections 1303.2.1 through 1303.2.4 unless otherwise superseded by other state agencies.

1303.2.1 Disinfection. Where the intended use or reuse application for nonpotable water requires disinfection, other treatment, or both, it shall be disinfected as needed to ensure that the required water quality is delivered at the point of use or reuse.

1303.2.2 Residual disinfectants. Where chlorine is used for disinfection, the nonpotable water shall contain not more than four parts per million (4 mg/L) of free chlorine, combined chlorine, or total chlorine. Where ozone is used for disinfection, the nonpotable water shall not exceed 0.1 parts per million (by volume) of ozone at the point of use.

1303.2.3 Filtration. Water collected for reuse shall be filtered as required for the intended end use. Filters shall be accessible for inspection and maintenance. Filters shall utilize a

pressure gauge or other approved method to indicate when a filter requires servicing or replacement. Shutoff valves installed immediately upstream and downstream of the filter shall be included to allow for isolation during maintenance.

1303.2.4 Filtration required. Rainwater utilized for water closet and urinal flushing applications shall be filtered by a 100 micron or finer filter.

1303.3 Collection surface. Rainwater shall be collected only from aboveground impervious roofing surfaces constructed from approved materials. Overflow or discharge piping from appliances, equipment, or both, including evaporative coolers, water heaters, and solar water heaters shall not discharge onto rainwater collection surfaces.

1303.4 Collection surface diversion. At a minimum, the first 0.04 inches (1.016 mm) of each rain event of 25 gallons (94.6 L) per 1,000 square feet (92.9 m²) shall be diverted from the storage tank by automatic means and not require the operation of manually operated valves or devices. Diverted water shall not drain onto other collection surfaces that are discharging to the rainwater system or to the sanitary sewer. Such water shall be diverted from the storage tank and discharged in an approved location.

1303.5 Pre-tank filtration. Downspouts, conductors, and leaders shall be connected to a pre-tank filtration device. The filtration device shall not permit materials larger than 0.015 inches (0.4 mm).

1303.6 Roof gutters and downspouts. Gutters and downspouts shall be constructed of materials that are compatible with the collection surface and the rainwater quality for the desired end use. Joints shall be made watertight.

1303.6.1 Slope. Roof gutters, leaders, and rainwater collection piping shall slope continuously toward collection inlets. Gutters and downspouts shall have a slope of not less than one unit in 96 units along their entire length and shall not permit the collection or pooling of water at any point.

Exception: Siphonic roof drainage systems installed in accordance with Chapter 11 shall not be required to have slope.

1303.6.2 Size. Gutters and downspouts shall be installed and sized in accordance with Section 1106.6 and local rainfall rates.

1303.6.3 Cleanouts. Cleanouts or other approved openings shall be provided to permit access to all filters, flushes, pipes, and downspouts.

1303.7 Storage tanks. Storage tanks utilized in rainwater nonpotable water systems shall comply with Section 1301.10.

1303.8 Location. Storage tanks shall be located with a minimum horizontal distance between various elements as indicated in Table 1303.8.1.

Table 1303.8.1 Location of Rainwater Storage Tanks	
Element	Minimum Horizontal Distance from Storage Tank (feet)
Lot line adjoining private lots	5
Sewage systems	5
Septic tanks	5

1303.9 Valves. Valves shall be installed in collection and conveyance drainage piping of rainwater nonpotable water systems in accordance with Sections 1303.9.1 and 1303.9.2.

1303.9.1 Influent diversion. A means shall be provided to divert storage tank influent to allow maintenance and repair of the storage tank system.

1303.9.2 Backwater valve. Backwater valves shall be installed on each overflow and tank drain pipe to prevent unwanted water from draining back into the storage tank. If the overflow and drain piping arrangement is installed to physically not allow water to drain back into the tank, such as in the form of an air gap, backwater valves shall not be required. Backwater valves shall be constructed and installed in accordance with Section 714.

1303.10 Tests and inspections. Tests and inspections shall be performed in accordance with Sections 1303.10.1 through 1303.10.2.

1303.10.1 Roof gutter inspection and test. Roof gutters shall be inspected to verify that the installation and slope is in accordance with Section 1303.6.1. Gutters shall be tested by pouring a minimum of one gallon of water into the end of the gutter opposite the collection point. The gutter being tested shall not leak and shall not retain standing water.

1303.10.2 Collection surface diversion test. A collection surface diversion test shall be performed by introducing water into the gutters or onto the collection surface area. Diversion of the first quantity of water in accordance with the requirements of Section 1303.4 shall be verified.

41. Delete Sections 1303.11 through 1303.16.4, including subsections, of the IPC.

42. Change Sections 1304.1 and 1304.2 of the IPC to read as follows:

1304.1 General. Reclaimed water, water reclamation systems, reclaimed water distribution systems, and allowable nonpotable reuses of reclaimed water are as defined or specified in and governed by the Virginia Water Reclamation and Reuse Regulation (9VAC25-740). Permits from the Virginia State Water Control Board are required for such systems and reuses. The provisions of Section 1304 shall govern the design, construction, installation, alterations, and repair of plumbing fixtures, piping or piping systems, storage tanks, drains,

appurtenances, and appliances that are part of the distribution system for reclaimed water within buildings and to storage tanks for reclaimed water as defined in the Virginia Water Reclamation and Reuse Regulation (9VAC25-740) and associated piping outside of buildings that deliver reclaimed water into buildings. Where conflicts occur between this code and the Virginia Water Reclamation and Reuse Regulation (9VAC25-740), the provisions of the Virginia Water Reclamation and Reuse Regulation (9VAC25-740) shall apply unless determined otherwise by the Virginia Department of Environmental Quality and DHCD through a memorandum of agreement.

1304.2 Design of reclaimed water systems. The design of reclaimed water systems shall conform to applicable requirements of Section 1301.

Exception: The design of reclaimed water systems shall conform to applicable requirements of the Virginia Water Reclamation and Reuse Regulation (9VAC25-740) for the following:

1. Identification, labeling, and posting of signage for reclaimed water systems in lieu of signage requirements described in Section 1301.4.
2. Sizing of system storage as defined in the Virginia Water Reclamation and Reuse Regulation (9VAC25-740), in addition to storage sizing requirements described in Section 1301.10.1.
3. Signage and labeling for reclaimed water storage in addition to labeling and signage requirements described in Section 1301.10.10.
4. Minimum separation distances and configurations for in-ground reclaimed water distribution piping in lieu of trenching requirements for nonpotable water systems described in Section 1301.11.

43. Delete Sections 1304.3 and 1304.4, including subsections, of the IPC.

C. Change Section 2902.1 of the IBC to read:

2902.1 Minimum number of fixtures. Plumbing fixtures shall be provided in the minimum number as shown in Table 403.1 of the VPC based on the actual use of the building or space. Uses not shown in Table 403.1 of the VPC shall be considered individually by the code official. The number of occupants shall be determined by this code.

D. Delete Table 2902.1 and Sections 2902.1.1 through 2902.7.

E. Delete Section 2903, including subsections, of the IBC.

13VAC5-63-330. Chapter 30 Elevators and conveying systems.

A. Add an exception to Section 3002.4 of the IBC to read:

Exception: Elevators in multistory dwelling units or guest rooms.

B. Change Section 3003.3 of the IBC to read:

3003.3 Fire service elevator keys. All elevators shall be equipped to operate with either a standardized or non-standardized fire service elevator key in accordance with the IFC.

C. Change Section 3005.4 of the IBC to read:

3005.4 Machine and control rooms, control spaces, and machinery spaces. Elevator machine rooms, rooms and spaces housing elevator controllers, and machinery spaces outside of but attached to a hoistway that have openings into the hoistway shall be enclosed with fire barriers constructed in accordance with Section 707, horizontal assemblies constructed in accordance with Section 711, or both. The fire-resistance rating shall not be less than the required rating of the hoistway enclosure. Openings in the fire barriers shall be protected with assemblies having a fire protection rating not less than that required for the hoistway enclosure doors.

Exceptions:

1. For other than fire service access elevators and occupant evacuation elevators, where elevator machine rooms, rooms and spaces housing elevator controllers, and machinery spaces do not abut and do not have openings to the hoistway enclosure they serve, the fire barrier constructed in accordance with Section 707, horizontal assemblies constructed in accordance with Section 711, or both shall be permitted to be reduced to a one-hour fire-resistance rating.
2. For other than fire service access elevators and occupant evacuation elevators, in buildings four stories or less above grade plane when elevator machine rooms, rooms and spaces housing elevator controllers, and machinery spaces do not abut and have no openings to the hoistway enclosure they serve, the elevator machine rooms, rooms and spaces housing elevator controllers, and machinery spaces are not required to be fire-resistance rated.

D. Add Section 3005.7 to the IBC to read:

3005.7 Machine-room-less designs. Where machine-room-less designs are utilized they shall comply with the provisions of ASME A17.1 and incorporate the following:

1. Where the elevator car-top will be used as a work platform, it shall be equipped with permanently installed guards on all open sides. Guards shall be permitted to be of collapsible design but otherwise must conform to all applicable requirements of this code for guards.
2. Where the equipment manufacturer's procedures for machinery removal and replacement depend on overhead structural support or lifting points, such supports or lifting points shall be permanently installed at the time of initial equipment installation.
3. Where the structure that the elevator will be located in is required to be fully sprinklered by this code, the hoistway that the elevator machine is located in shall be equipped with a

fire suppression system as a machine room in accordance with NFPA 13. Smoke detectors for the automatic initiation of Phase I Emergency Recall Operation and heat detectors or other approved devices that automatically disconnect the main line power supply to the elevators, shall be installed within the hoistway.

E. Change Section 3006.1 (Items 1 through 5 remain) of the IBC to read:

3006.1 General. Where provided to comply with applicable requirements set forth elsewhere in this code, elevator hoistway openings and enclosed elevator lobbies shall be provided in accordance with the following:

F. ~~Change exception to 3007.6 to read:~~

~~Exception: Where a fire service access elevator has two entrances onto a floor, the second entrance shall be permitted to be protected in accordance with Section 3006.3 of the IBC.~~

G. Change Section 3008.1 of the IBC to read:

3008.1 General. Where elevators in buildings greater than 420 feet (128,016 mm) in building height are to be used for occupant self-evacuation during fires, passenger elevators for general public use shall comply with this section.

13VAC5-63-336. Chapter 31 Special construction.

A. Change Section 3107.1 of the IBC to read:

3107.1 General. Signs shall be designed and constructed in accordance with this code.

B. Change the title of IBC Section 3109 to read:

Swimming Pools, Swimming Pool Enclosures, and Aquatic Recreational Facilities.

~~B. C.~~ Change Section 3109.1 of the IBC to read as follows, add Section 3109.1.1 to the IBC to read as follows:

3109.1 General. Swimming pools, swimming pool enclosures, and aquatic recreational facilities, as that term is defined in the ISPSC, shall comply with applicable provisions of the ISPSC.

3109.1.1 Changes to the ISPSC. The following changes shall be made to the ISPSC:

1. Add Section 410.2 and related subsections to the ISPSC to read:

410.2 Showers. Showers shall be in accordance with Sections 410.2.1 through 410.2.5.

410.2.1 Deck hand shower or shower spray unit. Not less than one and not greater than half of the total number of showers required by Section 410.1 shall be a hand shower or spray shower unit located on the deck of or at the entrance of each pool.

410.2.2 Anti-scald device. Where heated water is provided to the showers, the shower water supply shall be controlled by an anti-scald device.

410.2.3 Water heater and mixing valve. Bather access to water heaters and thermostatically controlled mixing valves for showers shall be prohibited.

410.2.4 Flow rate. Each showerhead shall have a water flow of not less than two gallons per minute (7.6 lpm).

410.2.5 Temperature. At each showerhead, the heated shower water temperature shall not exceed 120°F (49°C) and shall not be less than 90°F (32°C).

2. Change Section 609.3.1 of the ISPSC to read:

609.3.1 Deck hand shower or shower spray unit. Not less than one and not greater than half of the total number of showers required by Section 609.2 shall be a hand shower or shower spray unit located on the deck of or at the entrance of each pool.

C. D. Delete Section 3113 of the IBC in its entirety.

E. Change item 3 of Section 3114.8.4.2 of the IBC (items 1 and 2 remain) to read:

3. Where all or portions of the profiled steel panel elements are retained and integrated into a seismic force-resisting system other than as permitted by Item 1, seismic design parameters shall be developed from testing and analysis in accordance with Section 112.2 and ASCE 7, Section 12.2.1.1 or 12.2.1.2.

13VAC5-63-340. Chapter 33 Safeguards during construction.

A. Delete Section ~~3302.1~~ 3301.4 of the IBC.

B. Add Sections ~~3302.4~~ 3301.6 and ~~3302.5~~ 3301.7 to the IBC to read:

~~3302.4~~ 3301.6 Separations between construction areas. Separations used in Type I and Type II construction to separate construction areas from occupied portions of the building shall be constructed of materials that comply with one of the following:

1. Noncombustible materials.
2. Materials that exhibit a flame spread index not exceeding 25 when tested in accordance with ASTM E84 or UL 723.
3. Materials exhibiting a peak heat release rate not exceeding 300 kW/m² when tested in accordance with ASTM E1354 at an incident heat flux of 50 kW/m² in the horizontal orientation on specimens at the thickness intended for use.

~~3302.5~~ 3301.7 Fire safety requirements for buildings of Types IV-A, IV-B, and IV-C construction. Buildings of Types IV-A, IV-B, and IV-C construction designed to be greater than six stories above grade plane shall comply with the following requirements during construction unless otherwise approved by the building code official:

1. Standpipes shall be provided in accordance with Section 3311.

2. A water supply for fire department operations, as approved by the fire code official and the fire chief.

3. Where building construction exceeds six stories above grade plane and noncombustible protection is required by Section 602.4, at least one layer of noncombustible protection shall be installed on all building elements on floor levels, including mezzanines, more than four levels below active mass timber construction before additional floor levels can be erected.

Exception: Shafts and vertical exit enclosures shall not be considered part of the active mass timber construction.

4. Where building construction exceeds six stories above grade plane, required exterior wall coverings shall be installed on floor levels, including mezzanines, more than four levels below active mass timber construction before additional floor levels can be erected.

Exception: Shafts and vertical exit enclosures shall not be considered part of the active mass timber construction.

C. Change Section 3302.3.1 of the IBC to read:

Failure to properly conduct, document and maintain documentation required by this section shall constitute an unlawful act in accordance with Section 115 and shall result in the issuance of a notice of violation to the site safety director in accordance with Section 115.2. Upon the third offense, the building official is authorized to issue a stop work order in accordance with Section 114, and work shall not resume until satisfactory assurances of future compliance have been presented to and approved by the building official.

D. Delete IBC Sections 3303 and 3305 in their entirety.

~~D.~~ E. Change Section 3310.2 of the IBC to read:

3310.2 Maintenance of means of egress. Means of egress and required accessible means of egress shall be maintained at all times during construction.

~~E.~~ F. Change Section 3312.1 of the IBC to read:

3312.1 Completion before occupancy. In buildings where an automatic sprinkler system is required by this code, it shall be unlawful to occupy any portion of a building or structure until the automatic sprinkler system installation has been tested and approved, except as provided in Section 116.1.1.

~~F.~~ G. Delete exception to Section 3313.1 and change Section 3313.1 of the IBC to read:

3313.1 Where required. An approved water supply for fire protection, either temporary or permanent, shall be made available as soon as combustible building materials arrive on the site, on commencement of vertical combustible construction, and on installation of a standpipe

system in buildings under construction, in accordance with the Virginia Statewide Fire Prevention Code.

~~G. H.~~ Delete Sections 3313.2, 3313.3, 3313.3.1, 3313.3.2, 3313.3.3, 3313.4, and 3313.5 of the IBC.

13VAC5-63-360. Chapter 35 Referenced standards.

A. Add the following standards to the list of referenced standards in Chapter 35 of the IBC:

Standard reference number	Title
ASTM E329-02	Standard Specification for Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction
API 650-09	Welded Steel Tanks for Oil Storage
API 653-09	Tank Inspection, Repair, Alteration and Reconstruction
NFPA 91-15	Standard for Exhaust Systems for Air Conveying of Vapors, Mists and Particulate Solids
TFI RMIP-09	Aboveground Storage Tanks Containing Liquid Fertilizer, Recommended Mechanical Integrity Practices
~~UL 2075-13~~	~~Standard for Gas and Vapor Detectors and Sensors~~
~~ASCE/SEI 7-22~~	~~Minimum Design Loads and Associated Criteria for Buildings and Other Structures~~

B. Delete the following standards from the list of referenced standards in Chapter 35 of the IBC:

Standard reference number	Title
~~ASCE/SEI 7-16~~	~~Minimum Design Loads and Associated Criteria for Buildings and Other Structures~~

13VAC5-63-365. Appendix E Supplementary accessibility requirements.

Appendix E of the IBC shall be part of this code.

13VAC5-63-370. Appendix F Rodent proofing.

The following provisions of Appendix F of the IBC are part of this code:

F101.2 Foundation wall ventilation openings.

F101.6 Pier and wood construction. (Includes all provisions.)

13VAC5-63-380. Appendix H Signs.

The following provisions of Appendix H of the IBC are part of this code:

H101.2 Signs exempt from permits.

H102 Definitions. (Includes all definitions.)

H103 Location. (Includes Section H103.1.)

H105 through H115. (Includes all provisions.)

13VAC5-63-390. Appendix I Patio covers.

Appendix I of the IBC shall be part of this code.

DRAFT

USBC Part II

Existing Buildings

5/28/2025

13VAC5-63-400. Chapter 1 Administration; Section 101 General.

A. Section 101.1 Short title. The Virginia Uniform Statewide Building Code, Part II, Existing Buildings, may be cited as the "Virginia Existing Building Code" or as the "VEBC."

B. Section 101.2 Incorporation by reference. Chapters 2 through 16 of the ~~2021~~ 2024 International Existing Building Code, published by the International Code Council, Inc., are adopted and incorporated by reference to be an enforceable part of the VEBC. The term "IEBC" means the ~~2021~~ 2024 International Existing Building Code, published by the International Code Council, Inc. Any codes and standards referenced in the IEBC are also considered to be part of the incorporation by reference, except that such codes and standards are used only to the prescribed extent of each such reference.

C. Section 101.3 Numbering system. A dual numbering system is used in the VEBC to correlate the numbering system of the Virginia Administrative Code with the numbering system of the IEBC. IEBC numbering system designations are provided in the catchlines of the Virginia Administrative Code sections and cross references between sections or chapters of the VEBC use only the IEBC numbering system designations. The term "chapter" is used in the context of the numbering system of the IEBC and may mean a chapter in the VEBC, a chapter in the IEBC or a chapter in a referenced code or standard, depending on the context of the use of the term. The term "chapter" is not used to designate a chapter of the Virginia Administrative Code, unless clearly indicated.

D. Section 101.4 Arrangement of code provisions. The VEBC is comprised of the combination of (i) the provisions of Chapter 1, Administration, which are established herein, (ii) Chapters 2 through 16 of the IEBC, which are incorporated by reference in Section 101.2, and (iii) the changes to the text of the incorporated chapters of the IEBC that are specifically identified, including any new chapters added. The terminology "changes to the text of the incorporated chapters of the IEBC that are specifically identified, including any new chapters added" shall also be referred to as the "state amendments to the IEBC." Such state amendments to the IEBC are set out using corresponding chapter and section numbers of the IEBC numbering system. In addition, since Chapter 1 of the IEBC is not incorporated as part of the VEBC, any reference to a provision of Chapter 1 of the IEBC in the provisions of Chapters 2 through 16 of the IEBC is generally invalid. However, where the purpose of such a reference would clearly correspond to a provision of Chapter 1 established in this section, then the reference may be construed to be a valid reference to such corresponding Chapter 1 provision.

E. Section 101.5 Use of terminology and notes. The provisions of this code shall be used as follows:

1. The term "this code," or "the code," where used in the provisions of Chapter 1, in Chapters 2 through 16 of the IEBC, or in the state amendments to the IEBC, means the VEBC, unless the context clearly indicates otherwise.

2. The term "this code," or "the code," where used in a code or standard referenced in the VEBC, means that code or standard, unless the context clearly indicates otherwise.
3. The term "USBC" where used in this code, means the VCC, unless the context clearly indicates otherwise.
4. The use of notes in Chapter 1 is to provide information only and shall not be construed as changing the meaning of any code provision.
5. Notes in the IEBC, in the codes and standards referenced in the IEBC, and in the state amendments to the IEBC may modify the content of a related provision and shall be considered to be a valid part of the provision, unless the context clearly indicates otherwise.
6. References to International Codes and standards, where used in this code, include state amendments made to those International Codes and standards in the VCC.

Note: See Section 101.2 of the VCC for a list of major codes and standards referenced in the VCC.

F. Section 101.6 Order of precedence. The provisions of this code shall be used as follows:

1. The provisions of Chapter 1 of this code supersede any provisions of Chapters 2 through 16 of the IEBC that address the same subject matter and impose differing requirements.
2. The provisions of Chapter 1 of this code supersede any provisions of the codes and standards referenced in the IEBC that address the same subject matter and impose differing requirements.
3. The state amendments to the IEBC supersede any provisions of Chapters 2 through 16 of the IEBC that address the same subject matter and impose differing requirements.
4. The state amendments to the IEBC supersede any provisions of the codes and standards referenced in the IEBC that address the same subject matter and impose differing requirements.
5. The provisions of Chapters 2 through 16 of the IEBC supersede any provisions of the codes and standards referenced in the IEBC that address the same subject matter and impose differing requirements.

G. Section 101.7 Administrative provisions. The provisions of Chapter 1 establish administrative requirements, which include provisions relating to the scope and enforcement of the code. Any provisions of Chapters 2 through 16 of the IEBC or any provisions of the codes and standards referenced in the IEBC that address the same subject matter to a lesser or greater extent are deleted and replaced by the provisions of Chapter 1. Further, any administrative requirements contained in the state amendments to the IEBC shall be given the same precedence as the provisions of Chapter 1. Notwithstanding the provisions in this subsection, where administrative requirements of Chapters 2 through 16 of the IEBC or of the codes and standards referenced in the IEBC are specifically identified as valid administrative requirements in Chapter 1 of this code or in the state amendments to the IEBC, then such requirements are not deleted and replaced.

Note: The purpose of this provision is to eliminate overlap, conflicts, and duplication by providing a single standard for administrative, procedural, and enforcement requirements of this code.

H. Section 101.8 Definitions. The definitions of terms used in this code are contained in Chapter 2 along with specific provisions addressing the use of definitions. Terms may be defined in other chapters or provisions of the code and such definitions are also valid.

13VAC5-63-410. Section 102 Purpose and scope.

A. Section 102.1 Purpose. In accordance with § 36-99.01 of the Code of Virginia, the General Assembly of Virginia has declared that (i) there is an urgent need to improve the housing conditions of low and moderate income individuals and families, many of whom live in substandard housing, particularly in the older cities of the Commonwealth; (ii) there are large numbers of older residential buildings in the Commonwealth, both occupied and vacant that are in urgent need of rehabilitation and must be rehabilitated if the state's citizens are to be housed in decent, sound, and sanitary conditions; and (iii) the application of those building code requirements currently in force to housing rehabilitation has sometimes led to the imposition of costly and time-consuming requirements that result in a significant reduction in the amount of rehabilitation activity taking place.

The General Assembly further declares that (i) there is an urgent need to improve the existing condition of many of the Commonwealth's stock of commercial properties, particularly in older cities; (ii) there are large numbers of older commercial buildings in the Commonwealth, both occupied and vacant, that are in urgent need of rehabilitation and that must be rehabilitated if the citizens of the Commonwealth are to be provided with decent, sound, and sanitary work spaces; and (iii) the application of the existing building code to such rehabilitation has sometimes led to the imposition of costly and time-consuming requirements that result in a significant reduction in the amount of rehabilitation activity taking place.

B. Section 102.2 Scope. The provisions of this code shall govern construction and rehabilitation activities in existing buildings and structures.

C. 102.2.1 Group I-2 or I-3 applicability. A change of occupancy to Group I-2 or I-3 from another occupancy classification shall comply with the provisions of the VCC as required for new construction, not Chapter 7 of this code. All other provisions of the VEBC, including change of occupancy within an existing Group I-2 or I-3 classification, are applicable to Group I-2 or I-3.

D. 102.2.2 Reconstruction, alteration, or repair in Group R-5 occupancies. Compliance with this section shall be an acceptable alternative to compliance with this code at the discretion of the owner or owner's agent. The VCC may be used for the reconstruction, alteration, or repair of Group R-5 buildings or structures subject to the following criteria:

1. Any reconstruction, alteration, or repair shall not adversely affect the performance of the building or structure or cause the building or structure to become unsafe or lower existing levels of health and safety.

2. Parts of the building or structure not being reconstructed, altered, or repaired shall not be required to comply with the requirements of the VCC applicable to newly constructed buildings or structures.

3. The installation of material, equipment, or both that is neither required nor prohibited shall only be required to comply with the provisions of the VCC relating to the safe installation of such material or equipment.

4. Material, equipment, or both may be replaced in the same location with material or equipment of a similar kind or capacity.

5. In accordance with § 36-99.2 of the Code of Virginia, installation or replacement of glass shall comply with Section ~~R308~~ R324 or Chapter 24 of the VCC.

Exceptions:

1. This section shall not be construed to permit noncompliance with any applicable flood load or flood-resistant construction requirements of the VCC.

2. Reconstructed decks, balconies, porches, and similar structures located 30 inches (762 mm) or more above grade shall meet the current code provisions for structural loading capacity, connections, and structural attachment. This requirement excludes the configuration and height of handrails and guardrails.

3. Repair or replacement of smoke alarms shall be with devices listed in accordance with UL217 and that are no more than 10 years from the date of manufacture. Battery-only powered devices shall be powered by a 10-year sealed battery.

E. 102.2.3 Additions. Where one or more newly constructed fire walls that comply with Section 706 of the VCC is provided between an addition and the existing building, structure, or portions thereof, the addition shall be considered a separate building, and therefore, not an addition within the scope of this code. Such separate building, including the fire wall, shall be constructed in accordance with the VCC and shall not place the existing building or structure in nonconformance with the building code under which the existing building, structure, or the affected portions thereof was built or as previously approved.

13VAC5-63-420. Section 103 Application of code.

A. Section 103.1 General. All administrative provisions of the VCC, including requirements for permits, inspections, and approvals by the local building department, provisions for appeals from decisions of the local building department, and the issuance of modifications, are applicable to the use of this code, except where this code sets out differing requirements. Where there is a conflict between a general requirement and a specific requirement in the VEBC, the specific requirement shall govern.

B. Section 103.1.1 Use of performance code. Compliance with the provisions of a nationally recognized performance code when approved as a modification shall be considered to constitute compliance with

this code. All documents submitted as part of such consideration shall be retained in the permanent records of the local building department.

C. Section 103.1.2 Preliminary meeting. When requested by a prospective permit applicant or when determined necessary by the code official, the code official shall meet with the prospective permit applicant prior to the application for a permit to discuss plans for the proposed work or change of occupancy in order to establish the specific applicability of the provisions of this code.

D. Section 103.2 Change of occupancy. A building or structure undergoing a change of occupancy shall comply with the provisions of this code for change of occupancy, except as provided for in Section 102.2.1 for Group I-2 or I-3. Permitting, inspections, and certificate of occupancy issuance shall be in accordance with the administrative provisions of the VCC.

When impractical to achieve compliance with this code for the new occupancy, the building official shall consider modifications upon application and as provided for in Section 106.3 of the VCC.

E. Section 103.3 Retrofit requirements. The local building department shall enforce the provisions of Section 1101 that require certain existing buildings to be retrofitted with fire protection systems and other safety equipment. Retroactive fire protection system requirements contained in the ~~IFC~~ International Fire Code shall not be applicable unless required for compliance with the provisions of Section 1101.

F. Section 103.4 Nonrequired equipment. The following criteria for nonrequired equipment are in accordance with § 36-103 of the Code of Virginia. Building owners may elect to install partial or full fire alarms or other safety equipment that was not required by the edition of the VCC in effect at the time a building was constructed without meeting current requirements of the code, provided the installation does not create a hazardous condition. Permits for installation shall be obtained in accordance with the VCC. In addition, as a requirement of this code, when such nonrequired equipment is to be installed, the building official shall notify the appropriate fire official or fire chief.

G. Section 103.4.1 Reduction in function or discontinuance of nonrequired fire protection systems. When a nonrequired fire protection system is to be reduced in function or discontinued, it shall be done in such a manner so as not to create a false sense of protection. Generally, in such cases, any features visible from interior areas shall be removed, such as sprinkler heads, smoke detectors, or alarm panels or devices, but any wiring or piping hidden within the construction of the building may remain. Approval of the proposed method of reduction or discontinuance shall be obtained from the building official.

H. Section 103.5 Requirements relating to maintenance. Any requirements of the IEBC requiring the maintenance of existing buildings or structures are invalid.

Note: Requirements for the maintenance of existing buildings and structures and for unsafe conditions are contained in the ~~VMC~~ Virginia Property Maintenance Code (VPMC).

I. Section 103.6 Use of Appendix A. Appendix A of the IEBC provides guidelines for the seismic retrofit of existing buildings. The use of this appendix is not mandatory but shall be permitted to be utilized at the option of an owner, the owner's agent, or the registered design professional involved in a rehabilitation

project. However, in no case shall the use of Appendix A be construed to authorize the lowering of existing levels of health or safety in buildings or structures being rehabilitated.

J. Section 103.7 Use of Appendix B. Appendix B of the IEBC provides supplementary accessibility requirements for existing buildings and facilities. All applicable requirements of Appendix B shall be met in buildings and structures being rehabilitated.

K. Section 103.8 Use of Resource A. Resource A of the IEBC provides guidelines for the evaluation of fire resistance ratings of archaic materials and may be used in conjunction with rehabilitation projects.

L. 103.9 Construction documents. Construction documents shall be submitted with the application for a permit. The work proposed to be performed on an existing building or structure shall be classified on the construction documents as repairs, alterations, change of occupancy, addition, historic building, or moved building. Alterations shall further be classified as Level 1 or Level 2. Any required elevation certificate shall be prepared by a certified land surveyor or registered professional civil engineer licensed in Virginia.

Exception: Construction documents or classification of the work does not need to be submitted when the building official determines the proposed work does not require such documents, classification, or identification.

13VAC5-63-430. Chapter 2 Definitions.

A. Change Section 201.3 of the IEBC to read:

201.3 Terms defined in other codes. Where terms are not defined in this code and are defined in the other International Codes, such terms shall have the meanings ascribed to them in those codes, except that terms that are not defined in this code and that are defined in the VCC shall take precedence over other definitions.

B. Change the following definitions in Section 202 of the IEBC to read:

Building. A combination of materials, whether portable or fixed, having a roof to form a structure for the use or occupancy by persons or property. The word "building" shall be construed as though followed by the words "or part or parts thereof" unless the context clearly requires a different meaning. "Building" shall not include roadway tunnels and bridges owned by the Virginia Department of Transportation, which shall be governed by construction and design standards approved by the Commonwealth Transportation Board.

Change of occupancy. Either of the following shall be considered a change of occupancy where the current VCC requires a greater degree of structural strength, fire protection, means of egress, ventilation, or sanitation than is existing in the current building or structure:

1. Any change in the occupancy classification of a building or structure.
2. Any change in the purpose of, or a change in the level of activity within, a building or structure.

Note: The use and occupancy classification of a building or shall be determined in accordance with Chapter 3 of the VCC.

Existing building. A building for which a legal certificate of occupancy has been issued under any edition of the USBC or approved by the building official when no legal certificate of occupancy exists and that has been occupied for its intended use or a building built prior to the initial edition of the USBC.

Existing structure. A structure (i) for which a legal building permit has been issued under any edition of the USBC, (ii) that has been previously approved, or (iii) that was built prior to the initial edition of the USBC. For application of provisions in flood hazard areas, an existing structure is any building or structure for which the start of construction commenced before the effective date of the community's first flood plain management code, ordinance, or standard.

C. Add the following definitions to Section 202 of the IEBC to read:

Moved building or structure. An existing building or structure that is moved to a new location.

Roof covering. The covering applied to the roof deck or spaced supports for weather resistance, energy performance, fire classification, or appearance.

Structure. An assembly of materials forming a construction for occupancy or use, including stadiums, gospel and circus tents, reviewing stands, platforms, stagings, observation towers, radio towers, water tanks, storage tanks (underground and aboveground), trestles, piers, wharves, swimming pools, amusement devices, storage bins, and other structures of this general nature but excluding water wells. The word "structure" shall be construed as though followed by the words "or part or parts thereof" unless the context clearly requires a different meaning. "Structure" shall not include roadway tunnels and bridges owned by the Virginia Department of Transportation, which shall be governed by construction and design standards approved by the Virginia Commonwealth Transportation Board.

D. Delete the following definitions from Section 202 of the IEBC:

Ambulatory care facility

Approved

Approved agency

Dangerous

Deferred submittal

Facility

Flood hazard area

Lowest floor

Occupiable roof

Peer review

Photovoltaic panel system

Registered design professional in responsible charge

Relocatable building

Roof repair

Storm shelter

Unsafe

Work area

13VAC5-63-431. Chapter 3 General provisions and special detailed requirements.

Replace Chapter 3 of the IEBC with the following:

1. Section 301 General.

301.1 Applicability. The applicable provisions of this chapter shall be used in conjunction with the requirements in this code and shall apply to all construction and rehabilitation.

301.2 Occupancy and use. When determining the appropriate application of the referenced sections of this code, the occupancy and use of a building shall be determined in accordance with Chapter 3 of the VCC.

2. Section 302 Building Materials and Systems.

302.1 New and replacement materials. Except as otherwise required or permitted by this code, materials permitted by the applicable code for new construction shall be used. Like materials shall be permitted for repairs and alterations, provided no hazard to life, health, or property is created. Hazardous materials shall not be used where the VCC would not permit hazardous materials use in buildings or structures of similar occupancy, purpose, and location.

302.2 Existing seismic force-resisting systems. Where the existing seismic force-resisting system is a type that can be designated ordinary, values of R , Ω_0 , and C_d for the existing seismic force-resisting system shall be those specified by the VCC for an ordinary system unless it is demonstrated that the existing system will provide performance equivalent to that of a detailed, intermediate, or special system.

302.3 Smoke alarms. Repair or replacement of smoke alarms shall be with devices listed in accordance with UL217 and that are no more than 10 years from the date of manufacture. Battery-only powered devices shall be powered by a 10-year sealed battery.

3. Section 303 Fire escapes.

303.1 Where permitted. Fire escapes shall comply with this section and shall not constitute more than 50% of the required number of exits nor more than 50% of the required exit capacity.

303.1.1 Existing fire escapes. Existing fire escapes shall continue to be accepted as a component in the means of egress.

303.1.2 New fire escapes. For other than Group I-2, newly constructed fire escapes shall be permitted only where exterior stairs cannot be utilized due to lot lines limiting stair size or due to the sidewalks, alleys, or roads at grade level.

Exception: Replacement fire escapes or existing fire escapes undergoing repairs shall comply with Sections 303.3 and 303.4 if feasible, and if not feasible, to the greatest extent possible.

303.2 Location. Where located on the front of the building and where projecting beyond the building line, the lowest landing shall not be less than seven feet (2134 mm) or more than 12 feet (3658 mm) above grade and shall be equipped with a counterbalanced stairway to the street. In alleyways and thoroughfares less than 30 feet (9144 mm) wide, the clearance under the lowest landing shall not be less than 12 feet (3658 mm).

303.3 Construction. The fire escape shall be designed to support a live load of 100 pounds per square foot (4788 Pa) and shall be constructed of steel or other approved noncombustible materials. Fire escapes constructed of wood not less than nominal two inches (51 mm) thick are permitted on buildings of Type V construction. Walkways and railings located over or supported by combustible roofs in buildings of Types III and IV construction are permitted to be of wood not less than nominal two inches (51 mm) thick.

303.4 Dimensions. Stairs shall be at least 22 inches (559 mm) wide with risers not more than, and treads not less than, eight inches (203 mm) and landings at the foot of stairs not less than 40 inches (1016 mm) wide by 36 inches (914 mm) long, located not more than nine inches (203 mm) below the door.

303.5 Opening protectives. Openings within 10 feet (3048 mm) of newly constructed fire escape stairways shall be protected by fire assemblies having minimum 3/4-hour-fire-resistance ratings.

Exception: Opening protection shall not be required in buildings equipped throughout with an approved automatic sprinkler system.

303.6 Fire escape access and details. Newly constructed fire escapes shall comply with all of the following requirements:

1. Occupants shall have unobstructed access to the fire escape without having to pass through a room subject to locking.
2. Access to a new fire escape shall be through a door, except that windows shall be permitted to provide access from single dwelling units or sleeping units in Groups R-1, R-2, and I-1 occupancies or to provide access from spaces having a maximum occupant load of 10 in other occupancy classifications.

2.1. The window shall have a minimum net clear opening of 5.7 square feet (0.53 m²) or five square feet (0.46 m²) where located at grade.

2.2. The minimum net clear opening height shall be 24 inches (610 mm) and net clear opening width shall be 20 inches (508 mm).

2.3. The bottom of the clear opening shall not be greater than 44 inches (1118 mm) above the floor.

2.4. The operation of the window shall comply with the operational constraints of the VCC.

3. In all buildings of Group E occupancy, up to and including the 12th grade, buildings of Group I occupancy, rooming houses, and child care centers, ladders of any type are prohibited on fire escapes used as a required means of egress.

4. Section 304 Glass replacement and replacement windows.

304.1 Replacement glass. In accordance with § 36-99.2 of the Code of Virginia, installation or replacement of glass shall comply with Chapter 24 of the VCC.

304.2 Replacement window opening devices. In Group R-2 or R-3 buildings containing dwelling units, window opening control devices complying with ASTM F 2090 shall be installed where an existing window is replaced and where all of the following apply to the replacement window:

1. The window is operable;
2. The window replacement includes replacement of the sash and the frame;
3. The top of the sill of the window opening is at a height less than 36 inches (915 mm) above the finished floor;
4. The window will permit openings that will allow passage of a four-inch diameter (102 mm) sphere when the window is in its largest opened position; and
5. The vertical distance from the top of the sill of the window opening to the finished grade or other surface below, on the exterior of the building, is greater than 72 inches (1829 mm).

The window opening control device, after operation to release the control device allowing the window to fully open, shall not reduce the minimum net clear opening area of the window unit to less than the area required by Section 1031.3.1 of the VCC.

Exceptions:

1. Operable windows where the top of the sill of the window opening is located more than 75 feet (22 860 mm) above the finished grade or other surface below, on the exterior of the room, space, or building, and that are provided with window fall prevention devices that comply with ASTM F 2006.

2. Operable windows with openings that are provided with window fall prevention devices that comply with ASTM F 2090.

304.3 Replacement window emergency escape and rescue openings. Where windows are required by the VCC or International Residential Code to provide emergency escape and rescue openings in Groups R-2 and R-3 occupancies and one-family and two-family dwellings and townhouses regulated by the International Residential Code, replacement windows shall be exempt from the requirements of Sections 1031.2.1 and 1031.3 of the VCC or Sections ~~R310.1.1, R319.1.1, R310.2.1, R319.2.1, R310.2.3, R319.2.3, R310.4.1, R319.4.1, R310.4.2, R319.4.2, R310.4.2.1, R319.4.2.1, R310.4.2.2, R319.4.2.2, and R310.4.3~~ R319.4.3 of the International Residential Code, provided the replacement window meets the following conditions:

1. The replacement window is the manufacturer's largest standard size window that will fit within the existing frame or existing rough opening. The replacement window shall be permitted to be of the same operating style as the existing window or a style that provides for an equal or greater window opening area than the existing window.
2. The replacement of the window is not part of a change of occupancy.

304.3.1 Operational constraints. Where bars, grilles, grates, or similar devices are installed over emergency escape and rescue openings as permitted by Section 1031.2.1 of the VCC, smoke alarms shall also be provided in accordance with Section 907.2.11 of the VCC. In R-5 occupancies, bars, grilles, grates, or similar devices are permitted to be installed over emergency escape and rescue openings in accordance with Section ~~R310.4.4~~ R319.4.4 of the VRC.

5. Section 305 Seismic force-resisting systems.

305.1 General. Where this code requires consideration of the seismic force-resisting system of an existing building subject to repair, alteration, change of occupancy, addition, or moving of existing buildings, the seismic evaluation and design shall be based on Section 305.2.

305.2 Seismic evaluation and design procedures. The seismic evaluation and design shall be based on the procedures specified in the VCC or ASCE 41. The procedures contained in Appendix A of this code shall be permitted to be used as specified in Section 305.2.2.

305.2.1 Compliance with VCC-level seismic forces. Where compliance with the seismic design provisions of the VCC is required, the criteria shall be in accordance with one of the following:

1. 100% of the values in the VCC. Where the existing seismic force-resisting system is a type that can be designated as "Ordinary," values of R , Ω_0 , and C_d used for analysis in accordance with Chapter 16 of the VCC shall be those specified for structural systems classified as "Ordinary" in accordance with Table 12.2-1 of ASCE 7, unless it can be demonstrated that the structural system will provide performance equivalent to that of a "Detailed," "Intermediate" or "Special" system.

2. ASCE 41, using a Tier 3 procedure and the two level performance objective in Table 305.2.1 for the applicable risk category.

Table 305.2.1 Performance Objectives for Use in ASCE 41 for Compliance with VCC-Level Seismic Forces		
Risk Category (Based on VCC Table 1604.5)	Structural Performance Level for Use with BSE-1E Earthquake Hazard Level	Structural Performance Level for Use with BSE-2N Earthquake Hazard Level
I	Life Safety (S-3)	Collapse Prevention (S-5)
II	Life Safety (S-3)	Collapse Prevention (S-5)
III	Damage Control (S-2)	Limited Safety (S-4)
IV	Immediate Occupancy (S-1)	Life Safety (S-3)

305.2.2 Compliance with reduced VCC-level seismic forces. Where seismic evaluation and design is permitted to meet reduced VCC seismic force levels, the criteria used shall be in accordance with one of the following:

1. The VCC using 75% of the prescribed forces. Values of R , Ω_0 and C_d used for analysis shall be as specified in Section 305.2.1 of this code.
2. Structures or portions of structures that comply with the requirements of the applicable chapter in Appendix A as specified in Items 2.1 through 2.5 and subject to the limitations of the respective Appendix A chapters shall be deemed to comply with this section.
 - 2.1. The seismic evaluation and design of unreinforced masonry bearing wall buildings in Risk Category I or II are permitted to be based on the procedures specified in Appendix Chapter A1.
 - 2.2. Seismic evaluation and design of the wall anchorage system in reinforced concrete and reinforced masonry wall buildings with flexible diaphragms in Risk Category I or II are permitted to be based on the procedures specified in Chapter A2.
 - 2.3. Seismic evaluation and design of cripple walls and sill plate anchorage in residential buildings of light-frame wood construction in Risk Category I or II are permitted to be based on the procedures specified in Chapter A3.
 - 2.4. Seismic evaluation and design of soft, weak, or open-front wall conditions in multi-unit residential buildings of wood construction in Risk Category I or II are permitted to be based on the procedures specified in Chapter A4.

2.5. Seismic evaluation and design of concrete buildings assigned to Risk Category I, II, or III are permitted to be based on the procedures specified in Chapter A5.

3. ASCE 41, using the performance objective in Table 305.2.2 for the applicable risk category.

Table 305.2.2 Performance Objectives for Use in ASCE 41 for Compliance with Reduced VCC- Level Seismic Forces	
Risk Category (Based on VCC Table 1604.5)	Structural Performance Level for Use with BSE-1E Earthquake Hazard Level
I	Life Safety (S-3)
II	Life Safety (S-3)
III	Damage Control (S-2 ^a)
IV	Immediate Occupancy (S-1)
a. Tier 1 evaluation at the Damage Control performance level shall use the Tier 1 Life Safety checklists and Tier 1 Quick Check provision midway between those specified for Life Safety and Immediate Occupancy performance	

6. Section 306 Higher education laboratories.

306.1 Change of occupancy in existing higher education laboratories. Where the use of new or different hazardous materials or a change in the amount of hazardous materials in existing higher education laboratories would constitute a change of occupancy, this section shall be permitted to be used as an acceptable alternative to compliance with change of occupancy requirements to permit the increased amounts of hazardous materials stipulated without the laboratories being classified as Group H. In addition, such laboratories shall comply with the applicable operational and maintenance requirements in Chapter 38 of the SFPC. Approval under this section is contingent upon operational requirements in the SFPC being complied with and maintained.

306.1.1 Hazardous materials in existing higher education laboratories. The percentage of maximum allowable quantities of hazardous materials per control area and the number of control areas permitted at each floor level within an existing building shall be permitted to comply with Table 302.6.1(1) in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 of the VCC or shall be permitted to comply with Table 302.6.1(2) in buildings not equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 of the VCC.

Table 306.1.1(1)

Design and Number of Control Areas in Existing Buildings Equipped throughout with an Automatic Sprinkler System in Accordance with Section 903.3.1.1 of the VCC with Higher Education Laboratories

Floor Level		Percentage of the Maximum Allowable Quantity per Control Area ^a	Number of Control Areas per Floor	Fire-Resistance Rating for Fire Barriers and Horizontal Assemblies in Hours ^b
Above Grade Plane	Higher than 20	5	1	2
	10-20	10	1	2
	7-9	25	2	2
	4-6	50	2	2
	3	75	2	1
	2	100	3	1
	1	100	4	1
Below Grade Plane	1	75	3	1
	2	50	2	1
	Lower than 2	Not Allowed	Not Allowed	Not Allowed

a. Percentage shall be of the maximum allowable quantity per control area shown in Tables 307.1(1) and 307.1(2) of the VCC, with all increases allowed in the notes to those tables.

b. Separation shall include fire barriers and horizontal assemblies as necessary to provide separation from other portions of the building.

Table 306.1.1(2)

Design and Number of Control Areas in Existing Buildings Not Equipped throughout with an Automatic Sprinkler System in Accordance with Section 903.3.1.1 of the VCC with Higher Education Laboratories

Floor Level		Percentage of the Maximum Allowable	Number of Control Areas per Floor	Fire-Resistance Rating for Fire Barriers and Horizontal Assemblies in Hours ^b

		Quantity per Control Area ^a		
Above Grade Plane	Higher than 9	5	1	2
	7-9	10	2	2
	4-6	25	2	2
	3	75	2	1
	2	100	3	1
	1	100	4	1
Below Grade Plane	1	75	3	1
	2	50	2	1
	Lower than 2	Not Allowed	Not Allowed	Not Allowed
a. Percentage shall be of the maximum allowable quantity per control area shown in Tables 307.1(1) and 307.1(2) of the VCC, with all increases allowed in the notes to those tables. b. Separation shall include fire barriers and horizontal assemblies as necessary to provide separation from other portions of the building.				

306.1.2 Automatic fire alarm and detection systems. A fire alarm system shall be provided throughout the building in accordance with Section 907 of the VCC. An automatic fire detection system shall be provided in the control area in accordance with Section 907 of the VCC where the building is not equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 of the VCC.

306.1.3 System supervision and monitoring. Automatic fire alarm and detection systems shall be electronically supervised and monitored by an approved supervising station or, where approved, shall initiate an audible and visual signal at a constantly attended onsite location.

306.1.4 Restricted materials in storage and use. Where approved by the building official, the storage and use of the following hazardous materials prohibited by VCC Table 307.1(1) in buildings not equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 shall be allowed within a control area at 25% of Table 307.1(1) limits for a building equipped throughout with an automatic sprinkler system:

1. Pyrophorics.
2. Class 4 oxidizers.

No additional quantity increases shall be allowed. All such materials shall be stored and used in accordance with Sections 3805.2.1 and 3805.2.2 of the SFPC.

13VAC5-63-432.5. Chapter 4 Accessibility.

Replace Chapter 4 of the IEBC with the following:

1. Section 401 General

401.1 Scope. The applicable provisions of this chapter shall apply to all construction and rehabilitation.

2. Section 402 Change of Occupancy.

402.1 Change of occupancy. Existing buildings or structures that undergo a change of occupancy are not required to be provided with additional accessibility features. Any alterations undertaken in connection with a change of occupancy shall conform to the applicable requirements of Section 404.

3. Section 403 Additions.

403.1 Additions. Accessibility provisions for new construction shall apply to additions. An addition that affects the accessibility to, or contains an area of, a primary function shall comply with the requirements in Section 404.3, as applicable.

403.2 Accessible dwelling units and sleeping units. Where Group I-1, I-2, I-3, R-1, R-2, or R-4 dwelling or sleeping units are being added, the requirements of Section 1108 of the VCC for accessible units apply only to the quantity of spaces being added.

403.3 Type A dwelling or sleeping units. Where more than 20 Group R-2 dwelling or sleeping units are being added, the requirements of Section 1108 of the VCC for Type A units and Chapter 9 of the VCC for visible alarms apply only to the quantity of the spaces being added.

403.4 Type B dwelling or sleeping units. Where four or more Group I-1, I-2, R-1, R-2, R-3, or R-4 dwelling or sleeping units are being added, the requirements of Section 1108 of the VCC for Type B units and Chapter 9 of the VCC for visible alarms apply only to the quantity of spaces being added.

4. Section 404 Alterations.

404.1 General. An alteration of an existing facility shall not impose a requirement for greater accessibility than that which would be required for new construction. Alterations shall not reduce or have the effect of reducing accessibility of a facility or portion of a facility.

404.2 Alterations. A facility that is altered shall comply with the applicable provisions in this section and Chapter 11 of the VCC, except as modified by Sections 404.3 and 404.4, unless technically infeasible. Where compliance with this section is technically infeasible, the alteration shall provide access to the maximum extent technically feasible.

Exceptions:

1. The altered element or space is not required to be on an accessible route, unless required by Section 404.3.
2. Accessible means of egress required by Chapter 10 of the VCC are not required to be provided in existing facilities.
3. The alteration to Type A individually owned dwelling units within a Group R-2 occupancy shall be permitted to meet the provisions for a Type B dwelling unit.

404.3 Alterations affecting an area containing a primary function. Where an alteration affects or could affect the usability of or access to an area containing a primary function, the route to the primary function area shall be accessible. Toilet facilities and drinking fountains serving the area of primary function, including the route from the area of primary function to these facilities, shall be accessible.

Exceptions:

1. The cumulative costs of providing the accessible route, toilet facilities, and drinking fountains are not required to exceed 20% of the costs of the alterations affecting the area of primary function.
2. This provision does not apply to alterations limited solely to windows, hardware, operating controls, electrical outlets, and signs.
3. This provision does not apply to alterations limited solely to mechanical systems, electrical systems, installation, or alteration of fire protection systems and abatement of hazardous materials.
4. This provision does not apply to alterations undertaken for the primary purpose of increasing the accessibility of a facility.
5. This provision does not apply to altered areas limited to Type B dwelling and sleeping units.

404.4 Scoping for alterations. The provisions of Sections 404.4.1 through 404.1.15 shall apply to alterations to existing buildings and facilities.

404.4.1 Entrances. Where an alteration includes alterations to an entrance and the facility has an accessible entrance on an accessible route, the altered entrance is not required to be accessible unless required by Section 404.3. Signs complying with Section 1112 of the VCC shall be provided.

Exception: Where an alteration includes alterations to an entrance and the facility has an accessible entrance, the altered entrance is not required to be accessible, unless required by Section 404.3. Signs complying with Section 1112 of the VCC shall be provided.

404.4.2 Elevators. Altered elements of existing elevators shall comply with ASME A17.1/CSA B44 and ICC A117.1. Such elements shall also be altered in elevators programmed to respond to the same hall call control as the altered elevator.

404.4.3 Platform lifts. Platform (wheelchair) lifts complying with ICC A117.1 and installed in accordance with ASME A18.1 shall be permitted as a component of an accessible route.

404.4.4 Stairways and escalators. Where an escalator or stairway is added where none existed previously and major structural modifications are necessary for installation, an accessible route shall be provided between the levels served by the escalator or stairways in accordance with Section 1104.4 of the VCC.

404.4.5 Ramps. Where steeper slopes than allowed by Section 1012.2 of the VCC are necessitated by space limitations, the slope of ramps in or providing access to existing facilities shall comply with Table 404.4.5.

Table 404.4.5	
Ramps	
Slope	Maximum Rise
Steeper than 1:10 but not steeper than 1:8	3 inches
Steeper than 1:12 but not steeper than 1:10	6 inches
For SI: 1 inch = 25.4 mm	

404.4.6 Accessible dwelling or sleeping units. Where Group I-1, I-2, I-3, R-1, R-2, or R-4 dwelling or sleeping units are being altered, the requirements of Section 1108 of the VCC for Accessible units apply only to the quantity of the spaces being altered.

404.4.7 Type A dwelling or sleeping units. Where more than 20 Group R-2 dwelling or sleeping units are being altered, the requirements of Section 1108 of the VCC for Type A units and Chapter 9 of the VCC for visible alarms apply only to the quantity of the spaces being altered.

404.4.8 Type B dwelling or sleeping units. Where four or more Group I-1, I-2, R-1, R-2, R-3, or R-4 dwelling or sleeping units are being altered, the requirements of Section 1108 of the VCC for Type B units and Chapter 9 of the VCC for visible alarms apply only to the quantity of the spaces being altered.

~~Exceptions:~~ Exception: Groups I-1, I-2, R-2, R-3, and R-4 dwelling or sleeping units where the first certificate of occupancy was issued before March 15, 1991, are not required to provide Type B dwelling or sleeping units.

404.4.9 Jury boxes and witness stands. In alterations, accessible wheelchair spaces are not required to be located within the defined area of raised jury boxes or witness stands and shall be permitted to be located outside these spaces where ramp or lift access poses a hazard by restricting or projecting into a required means of egress.

404.4.10 Toilet and bathing rooms. Where it is technically infeasible to alter existing toilet and bathing rooms to be accessible, an accessible single-user, family, or assisted-use toilet or bathing room constructed in accordance with Section 1110.2.1 of the VCC is permitted. The single-user, family, or assisted-use toilet or bathing room shall be located on the same floor and in the same area as the existing toilet or bathing rooms. Directional signs shall be provided at the inaccessible toilet and bathing rooms indicating the location of the nearest single-user, family, or assisted-use toilet room or bathing room. These directional signs shall include the International Symbol of Accessibility and sign characters shall meet the visual character requirements in accordance with ICC A117.1.

404.4.10.1 Additional toilet and bathing facilities. In assembly and mercantile occupancies, where additional toilet fixtures are added, not fewer than one accessible family or assisted-use toilet room shall be provided where required by Section 1110.2.1 of the International Building Code. In recreational facilities, where additional bathing rooms are being added, not fewer than one family or assisted-use bathing room shall be provided where required by Section 1110.2.1 of the International Building Code.

404.4.11 Dressing, fitting, and locker rooms. Where it is technically infeasible to provide accessible dressing, fitting, or locker rooms at the same location as similar types of rooms, one accessible room on the same level shall be provided. Where separate-sex facilities are provided, accessible rooms for each sex shall be provided. Separate sex facilities are not required where only unisex rooms are provided.

404.4.12 Fuel dispensers. Operable parts of replacement fuel dispensers shall be permitted to be 54 inches (1370 mm) maximum, measuring from the surface of the vehicular way where fuel dispensers are installed on existing curbs.

404.4.13 Thresholds. The maximum height of thresholds at doorways shall be 3/4 inch (19.1 mm). Such thresholds shall have beveled edges on each side.

404.4.14 Amusement rides. Where the structural or operational characteristics of an amusement ride are altered to the extent that the amusement ride's performance differs from that specified by the manufacturer or the original design, the amusement ride shall comply with requirements for new construction in Section 1111.4.8 of the VCC.

404.4.15 Dining areas. An accessible route to raised or sunken dining areas or to outdoor seating areas is not required provided that the same services and décor are provided in an accessible space usable by any occupant and not restricted to use by people with a disability.

5. Section 405 Historic Buildings.

405.1 General. These provisions shall apply to facilities designated as historic buildings or structures that undergo alterations unless technically infeasible. Where compliance with the requirements for accessible routes, entrances, or toilet rooms would threaten or destroy the historic significance of the facility, the alternative requirements of Sections 405.1.1 through 405.1.5 for that element shall be permitted.

405.1.1 Site arrival points. At least one accessible route from a site arrival point to an accessible entrance shall be provided.

405.1.2 Multilevel buildings and facilities. An accessible route from an accessible entrance to public spaces on the level of the accessible entrance shall be provided.

405.1.3 Entrances. Where an entrance cannot be made accessible in accordance with Section 404.4.1, an accessible entrance that is unlocked while the building is occupied shall be provided or a locked accessible entrance with a notification system or remote monitoring shall be provided.

Signs complying with Section 1112 of the VCC shall be provided at the primary entrances and the accessible entrance.

405.1.4 Toilet and bathing facilities. Where toilet rooms are provided, at least one accessible single-user, family, or assisted-use toilet or bathing room complying with Section 1110.2.1 of the VCC and Section 403.2.1 of the International Plumbing Code shall be provided.

405.1.5 Type B units. Type B dwelling or sleeping units required by Section 1108 of the VCC are not required to be provided in historic buildings or structures.

13VAC5-63-433. Chapter 5 Repairs.

Replace Chapter 5 of the IEBC with the following:

1. Section 501 General.

501.1 Scope. Repairs, including the patching, restoration, or replacement of damaged materials, elements, equipment, or fixtures shall comply with the requirements of this chapter. Repairs to historic buildings need only comply with Chapter 9. Portions of the existing building or structure not being repaired shall not be required to comply with the requirements of this code applicable to newly constructed buildings or structures. Work on nondamaged components that is necessary for the required repair of damaged components shall be considered part of the repair and shall not be subject to the provisions of Chapter 6. Routine maintenance required by Section 302, ordinary repairs exempt from permit in accordance with Section 108.2 of the VCC, and abatement of wear due to normal service conditions shall not be subject to the requirements for repairs in this section.

501.2 Conformance. The work shall not make the building less conforming than it was before the repair was undertaken. Repairs shall be done in a manner that maintains the following:

1. Level of fire protection that is existing.
2. Level of protection that is existing for the means of egress.
3. Level of accessibility that is existing.

2. Section 502 Structural.

502.1 General. Structural repairs shall be in compliance with this section and Section 501.2. Regardless of the scope of repair, new structural members and connections used for repair or

rehabilitation shall comply with the detailing provisions of the VCC for new buildings of similar structure, purpose, and location.

502.1.1 Structural concrete. Assessment, design, and repairs to structural concrete shall be in accordance with ACI CODE 562. Assessment and design of repairs of seismic force-resisting concrete elements that result in changes of strength, stiffness, or ductility from predamage conditions shall be in accordance with Section 305.

502.2 Less than substantial structural damage. For damage less than substantial structural damage, repairs shall be allowed that restore the building to its predamage state.

502.3 Substantial structural damage to vertical elements of the lateral force-resisting system. A building that has sustained substantial structural damage to the vertical elements of its lateral force-resisting system shall be evaluated in accordance with Section 502.3.1 and either repaired in accordance with Section 502.3.2 or repaired and rehabilitated in accordance with Section 502.3.3, depending on the results of the evaluation.

Exceptions:

1. Buildings assigned to Seismic Design Category A, B, or C whose substantial structural damage was not caused by earthquake need not be evaluated or rehabilitated for load combinations that include earthquake effects.
2. One-family and two-family dwellings need not be evaluated or rehabilitated for load combinations that include earthquake effects.

502.3.1 Evaluation. The building shall be evaluated by a registered design professional, and the evaluation findings shall be submitted to the building official. The evaluation shall establish whether the damaged building would comply with the provisions of the VCC for load combinations that include wind or earthquake effects if repaired to its predamage state, except that the seismic forces shall be the reduced VCC-level seismic forces.

Wind loads for this evaluation shall be those prescribed in Section 1609 of the VCC. Earthquake loads for this evaluation, if required, shall be permitted to be 75% of those prescribed in Section 1613 of the VCC. Alternatively, compliance with ASCE 41, using the performance objective in Table 305.2.2 for the applicable risk category, shall be deemed to meet the earthquake evaluation requirement.

502.3.2 Extent of repair for compliant buildings. If the evaluation establishes that the building in its predamage condition complies with the provisions of Section 502.3.1, then repairs shall be permitted that restore the building to its predamage state.

502.3.3 Extent of repair for noncompliant buildings. If the evaluation does not establish that the building in its predamage condition complies with the provisions of Section 502.3.1, then the building shall be rehabilitated to comply with the provisions of this section. The wind loads for the repair shall be as required by the building code in effect at the time of original construction, unless the damage was caused by wind, in which case the wind loads shall be in accordance with the VCC. The

earthquake loads for this rehabilitation design shall be those required by the building code in effect at the time of original construction, but not less than the reduced VCC-level seismic forces. New structural members and connections required by this rehabilitation design shall comply with the detailing provisions of the VCC for new buildings of similar structure, purpose, and location. Alternatively, compliance with ASCE 41, using the performance objective in Table 305.2.2 for the applicable risk category shall be deemed to meet the earthquake rehabilitation requirement.

502.4 Substantial structural damage to gravity load-carrying components. Gravity load-carrying components that have sustained substantial structural damage shall be rehabilitated to comply with the applicable provisions for dead and live loads in the VCC. Snow loads shall be considered if the substantial structural damage was caused by or related to snow load effects. Existing gravity load carrying structural elements shall be permitted to be designed for live loads approved prior to the damage. If the approved live load is less than that required by Section 1607 of the VCC, the area designed for the nonconforming live load shall be posted with placards of approved design indicating the approved live load. Nondamaged gravity load-carrying components that receive dead, live, or snow loads from rehabilitated components shall also be rehabilitated if required to comply with the design loads of the rehabilitation design or shown to have the capacity to carry the design loads of the rehabilitation design. New structural members and connections required by this rehabilitation design shall comply with the detailing provisions of the VCC for new buildings of similar structure purpose and location.

502.4.1 Lateral force-resisting elements. Regardless of the level of damage to gravity elements of the lateral force-resisting system, if substantial structural damage to gravity load-carrying components was caused primarily by wind or earthquake effects, then the building shall be evaluated in accordance with Section 502.3.1 and, if noncompliant, rehabilitated in accordance with Section 502.3.3.

Exceptions:

1. Buildings assigned to Seismic Design Category A, B, or C whose substantial structural damage was not caused by earthquake need not be evaluated or rehabilitated for load combinations that include earthquake effects.
2. One-family and two-family dwellings need not be evaluated or rehabilitated for load combinations that include earthquake effects.

3. Section 503 Flood Hazard Areas.

503.1 Flood hazard areas. For buildings and structures in flood hazard areas established in Section 1612.3 of the VCC or Section ~~R322~~ R306 of the International Residential Code, as applicable, any repair that constitutes substantial improvement or repair of substantial damage of the existing building or structure shall comply with the flood design requirements for new construction and all aspects of the existing building or structure shall be brought into compliance with the requirements for new construction for flood design.

For buildings and structures in flood hazard areas established in Section 1612.3 of the VCC or Section ~~R322~~ R306 of the International Residential Code, as applicable, any repairs that do not constitute substantial improvement or repair of substantial damage of the existing building or structure are not required to comply with the flood design requirements for new construction.

4. Section 504 Electrical.

504.1 Material. Existing electrical wiring and equipment undergoing repair shall be allowed to be repaired or replaced with like material.

504.1.1 Receptacles. Replacement of electrical receptacles shall comply with the applicable requirements of Section 406.4(D) of NFPA 70.

504.1.2 Plug fuses. Plug fuses of the Edison-base type shall be used for replacements only where there is no evidence of over fusing or tampering per applicable requirements of Section 240.51(B) of NFPA 70.

504.1.3 Nongrounding-type receptacles. For replacement of nongrounding-type receptacles with grounding-type receptacles and for branch circuits that do not have an equipment grounding conductor in the branch circuitry, the grounding conductor of a grounding-type receptacle outlet shall be permitted to be grounded to any accessible point on the grounding electrode system or to any accessible point on the grounding electrode conductor in accordance with Section 250.130(C) of NFPA 70.

504.1.4 Group I-2 receptacles. Non-"hospital grade" receptacles in patient bed locations of Group I-2 shall be replaced with "hospital grade" receptacles, as required by NFPA 99 and Article 517 of NFPA 70.

504.1.5 Grounding of appliances. Frames of electric ranges, wall-mounted ovens, counter-mounted cooking units, clothes dryers, and outlet or junction boxes that are part of the existing branch circuit for these appliances shall be permitted to be grounded to the grounded circuit conductor in accordance with Section 250.140 of NFPA 70.

5. Section 505 Mechanical.

505.1 General. Existing mechanical systems undergoing repair shall not make the building less conforming than it was before the repair was undertaken.

505.2 Mechanical draft systems for manually fired appliances and fireplaces. A mechanical draft system shall be permitted to be used with manually fired appliances and fireplaces where such a system complies with all of the following requirements:

1. The mechanical draft device shall be listed and installed in accordance with the manufacturer's installation instructions.
2. A device shall be installed that produces visible and audible warning upon failure of the mechanical draft device or loss of electrical power at any time that the mechanical draft device

is turned on. This device shall be equipped with a battery backup if it receives power from the building wiring.

3. A smoke detector shall be installed in the room with the appliance or fireplace. This device shall be equipped with a battery backup if it receives power from the building wiring.

6. Section 506 Plumbing.

506.1 Materials. Plumbing materials and supplies shall not be used for repairs that are prohibited in the International Plumbing Code.

506.2 Water closet replacement. The maximum water consumption flow rates and quantities for all replaced water closets shall be 1.6 gallons (6 L) per flushing cycle.

Exception: Blowout-design water closets 3.5 gallons (13 L) per flushing cycle.

7. Section 507 Energy Conservation.

507.1 General. Except as permitted by Sections 302.1 and 501.1, repairs shall comply with the VECC.

Exception: Where a building was constructed to comply with the requirements of the building code under which the building or structure or the affected portion thereof was built or as previously approved by the building official, repairs need not comply with the VECC, provided the repairs, as documented, do not result in reduced energy efficiency.

507.2 Application. For the purposes of this section, the following shall be considered repairs:

1. Glass-only replacements in an existing sash and frame.
2. Replacement of existing doors that separate conditioned space from the exterior shall not require the installation of a vestibule or revolving door, provided that an existing vestibule that separates a conditioned space from the exterior shall not be removed.
3. Repairs where only the bulb, the ballast, or both within the existing luminaires in a space are replaced, provided that the replacement does not increase the installed interior lighting power.

13VAC5-63-433.3. Chapter 6 Alterations.

Replace Chapter 6 of the IEBC with the following:

1. Section 601 General.

601.1 General. Except as modified in Chapter 9 or this chapter, alterations to any building or structure shall comply with the requirements of the VCC for new construction. Alterations shall be such that the existing building or structure is no less conforming to the provisions of the VCC than the existing building or structure was prior to the alteration. Portions of the building or structure not being altered shall not be required to comply with the requirements of the VCC.

Exceptions:

1. Any stairway replacing an existing stairway shall not be required to comply with the requirements of Section 1011 of the VCC where the existing space and construction does not allow a reduction in pitch or slope.
2. Handrails otherwise required to comply with Section 1011.11 of the VCC shall not be required to comply with the requirements of Section ~~1014.6~~ 1014.7 of the VCC regarding full extension of the handrails where such extensions would be hazardous due to plan configuration.
3. Where the current level of safety or sanitation is proposed to be reduced, the portion altered shall conform to the requirements of the VCC.
4. Alterations complying with the requirements of the building code under which the building or structure or the affected portions thereof was built or as previously approved by the building official, shall be considered in compliance with the provisions of this code. New structural members added as part of the alteration shall comply with the VCC. Alterations of existing buildings in flood hazard areas shall comply with Section 601.3.

601.2 Levels of alterations. Alterations to any building or structure shall be classified as the following:

601.2.1 Level 1. Level 1 alterations include the removal and replacement or the covering of existing materials, elements, equipment, or fixtures using new materials, elements, equipment, or fixtures that serve the same purpose or the removal without replacement of materials, elements, equipment, or fixtures. Level 1 alterations shall comply with the applicable provisions of Section 602.

601.2.2 Level 2. Level 2 alterations shall comply with the applicable provisions of Sections 602 and 603 and shall include the following:

1. The addition or elimination of any door or window.
2. The addition or elimination of any wall, floor, or ceiling assembly.
3. The reconfiguration or extension of any system.
4. The installation of any additional equipment, materials, elements, or fixtures.

601.3 Flood hazard areas. In flood hazard areas, alterations that constitute substantial improvement shall require that the building comply with Section 1612 of the VCC or Section ~~R322~~ R306 of the International Residential Code, as applicable.

601.4 Energy conservation. Except as modified by this section, alterations to an existing building, building system, or structure shall conform to the applicable provisions of the Virginia Energy Conservation Code or Virginia Residential Code as they relate to new construction without requiring the unaltered portions of the existing building, building system, or structure to comply with the VECC or VRC.

601.4.1 Opaque walls. Where the existing stud wall cavity that is part of the thermal envelope is exposed during the alteration, such exposed cavities between framing members shall be filled with insulation having a minimum nominal value of not less than R-3 per inch or filled to the minimum prescriptive insulation requirement in Table R402.1.3 or Table C402.1.3 of the VECC.

Exception: Where less than 60 square feet (5.574 m²) of the existing stud cavities that are part of the thermal envelope are exposed.

601.4.2 Floors. Where the existing framed floor cavity that is part of the thermal envelope is exposed during the alteration, such exposed cavities between framing members shall be filled with insulation having a minimum nominal value of not less than R-3 per inch or filled to the minimum prescriptive insulation requirement in Table R402.1.3 or Table C402.1.3 of the VECC.

Exception: Where less than 60 square feet (5.574 m²) of the existing framed floor cavities that are part of the thermal envelope are exposed.

601.4.3 Ceilings and vented attics. Where the existing rafter cavity that is part of the thermal envelope is exposed during the alteration, such exposed cavities between framing members shall be filled with insulation having a minimum nominal value of not less than R-3 per inch or filled to the minimum prescriptive insulation requirement in Table R402.1.3 or Table C402.1.3 of the VECC. Where the existing framed floor or truss bottom chord cavity of a vented attic is exposed during the alteration, the exposed cavities shall be filled with insulation having a minimum nominal value of not less than R-3 per inch or filled to the minimum prescriptive insulation requirement in Table R402.1.3 or Table C402.1.3 of the VECC. If the existing insulation laying on such vented attic floor is removed, such insulation shall be replaced with insulation complying with the minimum prescriptive insulation requirement in Table R402.1.3 or Table C402.1.3 of the VECC.

Exception: Where less than 60 square feet (5.574 m²) of the existing rafter, framed vented attic floor, or truss bottom chord cavities that are part of the thermal envelope is exposed.

601.4.4 Fenestration. Where an existing fenestration unit is replaced, the replacement fenestration unit shall comply with the requirements for U-factor and SHGC as specified in Table R402.1.2 or Table ~~C402.4~~ C402.5 of the VECC, as applicable. Where more than one fenestration unit is to be replaced, an area-weighted average of the U-factor, SHGC, or both of all replacement fenestration units shall be permitted.

601.4.4.1 Converting fenestration unit to opaque wall. Where existing fenestration units are converted into an opaque exterior wall assembly, the new portion of wall shall comply with Section 601.4.1.

601.4.5 Roof replacement. Roof replacements shall comply with Section C402.2.1 and Section C402.1.2, C402.1.3, C402.1.4, ~~C402.1.5~~, or C407 of the VECC where all of the following conditions are met. For purposes of this section, roof area shall mean an area of the existing roof of the same building that is bounded by exterior walls, different roof levels, roof edges or perimeters, roof dividers, building expansion joints, or parapets.

1. The roof replacement exceeds 75% or 30,000 square feet (2787.1 m²) of the roof area, whichever is less.
2. The roof assembly is part of the building thermal envelope, as defined by the VECC.
3. The roof assembly contains insulation entirely above the roof deck.

601.4.6 Lighting. Lighting alterations shall comply with Section 601.4.6.1 or 601.4.6.2, as applicable.

601.4.6.1 Commercial Lighting. Altered commercial lighting shall comply with Section C405 of the VECC.

Exception: Alterations that replace less than 10% of the luminaires within a space, provided the replacement luminaires do not increase the existing interior lighting power as determined by Section C405.3.1 of the VECC.

601.4.6.2 Residential lighting. Altered residential lighting shall comply with Section R404 of the VECC.

Exception: Alterations that replace less than 50% of the total luminaires within a space, provided the replacement luminaires do not decrease the efficacy of the lighting equipment as required by Section R404.1 of the VECC.

601.4.7 Ducts. In R-5 occupancies, where ducts from an existing heating and cooling system are extended, such duct systems with less than 40 linear feet (12.19 m) in unconditioned spaces shall not be required to be tested in accordance with Section ~~R403.3.3~~ R403.3.5 of the VECC.

601.4.8 System sizing. Altered heating and cooling equipment shall comply with Section 601.4.8.1 or 601.4.8.2 ~~through~~ and 601.4.8.2.1, as applicable.

601.4.8.1 Commercial system sizing. New commercial heating and cooling equipment that is part of an alteration shall be sized in accordance with Section C403.1.1 of the VECC based on the existing building features as modified by the alteration.

Exception: Where it has been demonstrated to the code official that compliance with this section would result in heating or cooling equipment that is incompatible with the rest of the heating or cooling system.

601.4.8.2 Residential heating and cooling systems. New residential heating and cooling and duct systems that are part of the alteration shall comply with Section R403 of the VECC and this section.

Exception: Where ducts from an existing heating and cooling system are extended to an addition.

601.4.8.2.1 Residential system sizing. New residential heating and cooling equipment that is part of an alteration shall be sized in accordance with Section R403.7 of the VECC based on the existing building features as modified by the alteration.

601.5 Accessibility. Accessibility shall be provided in accordance with applicable provisions of Section 404.

2. Section 602 Alteration - Level 1.

602.1 Scope. Level 1 alterations as described in Section 601.2.1 shall comply with the requirements of this section.

602.2 Conformance. Alterations shall be done in a manner that maintains the following:

1. Level of fire protection that is existing.
2. Level of protection that is existing for the means of egress.

602.3 Building elements and materials. Building elements and materials shall comply with the applicable provisions of Sections 302 and 602.3.1 through 602.3.3.

602.3.1 Interior finishes and trim. All newly installed interior finish and trim materials and wall, floor, and ceiling finishes shall comply with Chapter 8 of the VCC.

602.3.2 Materials and methods. All new building elements and materials shall comply with the materials and methods requirements in the VCC, International Energy Conservation Code, International Mechanical Code, and International Plumbing Code, as applicable, that specify material standards, detail of installation and connection, joints, penetrations, and continuity of any element, component, or system in the building.

602.3.2.1 Reroofing. Materials and methods of application used for recovering or replacing an existing roof covering shall comply with Chapter 15 of the VCC, except as modified by Section 302.1 and this section.

Exceptions:

1. Roof replacement or roof recover of existing low-slope roof coverings shall not be required to meet the minimum design slope requirement of one-quarter unit vertical in 12 units horizontal (2.0% slope) in Section 1507 of the VCC for roofs that provide positive roof drainage.
2. Recovering or replacing an existing roof covering shall not be required to meet the requirement of secondary (emergency overflow) drains or scuppers in Section 1502 of the VCC for roofs that provide positive roof drainage. For the purposes of this exception, existing secondary drainage or scupper systems required in accordance with the VCC shall not be removed unless they are replaced by secondary drains or scuppers designed and installed in accordance with Section 1502 of the VCC.
3. Where the existing roof assembly includes an ice barrier membrane that is adhered to the roof deck, the existing ice barrier membrane shall be permitted to remain in place and covered with an additional layer of ice barrier membrane in accordance with Section 1507 of the VCC.

602.3.2.1.1 Roof recover permitted. The installation of a new roof covering over an existing roof covering shall be permitted where any of the following conditions occur:

1. Complete and separate roofing systems, such as standing-seam metal roof systems, that are designed to transmit the roof loads directly to the building's structural system and that do not rely on existing roofs and roof coverings for support, shall not require the removal of existing roof coverings.
2. Where the application of a new roof covering over wood shingle or shake roofs creates a combustible concealed space, the entire existing surface is covered with gypsum board, mineral fiber, glass fiber, or other approved materials securely fastened in place.
3. The application of a new protective coating over an existing spray polyurethane foam roofing system shall be permitted without tearoff of existing roof coverings.
4. Where the new roof covering is installed in accordance with the roof covering manufacturer's approved instructions.

602.3.2.1.2 Roof recover not permitted. A roof recover shall not be permitted where any of the following conditions occur:

1. Where the existing roof or roof covering is water soaked or has deteriorated to the point that the existing roof or roof covering is not adequate as a base for additional roofing.
2. Where the existing roof covering is slate, clay, cement, or asbestos-cement tile.
3. Where the existing roof has two or more applications of any type of roof covering.

602.3.2.1.3 Reinstallation of materials. Existing slate, clay, or cement tile shall be permitted for reinstallation, except that damaged, cracked, or broken slate or tile shall not be reinstalled. Existing vent flashing, metal edgings, drain outlets, collars, and metal counter-flashings shall not be reinstalled where rusted, damaged, or deteriorated. Aggregate surfacing materials shall not be reinstalled. Metal flashing to which bituminous materials are to be adhered shall be primed prior to installation.

602.3.2.2 Structural and construction loads. Structural roof components shall be capable of supporting the roof covering system and the material and equipment loads that will be encountered during installation of the systems.

Exception: Structural elements where the additional dead load from the roofing or equipment does not increase the force in the element by more than 5.0%; or where the addition of a second layer of roof covering weighing three pounds per square foot (0.1437kN/m²) or less over an existing, single layer of roof covering.

602.3.3 International Fuel Gas Code. The following sections of the International Fuel Gas Code shall constitute the fuel gas materials and methods requirements for Level 1 alterations.

1. All of Chapter 3, entitled "General Regulations," except Sections 303.7 and 306.
2. All of Chapter 4, entitled "Gas Piping Installations," except Sections 401.8 and 402.3. Sections 401.8 and 402.3 shall apply when the work being performed increases the load on the system

such that the existing pipe does not meet the size required by code. Existing systems that are modified shall not require resizing as long as the load on the system is not increased and the system length is not increased even if the altered system does not meet code minimums.

3. All of Chapter 5, entitled "Chimneys and Vents."

4. All of Chapter 6, entitled "Specific Appliances."

3. Section 603 Alteration - Level 2.

603.1 Scope. Level 2 alterations as described in Section 601.2.2 shall comply with the requirements of this section.

Exception: Buildings in which the alteration is exclusively the result of compliance with the accessibility requirements of Section 404.3 shall be permitted to comply with Section 602.

603.2 Level 1 alteration compliance. In addition to the requirements of this section, all alterations shall comply with the applicable requirements of Section 602.

603.3 Compliance. All new construction elements, components, systems, and spaces shall comply with the requirements of the VCC.

Exceptions:

1. Windows may be added without requiring compliance with the light and ventilation requirements of the VCC.
2. Where an approved automatic sprinkler system is installed throughout the story, the required fire-resistance rating for any corridor located on the story shall be permitted to be reduced in accordance with the VCC. In order to be considered for a corridor rating reduction, such system shall provide coverage for the stairway landings serving the floor and the intermediate landings immediately below.
3. In other than Groups A and H occupancies, the maximum length of a newly constructed or extended dead-end corridor shall not exceed 50 feet (15240 mm) on floors equipped with an automatic sprinkler system installed in accordance with the VCC.
4. The minimum ceiling height of the newly created habitable and occupiable spaces and corridors shall be seven feet (2134 mm).
5. Where provided in below-grade transportation stations, new escalators shall be permitted to have a clear width of less than 32 inches (815 mm).

603.4 Fire-resistance ratings. In buildings where an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2 of the VCC has been added and the building is now sprinklered throughout, the required fire-resistance ratings of building elements and materials shall be permitted to meet the requirements of the current building code.

603.5 Mechanical. In mechanically ventilated spaces, existing mechanical ventilation systems that are altered, reconfigured, or extended shall provide not less than five cubic feet per minute (cfm) (0.0024 m³/s) per person of outdoor air and not less than 15 cfm (0.0071 m³/s) of ventilation air per person or not less than the amount of ventilation air determined by the Indoor Air Quality Procedure of ASHRAE 62.1.

603.5.1 Local exhaust. All newly introduced devices, equipment, or operations that produce airborne particulate matter, odors, fumes, vapor, combustion products, gaseous contaminants, pathogenic and allergenic organisms, and microbial contaminants in such quantities as to affect adversely or impair health or cause discomfort to occupants shall be provided with local exhaust.

603.7 Structural. Structural elements and systems within buildings undergoing Level 2 alterations shall comply with Sections 603.7.1 through 603.7.6.

603.7.1 New structural elements. New structural elements in alterations, including connections and anchorage, shall comply with the VCC.

603.7.2 Minimum design loads. The minimum design loads on existing elements of a structure that do not support additional loads as a result of an alteration shall be the loads applicable at the time the building was constructed.

603.7.3 Existing structural elements carrying gravity loads. Any existing gravity load-carrying structural element for which an alteration causes an increase in design gravity load of more than 5.0% shall be strengthened, supplemented, replaced, or otherwise altered as needed to carry the increased gravity load required by the VCC for new structures. Any existing gravity load-carrying structural element whose gravity load-carrying capacity is decreased as part of the alteration shall be shown to have the capacity to resist the applicable design gravity loads required by the VCC for new structures.

Exception: Buildings of Group R occupancy with not more than five dwelling or sleeping units used solely for residential purposes where the existing building and its alteration comply with the conventional light-frame construction methods of the VCC or the provisions of the International Residential Code.

603.7.3.1 Design live load. Where the alteration does not result in increased design live load, existing gravity load-carrying structural elements shall be permitted to be evaluated and designed for live loads approved prior to the alteration. If the approved live load is less than that required by Section 1607 of the VCC, the area designed for the nonconforming live load shall be posted with placards of approved design indicating the approved live load. Where the alteration does result in increased design live load, the live load required by Section 1607 of the VCC shall be used.

603.7.4 Existing structural elements resisting lateral loads. Except as permitted by Section 603.7.5, where the alteration increases design lateral loads in accordance with Section 1609 or 1613 of the VCC, where the alteration results in a prohibited structural irregularity as defined in ASCE 7, or where the alteration decreases the capacity of any existing lateral load-carrying structural element, the structure of the altered building or structure shall be shown to meet the requirements of Sections 1609 and 1613 of

the VCC. For purposes of this section, compliance with ASCE 41, using a Tier 3 procedure and the two-level performance objective in Table 305.2.2 for the applicable risk category, shall be deemed to meet the requirements of Section 1613 of the VCC.

Exceptions:

1. Any existing lateral load-carrying structural element whose demand-capacity ratio with the alteration considered is not more than 10% greater than its demand-capacity ratio with the alteration ignored shall be permitted to remain unaltered. For purposes of calculating demand-capacity ratios, the demand shall consider applicable load combinations with design lateral loads or forces in accordance with VCC Sections 1609 and 1613. Reduced VCC level seismic forces in accordance with Section 305.2.2 shall be permitted. For purposes of this exception, comparisons of demand-capacity ratios and calculation of design lateral loads, forces, and capacities shall account for the cumulative effects of additions and alterations since original construction.
2. Buildings of Group R occupancy with no more than five dwelling or sleeping units used solely for residential purposes that are altered based on the conventional light-frame construction methods of the VCC or in compliance with the provisions of the IRC.
3. Where such alterations involve only the lowest story of a building and the change of occupancy provisions of Chapter 7 do not apply, only the lateral force-resisting components in and below that story need comply with this section.

603.7.5 Voluntary lateral force-resisting system alterations. Alterations of existing structural elements and additions of new structural elements that are initiated for the purpose of increasing the lateral force-resisting strength or stiffness of an existing structure and that are not required by other sections of this code shall not be required to be designed for forces conforming to the VCC, provided that an engineering analysis is submitted to show that:

1. The capacity of existing structural elements required to resist forces is not reduced;
2. The lateral loading to existing structural elements is not increased either beyond their capacity or more than 10%;
3. New structural elements are detailed and connected to the existing structural elements as required by the VCC;
4. New or relocated nonstructural elements are detailed and connected to existing or new structural elements as required by the VCC; and
5. Voluntary alterations to lateral force-resisting systems conducted in accordance with Appendix A and the referenced standards of this code shall be permitted.

603.7.6 Voluntary seismic improvements. Alterations to existing structural elements or additions of new structural elements that are not otherwise required by this chapter and are initiated for the purpose of improving the performance of the seismic force resisting system of an existing structure or the

performance of seismic bracing or anchorage of existing nonstructural elements shall be permitted, provided that an engineering analysis is submitted demonstrating the following:

1. The altered structure and the altered nonstructural elements are no less conforming to the provisions of the VCC with respect to earthquake design than they were prior to the alteration.
2. New structural elements are detailed as required for new construction.
3. New or relocated nonstructural elements are detailed and connected to existing or new structural elements as required for new construction.
4. The alterations do not create a structural irregularity as defined in ASCE 7 or make an existing structural irregularity more severe.

13VAC5-63-433.5. Chapter 7 Change of occupancy.

Replace Chapter 7 of the IEBC with the following:

1. Section 701 General.

701.1 Scope. The provisions of this chapter shall apply where a change of occupancy occurs, except as modified by Section 906 for historic buildings. Compliance with the current VCC for the change of occupancy shall only be required as prescribed in this chapter. Compliance shall be only as necessary to meet the specific provisions of the applicable International Codes and is not intended to require the entire building be brought into compliance.

Exception: Chapter 14 shall be permitted as a compliance alternative to this chapter for a change of occupancy to buildings that will not continue to be or are not proposed to be Institutional Group I occupancies, High-Hazard Group H occupancies, or Residential Group R-5.

701.2 Work undertaken in connection with a change of occupancy. Any repairs, alterations, or additions undertaken in connection with a change of occupancy shall conform to the applicable requirements for the work as classified in this code and as modified by this chapter.

2. Section 702 Special Use and Occupancy.

702.1 Compliance with the building code. Where a building undergoes a change of occupancy to one of the special use or occupancy categories described in Chapter 4 of the VCC, the building shall comply with all of the requirements of Chapter 4 of the VCC applicable to the special use or occupancy.

702.2 Incidental uses. Where a portion of a building undergoes a change of occupancy to one of the incidental uses listed in Table 509 of the VCC, the incidental use shall comply with the applicable requirements of Section 509 of the VCC.

3. Section 703 Building Elements and Materials.

703.1 Interior finish. In areas of the building undergoing a change of occupancy classification, the interior finish of walls and ceilings shall comply with the requirements of the VCC for the new occupancy classification.

703.2 Enclosure of vertical openings. When a change of occupancy classification is made to a higher hazard category as shown in Table 705.2, protection of existing vertical openings shall be in accordance with Sections 703.2.1 through 703.2.3.

703.2.1 Stairways. Interior stairways shall be protected as required by Section 705.1.

703.2.2 Other vertical openings. Interior vertical openings, other than stairways, within the area of the change of occupancy shall be protected as required by the VCC.

Exceptions:

1. Existing one-hour interior shaft enclosures shall be accepted where a higher rating is required.
2. Vertical openings, other than stairways, in buildings of other than Group I occupancy and connecting less than six stories shall not be required to be enclosed and are permitted if the entire building is provided with an approved automatic sprinkler system.

703.2.3 Shaft openings. All openings into existing vertical shaft enclosures shall be protected by fire assemblies having a fire protection rating of not less than one hour and shall be maintained self-closing or shall be automatic-closing by actuation of a smoke detector. All other openings shall be fire protected in an approved manner. Existing fusible link-type automatic door-closing devices shall be permitted in all shafts except stairways if the fusible link rating does not exceed 135°F (57°C).

4. Section 704 Fire Protection.

704.1 Fire protection systems. Fire protection systems shall be provided in accordance with Sections 704.2 through 704.4.

704.2 Fire sprinkler system. Where a building undergoes a change of occupancy that requires an automatic fire sprinkler system to be provided based on the new occupancy in accordance with Section 903 of the VCC, such automatic fire sprinkler system shall be provided throughout the area where the change of occupancy occurs.

704.3 Fire alarm and detection system. Where a building undergoes a change of occupancy that requires a fire alarm and detection system to be provided based on the new occupancy in accordance with Section 907 of the VCC, such fire alarm and detection system shall be provided throughout the area where the change of occupancy occurs. Existing alarm notification appliances shall be automatically activated throughout the building. Where the building is not equipped with a fire alarm system, alarm notification appliances shall be provided throughout the area where the change of occupancy occurs in accordance with Section 907 of the VCC as required for new construction.

704.4 Standpipe system. Where a building undergoes a change of occupancy that requires a standpipe system to be provided based on the new occupancy in accordance with Section 905 of the VCC, such standpipe system shall be provided to serve the area where the change of occupancy occurs.

5. Section 705 Means of Egress.

705.1 General. Means of egress in buildings undergoing a change of occupancy shall comply with Sections 705.2 through 705.4.

705.2 Means of egress, hazards. Hazard categories in regard to life safety and means of egress shall be in accordance with Table 705.2.

TABLE 705.2 MEANS OF EGRESS HAZARD CATEGORIES	
RELATIVE HAZARD	OCCUPANCY CLASSIFICATIONS
1 (Highest Hazard)	H
2	I-2, I-3, I-4
3	A, E, I-1, M, R-1, R-2, R-4
4	B, F-1, R-3, S-1, R-5
5 (Lowest Hazard)	F-2, S-2, U

705.3 Means of egress for change to higher hazard category. When a change of occupancy classification is made to a higher hazard category (lower number) as shown in Table 705.2, the means of egress serving the area of the change of occupancy shall comply with the requirements of Chapter 10 of the VCC, except as modified in Sections 705.3.1 through 705.3.7.

705.3.1 Corridor fire-resistance ratings. The following exceptions apply to the fire-resistance rated corridor provisions in the VCC:

1. Existing corridor walls constructed on both sides of wood lath and plaster in good condition or 1/2-inch-thick (12.7 mm) gypsum wallboard are equivalent to a one-hour fire-resistance rating. Such walls shall either terminate at the underside of a ceiling of equivalent construction or extend to the underside of the floor or roof next above.
2. Dwelling unit or sleeping unit corridor doors and transom openings are permitted to comply with any of the following:
 - 2.1 Be at least 1-3/8-inch (35 mm) solid-core wood or approved equivalent, shall not have any glass panels other than approved wired glass or other approved glazing material in metal frames, and shall be equipped with approved door closers.

2.2 Meet the requirements of "Guidelines on Fire Ratings of Archaic Materials and Assemblies" (VEBC Resource A) for a rating of 15 minutes or more.

2.3 In buildings protected throughout with an approved automatic sprinkler system, resist smoke, be reasonably tight fitting, and not contain louvers.

2.4 In group homes with a maximum of 15 occupants and that are protected with an approved automatic smoke detection system, closing devices may be omitted.

2.5 Transoms in corridor walls shall be either glazed with 1/4-inch (6.4 mm) wired glass set in metal frames or other glazing assemblies having a fire-protection rating as required for the door and permanently secured in the closed position or sealed with materials consistent with the corridor construction.

3. Openings in a corridor and any window in a corridor not opening to the outside air shall be sealed with materials consistent with the corridor construction.

705.3.2 Dead-end corridors. Dead-end corridors shall not exceed 35 feet (10670 mm).

Exceptions:

1. Where dead-end corridors of greater length are permitted by the VCC.

2. In other than Groups A and H occupancies, the maximum length of an existing dead-end corridor shall be 50 feet (15240 mm) in buildings equipped throughout with an automatic fire alarm system installed in accordance with the VCC.

3. In other than Groups A and H occupancies, the maximum length of an existing dead-end corridor shall be 70 feet (21356 mm) in buildings equipped throughout with an automatic sprinkler system installed in accordance with the VCC.

4. In other than Groups A and H occupancies, the maximum length of an existing, newly constructed, or extended dead-end corridor shall not exceed 50 feet (15240 mm) on floors equipped with an automatic sprinkler system installed in accordance with the VCC.

705.3.3 Emergency escape and rescue openings. An existing operable window with clear opening area not less than four square feet (0.38 m²) and minimum opening height and width of 22 inches (559 mm) and 20 inches (508 mm), respectively, shall be accepted as an emergency escape and rescue opening.

705.3.4 Fire escapes. Fire escapes shall be in compliance with Section 303.

705.3.5 Interior stairway fire-resistance ratings. Existing interior stairways connecting two or more floors shall be enclosed with approved assemblies having a fire-resistance rating of not less than one hour with approved opening protectives from the highest floor where the change of occupancy classification occurs to and including the level of exit discharge and all floors below.

Exceptions:

1. Where interior stairway enclosure is not required by the VCC.
2. Unenclosed existing stairways need not be enclosed in a continuous vertical shaft if each story is separated from other stories by one-hour fire-resistance-rated construction or approved wired glass set in steel frames and all exit corridors are sprinklered. The openings between the corridor and the occupant space shall have at least one sprinkler head above the openings on the tenant side. The sprinkler system shall be permitted to be supplied from the domestic water supply systems, provided the system is of adequate pressure, capacity, and sizing for the combined domestic and sprinkler requirements.
3. In Group A occupancies, a minimum 30-minute enclosure shall be permitted to protect all interior stairways not exceeding three stories.
4. In Group B occupancies, a minimum 30-minute enclosure shall not be permitted to protect all interior stairways not exceeding three stories. This enclosure shall not be required in the following locations:
 - 4.1 Buildings not exceeding 3,000 square feet (279 m²) per floor.
 - 4.2 Buildings protected throughout by an approved automatic fire sprinkler system.
5. In Group E occupancies, the enclosure shall not be required for interior stairways not exceeding three stories when the building is protected throughout by an approved automatic fire sprinkler system.
6. In Group F occupancies, the enclosure shall not be required in the following locations:
 - 6.1 Interior stairways not exceeding three stories.
 - 6.2 Special purpose occupancies where necessary for manufacturing operations and direct access is provided to at least one protected stairway.
 - 6.3 Buildings protected throughout by an approved automatic sprinkler system.
7. In Group H occupancies, the enclosure shall not be required for interior stairways not exceeding three stories where stairways are necessary for manufacturing operations and every floor level has direct access to at least two remote enclosed stairways or other approved exits.
8. In Group M occupancies, a minimum 30-minute enclosure shall be permitted to protect all interior stairways not exceeding three stories. This enclosure shall not be required in the following locations:
 - 8.1 Stairways connecting only two floor levels.

8.2 Occupancies protected throughout by an approved automatic sprinkler system.

9. In Group R-1 occupancies, the enclosure shall not be required for interior stairways not exceeding three stories in the following locations:

9.1 Buildings protected throughout by an approved automatic sprinkler system.

9.2 Buildings with fewer than 25 dwelling units or sleeping units where every sleeping room above the second floor is provided with direct access to a fire escape or other approved second exit by means of an approved exterior door or window having a sill height of not greater than 44 inches (1118 mm) and where:

9.2.1 Any exit access corridor exceeding eight feet (2438 mm) in length that serves two means of egress, one of which is an unprotected vertical opening, has at least one of the means of egress separated from the vertical opening by a one-hour fire barrier; and

9.2.2 The building is protected throughout by an automatic fire alarm system, installed and supervised in accordance with the VCC.

10. In Group R-2 occupancies, a minimum 30-minute enclosure shall be permitted to protect interior stairways not exceeding three stories. This enclosure shall not be required in the following locations:

10.1 Interior stairways not exceeding two stories with not more than four dwelling units per floor.

10.2 Buildings protected throughout by an approved automatic sprinkler system.

10.3 Buildings with not more than four dwelling units per floor where every sleeping room above the second floor is provided with direct access to a fire escape or other approved second exit by means of an approved exterior door or window having a sill height of not greater than 44 inches (1118 mm), and the building is protected throughout by an automatic fire alarm system complying with the VCC.

11. Stairway enclosure is not required in one-family and two-family dwellings.

12. Group S occupancies where connecting not more than two floor levels or where connecting not more than three floor levels and the structure is equipped throughout with an approved automatic sprinkler system.

13. Group S occupancies where stairway protection is not required for open parking garages and ramps.

705.3.6 Stairway geometry. Existing stairways are not required to be altered to meet tread depth and riser height requirements of the VCC.

705.3.7 Stairway handrails. Existing stairways are required to have a VCC compliant handrail on one side up to a required egress width of 66 inches (1676 mm) and both sides when the required egress width exceeds 66 inches (1676 mm).

705.4 Means of egress for change of occupancy to equal or lower hazard category or without a change in classification. When a change of occupancy classification is made to an equal or lesser hazard category (higher number) as shown in Table 705.2 or a change of occupancy without a change of classification is made, the means of egress shall be deemed acceptable provided the means of egress serving the area of the change of occupancy meets the egress capacity and occupant load based means of egress provisions in Chapter 10 of the VCC for the new occupancy.

6. Section 706 Heights and Areas.

706.1 General. Heights and areas of buildings and structures undergoing a change of occupancy classification shall comply with Sections 706.2 through 706.5.

706.2 Heights and areas, hazards. Hazard categories in regard to height and area shall be in accordance with Table 706.2.

TABLE 706.2 HEIGHTS AND AREAS HAZARD CATEGORIES	
RELATIVE HAZARD	OCCUPANCY CLASSIFICATIONS
1 (Highest Hazard)	H
2	A-1, A-2, A-3, A-4, I, R-1, R-2, R-4
3	E, F-1, S-1, M
4 (Lowest Hazard)	B, F-2, S-2, A-5, R-3, R-5, U

706.3 Height and area for change to higher hazard category. When a change of occupancy classification is made to a higher hazard category as shown in Table 706.2, heights and areas of buildings and structures shall comply with the requirements of Chapter 5 of the VCC for the new occupancy classification.

Exception: For high-rise buildings constructed in compliance with a previously issued permit, the type of construction reduction specified in Section 403.2.1 of the VCC is permitted. This shall include the reduction for columns. The high-rise building is required to be equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 of the VCC.

706.3.1 Fire wall alternative. In other than Groups H, F-1, and S-1, fire barriers and horizontal assemblies constructed in accordance with Sections 707 and 711, respectively, of the VCC shall be permitted to be

used in lieu of fire walls to subdivide the building into separate buildings for the purpose of complying with the area limitations required for the new occupancy where all of the following conditions are met:

1. The buildings are protected throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 of the International Building Code.
2. The maximum allowable area between fire barriers, horizontal assemblies, or any combination thereof shall not exceed the maximum allowable area determined in accordance with Chapter 5 of the VCC without an increase allowed for an automatic sprinkler system in accordance with Section 506 of the VCC.
3. The fire-resistance rating of the fire barriers and horizontal assemblies shall be not less than that specified for fire walls in Table 706.4 of the VCC.

Exception: Where horizontal assemblies are used to limit the maximum allowable area, the required fire-resistance rating of the horizontal assemblies shall be permitted to be reduced by one hour provided the height and number of stories increases allowed for an automatic sprinkler system by Section 504 of the VCC are not used for the buildings.

706.4 Height and area for change to equal or lesser hazard category. When a change of occupancy classification is made to an equal or lesser hazard category as shown in Table 706.2, the height and area of the existing building shall be deemed acceptable.

706.5 Fire barriers. When a change of occupancy classification is made to a higher hazard category as shown in Table 706.2, fire barriers in separated mixed use buildings shall comply with the fire-resistance requirements of the VCC.

Exception: Where the fire barriers are required to have a one-hour-fire-resistance rating, existing wood lath and plaster in good condition or existing 1/2-inch-thick (12.7 mm) gypsum wallboard shall be permitted.

7. Section 707 Exterior Wall Fire-Resistance Ratings.

707.1 Exterior wall fire-resistance ratings, hazards. Hazard categories in regard to fire-resistance ratings of exterior walls shall be in accordance with Table 707.1.

TABLE 707.1 EXPOSURE OF EXTERIOR WALLS HAZARD CATEGORIES	
RELATIVE HAZARD	OCCUPANCY CLASSIFICATIONS
1 (Highest Hazard)	H
2	F-1, M, S-1
3	A, B, E, I, R

707.2 Exterior wall rating for change of occupancy classification to a higher hazard category. When a change of occupancy classification is made to a higher hazard category as shown in Table 707.1, exterior walls shall have fire resistance and exterior opening protectives as required by the VCC.

707.3 Exterior wall rating for change of occupancy classification to an equal or lesser hazard category. When a change of occupancy classification is made to an equal or lesser hazard category as shown in Table 707.1, existing exterior walls, including openings, shall be accepted.

707.4 Opening protectives. Openings in exterior walls shall be protected as required by the VCC. Where openings in the exterior walls are required to be protected because of their distance from the lot line, the sum of the area of such openings shall not exceed 50% of the total area of the wall in each story.

Exceptions:

1. Where the VCC permits openings in excess of 50%.
2. Protected openings shall not be required in buildings of Group R occupancy that do not exceed three stories in height and that are located not less than three feet (914 mm) from the lot line.
3. Where exterior opening protectives are required, an automatic sprinkler system throughout may be substituted for opening protection.
4. Exterior opening protectives are not required when the change of occupancy group is to an equal or lower hazard classification in accordance with Table 707.1.

8. Section 708 Electrical and Lighting.

708.1 Special occupancies. Where a building undergoes a change of occupancy to one of the following special occupancies as described in NFPA 70, the electrical wiring and equipment of the building that contains the proposed occupancy shall comply with the applicable requirements of NFPA 70:

1. Hazardous locations.
2. Commercial garages, repair, and storage.
3. Aircraft hangars.
4. Gasoline dispensing and service stations.
5. Bulk storage plants.
6. Spray application, dipping, and coating processes.
7. Health care facilities.

8. Places of assembly.

9. Theaters, audience areas of motion picture and television studios, and similar locations.

10. Motion picture and television studios and similar locations.

11. Motion picture projectors.

12. Agricultural buildings.

708.2 Service upgrade. When a new occupancy is required to have a higher electrical load demand per NFPA 70 and the service cannot accommodate the increased demand, the service shall be upgraded to meet the requirements of NFPA 70 for the new occupancy.

708.3 Number of electrical outlets. Where a building undergoes a change of occupancy, the number of electrical outlets shall comply with NFPA 70 for the new occupancy.

708.4 Lighting. Lighting shall comply with the requirements of the VCC for the new occupancy.

9. Section 709 Mechanical and Ventilation.

709.1 Mechanical and ventilation requirements. Where a building undergoes a change of occupancy such that the new occupancy is subject to different kitchen exhaust requirements or to increased ventilation requirements in accordance with the International Mechanical Code, the new occupancy shall comply with the respective International Mechanical Code provisions.

10. Section 710 Plumbing.

710.1 Increased demand. Where a building or portion thereof undergoes a change of occupancy, such that the new occupancy is subject to increased or different plumbing fixture requirements or to increased water supply requirements in accordance with the International Plumbing Code, the new occupancy shall comply with the respective International Plumbing Code provisions.

Exception: In other than Group R or I occupancies or child care facilities classified as Group E, where the occupant load is increased by 20% or less in the area where the change of occupancy occurs, additional plumbing fixtures required based on the increased occupant load in quantities specified in the International Plumbing Code are not required.

710.2 Interceptor required. If the new occupancy will produce grease or oil-laden wastes, interceptors shall be provided as required in the International Plumbing Code.

710.3 Chemical wastes. If the new occupancy will produce chemical wastes, the following shall apply:

1. If the existing piping is not compatible with the chemical waste, the waste shall be neutralized prior to entering the drainage system, or the piping shall be changed to a compatible material.
2. No chemical waste shall discharge to a public sewer system without the approval of the sewage authority.

11. Section 711 Structural.

711.1 Gravity loads. Buildings subject to a change of occupancy where such change in the nature of occupancy results in higher uniform or concentrated loads based on Table 1607.1 of the VCC shall comply with the gravity load provisions of the VCC.

Exception: Structural elements whose stress is not increased by more than 5.0%.

711.2 Snow and wind loads. Buildings and structures subject to a change of occupancy where such change in the nature of occupancy results in higher wind or snow risk categories based on Table 1604.5 of the VCC shall be analyzed and shall comply with the applicable wind or snow load provisions of the VCC.

Exception: Where the new occupancy with a higher risk category is less than or equal to 10% of the total building floor area. The cumulative effect of the area of occupancy changes shall be considered for the purposes of this exception.

711.3 Seismic loads. Existing buildings with a change of occupancy shall comply with the seismic provisions of Sections 711.3.1 and 711.3.2.

711.3.1 Compliance with VCC-level seismic forces. Where a building is subject to a change of occupancy that results in the building being assigned to a higher risk category based on Table 1604.5 of the VCC, the building shall comply with the requirements for VCC-level seismic forces as specified in Section 305.2.1 for the new risk category.

Exceptions:

1. Specific detailing provisions required for a new structure are not required to be met where it can be shown that an equivalent level of performance and seismic safety is obtained for the applicable risk category based on the provision for reduced VCC-level seismic forces as specified in Section 305.2.2.
2. Where the area of the new occupancy with a higher hazard category is less than or equal to 10% of the total building floor area and the new occupancy is not classified as Risk Category IV. For the purposes of this exception, buildings occupied by two or more occupancies not included in the same risk category, shall be subject to the provisions of Section 1604.5.1 of the VCC. The cumulative effect of the area of occupancy changes shall be considered for the purposes of this exception.
3. Unreinforced masonry bearing wall buildings in Risk Category III when assigned to Seismic Design Category A or B shall be allowed to be strengthened to meet the requirements of Appendix A.
4. Specific seismic detailing requirements of Section 1613 of the VCC for a new structure shall not be required to be met where the seismic performance is shown to be equivalent to that of a new structure. A demonstration of equivalence shall consider the regularity, overstrength, redundancy, and ductility of the structure.

5. When a change of occupancy results in a structure being reclassified from Risk Category I or II to Risk Category III and the structure is located where the seismic coefficient, SDS, is less than 0.33, compliance with the seismic requirements of Section 1613 of the VCC is not required.

711.3.2 Access to Risk Category IV. Where a change of occupancy is such that compliance with Section 711.3.1 is required and the building is assigned to Risk Category IV, the operational access to the building shall not be through an adjacent structure unless that structure conforms to the requirements for Risk Category IV structures. Where operational access is less than 10 feet (3048 mm) from either an interior lot line or from another structure, access protection from potential falling debris shall be provided by the owner of the Risk Category IV structure.

12. Section 712 Accessibility.

712.1 General. Existing buildings that undergo a change of occupancy classification shall comply with Section 402.

13VAC5-63-434. Chapter 8 Additions.

Replace Chapter 8 of the IEBC with the following:

1. Section 801 General.

801.1 Scope. Additions to any building or structure shall comply with the requirements of the VCC for new construction without requiring the existing building or structure to comply with any requirements of those codes or of these provisions, except as required by this chapter. Where an addition impacts the existing building or structure, that portion shall comply with this code. Where a fire wall that complies with Section 706 of the VCC is provided between the addition and the existing building, the addition shall be considered a separate building.

Note: Where one or more newly constructed fire walls that comply with Section 706 of the VCC are provided between an existing building, structure, or portions thereof and a new building, this chapter is not applicable per Section 102.2.3.

801.2 Creation or extension of nonconformity. An addition shall not create or extend any nonconformity in the existing building to which the addition is being made with regard to accessibility, structural strength, fire safety, means of egress, or the capacity of mechanical, plumbing, or electrical systems. Alterations to the existing building or structure shall be made so that the existing building or structure, together with the addition, are no less conforming to the provisions of the VCC than the existing building or structure was prior to the addition.

801.3 Other work. Any repair or alteration work within an existing building to which an addition is being made shall comply with the applicable requirements for the work as classified in this code.

2. Section 802 Heights and Areas.

802.1 Height limitations. No addition shall increase the height of an existing building beyond that permitted under the applicable provisions of Chapter 5 of the VCC for new buildings.

802.2 Area limitations. No addition shall increase the area of an existing building beyond that permitted under the applicable provisions of Chapter 5 of the VCC for new buildings unless fire separation as required by the VCC is provided.

Exceptions: The following shall be permitted beyond that permitted by the VCC.

1. In-filling of floor openings such as elevator and exit stairway shafts.
2. The addition of nonoccupiable spaces such as elevators, stairs, and vestibules.

802.3 Fire protection systems. Existing fire areas increased by the addition shall comply with Chapter 9 of the VCC.

3. Section 803 Structural.

803.1 Compliance with the VCC. Additions to existing buildings or structures are new construction and shall comply with the VCC.

803.2 Existing structural elements carrying gravity load. Any existing gravity load-carrying structural element for which an addition and its related alterations cause an increase in design gravity load of more than 5.0% shall be strengthened, supplemented, replaced, or otherwise altered as needed to carry the increased gravity load required by the VCC for new structures. Any existing gravity load-carrying structural element whose gravity load-carrying capacity is decreased shall be considered an altered element subject to the requirements of Section 603.7.3. Any existing element that will form part of the lateral load path for any part of the addition shall be considered an existing lateral load-carrying structural element subject to the requirements of Section 803.3.

Exception: Buildings of Group R occupancy with no more than five dwelling units or sleeping units used solely for residential purposes where the existing building and the addition comply with the conventional light-frame construction methods of the VCC or the provisions of the International Residential Code.

803.2.1 Design live load. Where the addition does not result in increased design live load, existing gravity load-carrying structural elements shall be permitted to be evaluated and designed for live loads approved prior to the addition. If the approved live load is less than that required by Section 1607 of the VCC, the area designed for the nonconforming live load shall be posted with placards of approved design indicating the approved live load. Where the addition does result in increased design live load, the live load required by Section 1607 of the VCC shall be used.

803.3 Existing structural elements carrying lateral load. Where the addition is structurally independent of the existing structure, existing lateral load-carrying structural elements shall be permitted to remain unaltered. Where the addition is not structurally independent of the existing structure, the existing structure and its addition acting together as a single structure shall be shown to meet the requirements of Sections 1609 and 1613 of the VCC. For purposes of this section, compliance with

ASCE 41, using a Tier 3 procedure and the two-level performance objective in Table 305.2.1 for the applicable risk category, shall be deemed to meet the requirements of Section 1613.

Exceptions:

1. Any existing lateral load-carrying structural element whose demand-capacity ratio with the addition considered is not more than 10% greater than its demand-capacity ratio with the addition ignored shall be permitted to remain unaltered. For purposes of this exception, comparisons of demand-capacity ratios and calculation of design lateral loads, forces, and capacities shall account for the cumulative effects of additions and alterations since original construction. For purposes of calculating demand-capacity ratios, the demand shall consider applicable load combinations involving VCC-level seismic forces in accordance with Section 305.2.1.
2. Buildings of Group R occupancy with no more than five dwelling or sleeping units used solely for residential purposes where the existing building and the addition comply with the conventional light-frame construction methods of the VCC or the provisions of the International Residential Code.
3. Buildings in which the increase in the demand-capacity ratio is due entirely to the addition of rooftop-supported mechanical equipment individually having an operating weight less than 400 pounds (181.4 kg) and where the total additional weight of all rooftop equipment placed after initial construction of the building is less than 10% of the roof dead load. For the purposes of this exception, "roof" shall mean the roof level above a particular story.

803.4 Voluntary addition of structural elements to improve the lateral force-resisting system.

Voluntary addition of structural elements to improve the lateral force-resisting system of an existing building shall comply with Section 603.7.5.

803.5 Snow drift loads. Any structural element of an existing building subject to additional loads from the effects of snow drift as a result of an addition shall comply with the VCC.

Exceptions:

1. Structural elements whose stress is not increased by more than 5.0%.
2. Buildings of Group R occupancy with no more than five dwelling units or sleeping units used solely for residential purposes where the existing building and the addition comply with the conventional light-frame construction methods of the VCC or the provisions of the International Residential Code.

4. Section 804 Flood Hazard Areas.

804.1 Flood hazard areas. Additions and foundations in flood hazard areas shall comply with the following requirements:

1. For horizontal additions that are structurally interconnected to the existing building:

1.1. If the addition and all other proposed work, when combined, constitute substantial improvement, the existing building and the addition shall comply with Section 1612 of the International Building Code or Section ~~R322~~ R306 of the International Residential Code, as applicable.

1.2. If the addition constitutes substantial improvement, the existing building and the addition shall comply with Section 1612 of the International Building Code or Section ~~R322~~ R306 of the International Residential Code, as applicable.

2. For horizontal additions that are not structurally interconnected to the existing building:

2.1. The addition shall comply with Section 1612 of the International Building Code or Section ~~R322~~ R306 of the International Residential Code, as applicable.

2.2. If the addition and all other proposed work when combined constitute substantial improvement, the existing building and the addition shall comply with Section 1612 of the International Building Code or Section ~~R322~~ R306 of the International Residential Code, as applicable.

3. For vertical additions and all other proposed work that when combined constitute substantial improvement, the existing building shall comply with Section 1612 of the International Building Code or Section ~~R322~~ R306 of the International Residential Code, as applicable.

4. For a raised or extended foundation, if the foundation work and all other proposed work when combined constitute substantial improvement, the existing building shall comply with Section 1612 of the International Building Code or Section ~~R322~~ R306 of the International Residential Code, as applicable.

5. For a new foundation or replacement foundation, the foundation shall comply with Section 1612 of the International Building Code or Section ~~R322~~ R306 of the International Residential Code, as applicable.

5. Section 805 Energy Conservation.

805.1 General. Additions to an existing building or portion thereof shall conform to the provisions of the VECC as those provisions relate to new construction without requiring the unaltered portion of the existing building to comply with the VECC. Additions shall not overload existing building systems. An addition shall be deemed to comply with the VECC if the addition alone complies or if the existing building and addition comply with the VECC as a single building.

805.2 Residential compliance. Residential additions shall comply with Section 805.2.1 or 805.2.2.

805.2.1 Prescriptive compliance. Additions shall comply with Sections 805.2.1.1 through 805.2.1.4.

805.2.1.1 Building envelope. New building envelope assemblies that are part of the addition shall comply with Sections R402.1, R402.2, ~~R402.3.1~~ R402.4.1 through ~~R402.3.5~~, R402.4.5, and ~~R402.4~~ R402.5 of the VECC.

Exception: The building envelope of the addition shall be permitted to comply through a ~~Total UA~~ component performance analysis, as determined in Section R402.1.5 of the VECC, where the total building thermal envelope thermal conductance of the existing building and including the addition and any alterations that are part of the project is less than or equal to the Total UA generated for total building thermal envelope thermal conductance of the existing building.

805.2.1.2 Heating and cooling systems. New heating, cooling, and duct systems that are part of the addition shall comply with Section R403 of the VECC.

805.2.1.3 Service hot water systems. New service hot water systems that are part of the addition shall comply with Section R403.4 of the VECC.

805.2.1.4 Lighting. New lighting systems that are part of the addition shall comply with Section R404.1 of the VECC.

805.2.2 Performance compliance. The addition shall comply with the simulated performance alternative where the annual energy cost or energy use of the addition and the existing building and any alterations that are part of the project is less than or equal to the annual energy cost of the existing building when modeled in accordance with Section R405 of the VECC.

805.3 Commercial Compliance. Commercial additions shall comply with Section 805.3.1 or 805.3.2.

Exception: Commercial additions complying with ANSI/ASHRAE/IESNA 90.1.

805.3.1 Prescriptive compliance. Additions shall comply with Sections C402, C403, C404, and C405 of the VECC.

805.3.2 Performance compliance. The addition shall comply with the simulated performance alternative where the annual energy cost or energy use of the addition and the existing building and any alterations that are part of the project is less than or equal to the annual energy cost or use of the existing building when modeled in accordance with Section C407 of the VECC.

13VAC5-63-434.5. Chapter 9 Historic buildings.

Replace Chapter 9 of the IEBC with the following:

1. Section 901 General.

901.1 Scope. It is the intent of this chapter to provide means for the preservation of historic buildings. The provisions of this code relating to construction involving historic buildings shall not be mandatory unless such construction constitutes a life safety hazard. Accessibility shall be provided in accordance with Section 405.

901.2 Report. The code official shall be permitted to require that a historic building undergoing repair, alteration, or change of occupancy be investigated and evaluated by a registered design professional or other qualified person or agency as a condition of determining compliance with this code.

901.3 Special occupancy exceptions. When a building in Group R-3 is also used for Group A, B, or M purposes such as museum tours, exhibits, and other public assembly activities or for museums less than 3,000 square feet (279 m²), the code official may determine that the occupancy is Group B when life safety conditions can be demonstrated in accordance with Section 901.2. Adequate means of egress in such buildings, which may include a means of maintaining doors in an open position to permit egress, a limit on building occupancy to an occupant load permitted by the means of egress capacity, a limit on occupancy of certain areas or floors, or supervision by a person knowledgeable in the emergency exiting procedures, shall be provided.

2. Section 902 Flood hazard areas.

902.1 Flood hazard areas. In flood hazard areas, if all proposed work, including repairs, work required because of a change of occupancy, and alterations, constitutes substantial improvement, then the existing building shall comply with Section 1612 of the International Building Code or Section ~~R322~~ R306 of the International Residential Code, as applicable.

Exception: If a historic building will continue to be a historic building after the proposed work is completed, then the proposed work is not considered a substantial improvement. For the purposes of this exception, a historic building is:

1. Listed or preliminarily determined to be eligible for listing in the National Register of Historic Places;
2. Determined by the Secretary of the U.S. Department of Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined to qualify as an historic district; or
3. Designated as historic under a state or local historic preservation program that is approved by the Department of Interior.

3. Section 903 Repairs.

903.1 General. Repairs to any portion of a historic building or structure shall be permitted with original or like materials and original methods of construction, subject to the provisions of this chapter. Hazardous materials, such as asbestos and lead-based paint, shall not be used where the code for new construction would not permit their use in buildings of similar occupancy, purpose, and location.

903.2 Moved buildings. Foundations of moved historic buildings and structures shall comply with the VCC. Moved historic buildings shall otherwise be considered a historic ~~building~~ building for the purposes of this code. Moved historic buildings and structures shall be of this code.

903.3 Replacement. Replacement of existing or missing features using original materials shall be permitted. Partial replacement for repairs that match the original in configuration, height, and size shall be permitted. Replacement glazing in hazardous locations shall comply with the safety glazing requirements of Chapter 24 of the VCC.

Exception: Glass block walls, louvered windows, and jalousies repaired with like materials.

4. SECTION 904 (RESERVED).

5. Section 905 Alterations.

905.1 General. The provisions of Chapter 6, as applicable, shall apply to facilities designated as historic structures that undergo alterations, unless technically infeasible.

905.2 Exit signs and egress path markings. Where new exit signs or egress path markings would damage the historic character of the building or structure, alternative exit signs and egress path markings are permitted with approval of the code official. Alternative signs and egress path markings shall identify the exits and egress path.

6. Section 906 Change of Occupancy.

906.1 General. Historic buildings undergoing a change of occupancy shall comply with the applicable provisions of Chapter 7, except as specifically permitted in this chapter. When Chapter 7 requires compliance with specific requirements of Chapter 6 and when those requirements are subject to exceptions elsewhere in this code, the same exceptions shall apply to this section.

906.2 Building area. When a change of occupancy classification is made to a higher hazard category as indicated in Table 706.2, the allowable floor area for historic buildings undergoing a change of occupancy shall be permitted to exceed by 20% the allowable areas specified in Chapter 5 of the VCC.

906.3 Location on property. Historic structures undergoing a change of use to a higher hazard category in accordance with Section 707.1 may use alternative methods to comply with the fire-resistance and exterior opening protective requirements. Such alternatives shall comply with Section 901.2.

906.4 Occupancy separation. Required occupancy separations of one hour may be omitted when the building is provided with an approved automatic sprinkler system throughout.

906.5 Automatic fire-extinguishing systems. Every historical building or portion thereof that cannot be made to conform to the construction requirements specified in Chapter 7 or this chapter for the occupancy or use and such change constitutes a fire hazard shall be deemed to be in compliance if those spaces undergoing a change of occupancy are provided with an approved automatic fire-extinguishing system.

Exception: When the building official approves an alternative life-safety system.

906.6 Means of egress. Existing door openings and corridor and stairway widths less than those required elsewhere in this code shall be permitted, provided there is sufficient width and height for a

person to pass through the opening or traverse the exit and that the capacity of the exit system is adequate for the occupant load or where other operational controls to limit occupancy are approved by the code official.

906.7 Door swing. Existing front doors need not swing in the direction of exit travel, provided that other approved exits having sufficient capacity to serve the total occupant load are provided.

906.8 Transoms. In corridor walls required by Chapter 7 to be fire-resistance rated, existing transoms may be maintained if fixed in the closed position and fixed wired glass set in a steel frame or other approved glazing shall be installed on one side of the transom.

906.9 Interior finishes and trim materials. When a change of occupancy classification is made to a higher hazard category as indicated in Table 705.2, existing nonconforming interior finish and trim materials shall be permitted to be treated with an approved fire-retardant coating in accordance with the manufacturer's instructions to achieve the required fire rating.

Exception: Such nonconforming materials need not be treated with an approved fire-retardant coating where the building is equipped throughout with an automatic sprinkler system installed in accordance with the VCC and the nonconforming materials can be substantiated as being historic in character.

906.10 One-hour-fire-resistant assemblies. Where one-hour-fire-resistance-rated construction is required by this code, it need not be provided, regardless of construction or occupancy, where the existing wall and ceiling finish is wood lath and plaster.

906.11 Stairways, railings, and guards. Existing stairways, railings, and guards shall comply with the requirements of Section 705. The code official shall approve alternative stairways, railings, and guards if found to be acceptable or judged to meet the intent of Section 705.

Exception: For buildings less than 3,000 square feet (279 m²), existing conditions are permitted to remain at all stairways, railings, and guards.

906.12 Exit stair live load. When a change of occupancy classification is made to a higher hazard category as indicated in Table 706.2, existing stairways shall be permitted to remain where it can be shown that the stairway can support a 75-pounds-per-square-foot (366 kg/m²) live load.

7. Section 907 Structural.

907.1 General. Historic buildings shall comply with the applicable structural provisions for the work as classified in Section 103.9.

Exception: The code official shall be authorized to accept existing floors and approve operational controls that limit the live load on any such floor.

13VAC5-63-435. Chapter 10 Moved buildings and structures.

Replace Chapter 10 of the IEBC with the following:

1. Section 1001 General.

1001.1 Scope. This chapter provides requirements for moved buildings and structures.

1001.2 Conformance. Any repair, alteration, or change of occupancy undertaken within the moved building or structure shall comply with the requirements of this code applicable to the work being performed. Any field fabricated elements shall comply with the requirements of the VCC or the International Residential Code as applicable.

1001.3 Required inspection and repairs. The code official shall be authorized to inspect or to require approved professionals to inspect at the expense of the owner the various structural parts of a moved building or structure to verify that structural components and connections have not sustained structural damage. Any repairs required by the code official as a result of such inspection shall be made prior to the final approval.

2. Section 1002 Requirements.

1002.1 Location on the lot. The building or structure shall be located on the lot in accordance with the requirements of the VCC or the International Residential Code as applicable.

1002.2 Foundation. The foundation system of moved buildings and structures shall comply with the VCC or the International Residential Code as applicable.

1002.2.1 Connection to the foundation. The connection of the moved building or structure to the foundation shall comply with the VCC or the International Residential Code as applicable.

1002.3 Wind loads. Buildings and structures shall comply with VCC or International Residential Code wind provisions at the new location as applicable.

Exceptions:

1. Detached one-family and two-family dwellings and Group U occupancies where wind loads at the new location are not higher than those at the previous location.
2. Structural elements whose stress is not increased by more than 10%.

1002.4 Seismic loads. Buildings and structures shall comply with VCC or International Residential Code seismic provisions at the new location as applicable.

Exceptions:

1. Structures in Seismic Design Categories A and B and detached one-family and two-family dwellings in Seismic Design Categories A, B, and C where the seismic loads at the new location are not higher than those at the previous location.
2. Structural elements whose stress is not increased by more than 10%.

1002.5 Snow loads. Buildings and structures shall comply with VCC or International Residential Code snow loads as applicable where snow loads at the new location are higher than those at the previous location.

Exception: Structural elements whose stress is not increased by more than 5.0%.

1002.6 Flood hazard areas. If moved into a flood hazard area, buildings and structures shall comply with Section 1612 of the VCC or Section ~~R322~~ R306 of the International Residential Code, as applicable.

13VAC5-63-435.5. Chapter 11 Retrofit requirements.

Replace Chapter 11 of the IEBC with the following:

Section 1101 General:

1101.1 Scope. In accordance with Section 103.3, the following buildings are required to be provided with certain fire protection equipment or systems or other retrofitted components.

1101.2 Smoke alarms in colleges and universities. In accordance with § 36-99.3 of the Code of Virginia, college and university buildings containing dormitories for sleeping purposes shall be provided with battery-powered or AC-powered smoke alarm devices installed therein in accordance with this code in effect on July 1, 1982. All public and private college and university dormitories shall have installed such alarms regardless of when the building was constructed. The chief administrative office of the college or university shall obtain a certificate of compliance with the provisions of this subsection from the building official of the locality in which the college or university is located or, in the case of state-owned buildings, from the Director of the Virginia Department of General Services. The provisions of this section shall not apply to any dormitory at a state-supported military college or university that is patrolled 24 hours a day by military guards.

1101.3 Smoke alarms in certain juvenile care facilities. In accordance with § 36-99.4 of the Code of Virginia, battery-powered or AC-powered smoke alarms shall be installed in all local and regional detention homes, group homes, and other residential care facilities for children and juveniles that are operated by or under the auspices of the Virginia Department of Juvenile Justice, regardless of when the building was constructed, by July 1, 1986, in accordance with the provisions of this code that were in effect on July 1, 1984. Administrators of such homes and facilities shall be responsible for the installation of the smoke alarm devices.

1101.4 Smoke alarms for the deaf and hearing-impaired. In accordance with § 36-99.5 of the Code of Virginia, smoke alarms providing an effective intensity of not less than 100 candela to warn a deaf or hearing-impaired individual shall be provided, upon request by the occupant to the landlord or proprietor, to any deaf or hearing-impaired occupant of any of the following occupancies, regardless of when constructed:

1. All dormitory buildings arranged for the shelter and sleeping accommodations of more than 20 individuals;

2. All multiple-family dwellings having more than two dwelling units, including all dormitories and boarding and lodging houses arranged for shelter and sleeping accommodations of more than five individuals; or

3. All buildings arranged for use as one-family and two-family dwelling units.

A tenant shall be responsible for the maintenance and operation of the smoke alarm in the tenant's unit.

A hotel or motel shall have available no fewer than one such smoke alarm for each 70 units or portion thereof, except that this requirement shall not apply to any hotel or motel with fewer than 35 units. The proprietor of the hotel or motel shall post in a conspicuous place at the registration desk or counter a permanent sign stating the availability of smoke alarms for the hearing impaired. Visual alarms shall be provided for all meeting rooms for which an advance request has been made.

1101.5 Assisted living facilities (formerly known as adult care residences or homes for adults). In accordance with § 36-99.5 of the Code of Virginia, existing assisted living facilities licensed by the Virginia Department of Social Services shall comply with Sections 1101.5.1 and 1101.5.2.

1101.5.1 Fire protective signaling system and fire detection system. A fire protective signaling system and an automatic fire detection system meeting the requirements of the USBC, Volume I, 1987 Edition, Third Amendment, shall be installed in assisted living facilities by August 1, 1994.

Exception: Assisted living facilities that are equipped throughout with a fire protective signaling system and an automatic fire detection system.

1101.5.2 Single-station and multiple-station smoke alarms. Battery-powered or AC-powered single-station and multiple-station smoke alarms meeting the requirements of the USBC, Volume I, 1987 Edition, Third Amendment, shall be installed in assisted living facilities by August 1, 1994.

Exception: Assisted living facilities that are equipped throughout with single-station and multiple-station smoke alarms.

1101.6 Smoke alarms in buildings containing dwelling units. AC-powered smoke alarms with battery backup or an equivalent device shall be required to be installed to replace a defective or inoperative battery-powered smoke alarm located in buildings containing one or more dwelling units or rooming houses offering to rent overnight sleeping accommodations when it is determined by the building official that the responsible party of such building or dwelling unit fails to maintain battery-powered smoke alarms in working condition.

1101.7 Fire suppression, fire alarm, and fire detection systems in nursing homes and facilities. In accordance with § 36-99.5 of the Code of Virginia, fire suppression systems as required by the edition of this code in effect on October 1, 1990, shall be installed in all nursing facilities licensed by the Virginia Department of Health by January 1, 1993, regardless of when such facilities or institutions were constructed. Units consisting of certified long-term care beds located on the ground floor of general hospitals shall be exempt from the requirements of this section.

Fire alarm or fire detector systems or both, as required by the edition of this code in effect on October 1, 1990, shall be installed in all nursing homes and nursing facilities licensed by the Virginia Department of Health by August 1, 1994.

1101.8 Fire suppression systems in hospitals. In accordance with § 36-99.1 of the Code of Virginia, fire suppression systems shall be installed in all hospitals licensed by the Virginia Department of Health as required by the edition of this code in effect on October 1, 1995, regardless of when such facilities were constructed.

1101.9 Identification of disabled parking spaces by above grade signage. In accordance with § 36-99.11 of the Code of Virginia, all parking spaces reserved for the use of persons with disabilities shall be identified by above-grade signs, regardless of whether identification of such spaces by above-grade signs was required when any particular space was reserved for the use of persons with disabilities. A sign or symbol painted or otherwise displayed on the pavement of a parking space shall not constitute an above-grade sign. Any parking space not identified by an above-grade sign shall not be a parking space reserved for the disabled within the meaning of this section. All above-grade disabled parking space signs shall have the bottom edge of the sign no lower than four feet (1219 mm) nor higher than seven feet (2133 mm) above the parking surface. Such signs shall be designed and constructed in accordance with the provisions of Chapter 11 of this code. All disabled parking signs shall include the following language: "PENALTY, \$100-500 Fine, TOW-AWAY ZONE." Such language may be placed on a separate sign and attached below existing above-grade disabled parking signs, provided that the bottom edge of the attached sign is no lower than four feet above the parking surface.

1101.10 Smoke alarms in hotels and motels. Smoke alarms shall be installed in hotels and motels as required by the USBC, Volume II, (13VAC5-63-400 through 13VAC5-63-445) in effect on March 1, 1990, by the dates indicated, regardless of when constructed.

1101.11 Sprinkler systems in hotels and motels. By September 1, 1997, an automatic sprinkler system shall be installed in hotels and motels as required by the USBC, Volume II, (13VAC5-63-400 through 13VAC5-63-445) in effect on March 1, 1990, regardless of when constructed.

1101.12 Fire suppression systems in dormitories. In accordance with § 36-99.3 of the Code of Virginia, an automatic fire suppression system shall be provided throughout all buildings having a Group R-2 fire area that are more than 75 feet (22,860 mm) or six stories above the lowest level of exit discharge and are used, in whole or in part, as a dormitory to house students by any public or private institution of higher education, regardless of when such buildings were constructed, in accordance with the edition of this code in effect on August 20, 1997, and the requirements for sprinkler systems under the edition of the NFPA 13 standard referenced by that code. The automatic fire suppression system shall be installed by September 1, 1999. The chief administrative office of the college or university shall obtain a certificate of compliance from the building official of the locality in which the college or university is located or, in the case of state-owned buildings, from the Director of the Virginia Department of General Services.

Exceptions:

1. Buildings equipped with an automatic fire suppression system in accordance with Section 903.3.1.1 of the VCC or the 1983 or later editions of NFPA 13.
2. Any dormitory at a state-supported military college or university that is patrolled 24 hours a day by military guards.
3. Application of the requirements of this section shall be modified in accordance with the following:
 - 3.1. Building systems, equipment, or components other than the fire suppression system shall not be required to be added or upgraded except as necessary for the installation of the fire suppression system and shall only be required to be added or upgraded where the installation of the fire suppression system creates an unsafe condition.
 - 3.2. Residential sprinklers shall be used in all sleeping rooms. Other sprinklers shall be quick response or residential unless deemed unsuitable for a space. Standard response sprinklers shall be used in elevator hoistways and machine rooms.
 - 3.3. Sprinklers shall not be required in wardrobes in sleeping rooms that are considered part of the building construction or in closets in sleeping rooms when such wardrobes or closets (i) do not exceed 24 square feet (2.23 m²) in area, (ii) have the smallest dimension less than 36 inches (914 mm), and (iii) comply with all of the following:
 - 3.3.1. A single-station smoke alarm monitored by the building fire alarm system is installed in the room containing the wardrobe or closet that will activate the general alarm for the building if the single station smoke alarm is not cleared within five minutes after activation.
 - 3.3.2. The minimum number of sprinklers required for calculating the hydraulic demand of the system for the room shall be increased by two, and the two additional sprinklers shall be corridor sprinklers where the wardrobe or closet is used to divide the room. Rooms divided by a wardrobe or closet shall be considered one room for the purpose of this requirement.
 - 3.3.3. The ceiling of the wardrobe, closet, or room shall have a fire resistance rating of not less than 1/2 hour.
 - 3.4. Not more than one sprinkler shall be required in bathrooms within sleeping rooms or suites having a floor area between 55 square feet (5.12 m²) and 120

square feet (11.16 m²), provided the sprinkler is located to protect the lavatory area and the plumbing fixtures are of a noncombustible material.

3.5. Existing standpipe residual pressure shall be permitted to be reduced when the standpipe serves as the water supply for the fire suppression system, provided the water supply requirements of NFPA 13-94 are met.

3.6. Limited service controllers shall be permitted for fire pumps when used in accordance with their listing.

3.7. Where a standby power system is required, a source of power in accordance with Section 701-11(d) or 701-11(e) of NFPA 70-96 shall be permitted.

1101.13 Fire extinguishers and smoke alarms in state regulated care facilities (SRCFs). SRCFs shall be provided with at least one approved type ABC portable fire extinguisher with a minimum rating of 2A:10B:C installed in each kitchen. In addition, SRCFs shall provide at least one approved and properly installed battery-operated smoke alarm outside of each sleeping area in the vicinity of bedrooms and bedroom hallways and on each additional floor.

1101.14 Smoke alarms in adult day care centers. In accordance with § 36-99.5 of the Code of Virginia, battery-powered or AC-powered smoke alarm devices shall be installed in all adult day care centers licensed by the Virginia Department of Social Services, regardless of when the building was constructed. The location and installation of the smoke alarms shall be determined by the provisions of this code in effect on October 1, 1990. The licensee shall obtain a certificate of compliance from the building official of the locality in which the center is located or, in the case of state-owned buildings, from the Director of the Virginia Department of General Services.

1101.15 Posting of occupant load. Every room or space that is an assembly occupancy and where the occupant load of that room or space is 50 or more shall have the occupant load of the room or space as determined by the building official posted in a conspicuous place near the main exit or exit access doorway from the room or space. Posted signs shall be of an approved legible permanent design and shall be maintained by the owner or owner's authorized agent.

1101.16 ALFSTs. Existing aboveground liquid fertilizer storage tanks (ALFSTs), regardless of when constructed, shall by October 1, 2011, meet the applicable requirements of API 653 and TFI RMIP for suitability for service and inspections and shall provide a secondary containment system complying with Section 430.3 of the VCC.

1101.17 Address identification. Existing buildings shall be provided with approved address identification. The address identification shall be legible and placed in a position that is visible from the street or road fronting the property. Address identification characters shall contrast with their background. Address numbers shall be Arabic numbers or alphabetical letters. Numbers shall not be spelled out. Each character shall be a minimum of four inches (102 mm) high with a minimum stroke width of 1/2 inch (12.7 mm). Address identification shall be provided in additional approved locations

to facilitate emergency response. Where access is by means of private road and the building address cannot be viewed from the public way, a monument, pole, or other approved sign or means shall be used to identify the structure.

1101.18 Fire department connection sign. On existing buildings, wherever the fire department connection is not visible to approaching fire apparatus, the fire department connection shall be indicated by an approved sign mounted on the street front or on the side of the building. Such sign shall have the letters "FDC" not less than six inches (152 mm) high and words in letters not less than two inches (51 mm) high or an arrow to indicate the location. Such signs shall be maintained and subject to the approval of the fire code official.

13VAC5-63-438. Chapter 12 Construction safeguards.

Replace Chapter 12 of the IEBC with the following:

1. Section 1201 General.

1201.1 Scope. The provisions of this chapter shall govern safety during construction that is under the jurisdiction of this code and the protection of adjacent public and private properties.

1201.2 Storage and placement. Construction equipment and materials shall be stored and placed so as not to endanger the public, the workers, or adjoining property for the duration of the construction project.

1201.3 Alterations, repairs, and additions. Required exits, existing structural elements, fire protection devices, and sanitary safeguards shall be maintained at all times during alterations, repairs, or additions to any building or structure.

Exceptions:

1. When such required elements or devices are being altered or repaired, adequate substitute provisions shall be made.
2. When the existing building is not occupied.

1201.4 Manner of removal. Waste materials shall be removed in a manner that prevents injury or damage to persons, adjoining properties, and public rights-of-way.

1201.5 Fire safety during construction. Fire safety during construction shall comply with the applicable requirements of the International Building Code and the applicable provisions of Chapter 33 of the International Fire Code.

1201.6 Protection of pedestrians. Pedestrians shall be protected during construction and demolition activities as required by Sections 1201.6.1 through 1201.6.7 and Table 1201.6. Signs shall be provided to direct pedestrian traffic.

1201.6.1 Walkways. A walkway shall be provided for pedestrian travel in front of every construction and demolition site unless the applicable governing authority authorizes the sidewalk to be fenced or

closed. Walkways shall be of sufficient width to accommodate the pedestrian traffic, but in no case shall they be less than four feet (1219 mm) in width. Walkways shall be provided with a durable walking surface. Walkways shall be accessible in accordance with Chapter 11 of the International Building Code and shall be designed to support all imposed loads and in no case shall the design live load be less than 150 pounds per square foot (psf) (7.2 kN/m²).

1201.6.2 Directional barricades. Pedestrian traffic shall be protected by a directional barricade where the walkway extends into the street. The directional barricade shall be of sufficient size and construction to direct vehicular traffic away from the pedestrian path.

1201.6.3 Construction railings. Construction railings shall be at least 42 inches (1067 mm) in height and shall be sufficient to direct pedestrians around construction areas.

1201.6.4 Barriers. Barriers shall be a minimum of eight feet (2438 mm) in height and shall be placed on the side of the walkway nearest the construction. Barriers shall extend the entire length of the construction site. Openings in such barriers shall be protected by doors which are normally kept closed.

1201.6.4.1 Barrier design. Barriers shall be designed to resist loads required in Chapter 16 of the International Building Code unless constructed as follows:

1. Barriers shall be provided with two-inch by four-inch (51 mm by 102 mm) top and bottom plates.
2. The barrier material shall be a minimum of 3/4-inch (19.1 mm) boards or 1/4-inch (6.4 mm) wood structural use panels.
3. Wood structural use panels shall be bonded with an adhesive identical to that for exterior wood structural use panels.
4. Wood structural use panels 1/4-inch (6.4 mm) or 1/16-inch (1.6 mm) in thickness shall have studs spaced not more than two feet (610 mm) on center.
5. Wood structural use panels 3/8-inch (9.5 mm) or 1/2-inch (12.7 mm) in thickness shall have studs spaced not more than four feet (1219 mm) on center, provided a two-inch by four-inch (51 mm by 102 mm) stiffener is placed horizontally at the mid-height where the stud spacing exceeds two feet (610 mm) on center.
6. Wood structural use panels 5/8-inch (15.9 mm) or thicker shall not span over eight feet (2438 mm).

1201.6.5 Covered walkways. Covered walkways shall have a minimum clear height of eight feet (2438 mm) as measured from the floor surface to the canopy overhead. Adequate lighting shall be provided at all times. Covered walkways shall be designed to support all imposed loads. In no case shall the design live load be less than 150 psf (7.2 kN/m²) for the entire structure.

Exception: Roofs and supporting structures of covered walkways for new, light-frame construction not exceeding two stories above grade plane are permitted to be designed for a live load of 75 psf (3.6 kN/m²) or the loads imposed on them, whichever is greater. In lieu of such designs, the roof and supporting structure of a covered walkway are permitted to be constructed as follows:

1. Footings shall be continuous two-inch by six-inch members.
2. Posts not less than four inches by six inches shall be provided on both sides of the roof and spaced not more than 12 feet (3658 mm) on center.
3. Stringers not less than four inches by 12 inches shall be placed on edge upon the posts.
4. Joists resting on the stringers shall be at least two inches by eight inches and shall be spaced not more than two feet (610 mm) on center.
5. The deck shall be planks at least two inches (51 mm) thick or wood structural panels with an exterior exposure durability classification at least 23/32-inch (18.3 mm) thick nailed to the joists.
6. Each post shall be knee-braced to joists and stringers by two-inch by four-inch minimum members four feet (1219 mm) long.
7. A two-inch by four-inch minimum curb shall be set on edge along the outside edge of the deck.

1201.6.6 Repair, maintenance, and removal. Pedestrian protection required by Section 1201.6 shall be maintained in place and kept in good order for the entire length of time pedestrians may be endangered. The owner or the owner's agent, upon the completion of the construction activity, shall immediately remove walkways, debris, and other obstructions and leave such public property in as good a condition as it was before such work was commenced.

TABLE 1201.6 PROTECTION OF PEDESTRIANS		
HEIGHT OF CONSTRUCTION	DISTANCE OF CONSTRUCTION TO LOT LINE	TYPE OF PROTECTION REQUIRED
8 feet or less	Less than 5 feet	Construction railings
	5 feet or more	None

More than 8 feet	Less than 5 feet	Barrier and covered walkway
	5 feet or more, but not more than 1/4 the height of construction	Barrier and covered walkway
	5 feet or more, but between 1/4 and 1/2 the height of construction	Barrier
	5 feet or more, but exceeding 1/2 the height of construction	None

1201.6.7 Adjacent to excavations. Every excavation on a site located five feet (1524 mm) or less from the street lot line shall be enclosed with a barrier not less than six feet (1829 mm) high. Where located more than five feet (1524 mm) from the street lot line, a barrier shall be erected when required by the code official. Barriers shall be of adequate strength to resist wind pressure as specified in Chapter 16 of the International Building Code.

~~1201.8~~ 1201.7 Separations between construction areas. Separations used in Type I and Type II construction to separate construction areas from occupied portions of the building shall be constructed of materials that comply with one of the following:

1. Noncombustible materials.
2. Materials that exhibit a flame spread index not exceeding 25 when tested in accordance with ASTM E84 or UL 723.
3. Materials exhibiting a peak heat release rate not exceeding 300 kW/m² when tested in accordance with ASTM E1354 at an incident heat flux of 50 kW/m² in the horizontal orientation on specimens at the thickness intended for use.

2. Section 1202 Protection of Adjoining Properties.

1202.1 Protection required. Adjoining public and private property shall be protected from damage during construction and demolition work. Protection must be provided for footings, foundations, party walls, chimneys, skylights, and roofs. Provisions shall be made to control water runoff and erosion during construction or demolition activities. The person making or causing an excavation to be made shall provide written notice to the owners of adjoining buildings advising them that the excavation is to be made and that the adjoining buildings should be protected. This notification shall be delivered not less than 10 days prior to the scheduled starting date of the excavation.

3. Section 1203 Temporary Use of Streets, Alleys and Public Property.

1203.1 Storage and handling of materials. The temporary use of streets or public property for the storage or handling of materials or equipment required for construction or demolition and the protection provided to the public shall comply with the provisions of the applicable governing authority and this chapter.

1203.2 Obstructions. Construction materials and equipment shall not be placed or stored so as to interfere with access to fire hydrants, standpipes, fire or police alarm boxes, catch basins, or manholes nor shall such material or equipment be located within 20 feet (6.1 m) of a street intersection or placed so as to obstruct normal observations of traffic signals or to hinder the use of public transit loading platforms.

1203.3 Utility fixtures. Building materials, fences, sheds, or any obstruction of any kind shall not be placed to obstruct free approach to any fire hydrant, fire department connection, utility pole, manhole, fire alarm box, or catch basin or to interfere with the passage of water in the gutter. Protection against damage shall be provided to such utility fixtures during the progress of the work, but sight of them shall not be obstructed.

4. Section 1204 Fire Extinguishers.

1204.1 Where required. All structures under construction, alteration, or demolition shall be provided with not less than one approved portable fire extinguisher in accordance with Section 906 of the International Building Code and sized for not less than ordinary hazard as follows:

1. At each stairway on all floor levels where combustible materials have accumulated.
2. In every storage and construction shed.
3. Additional portable fire extinguishers shall be provided where special hazards exist including the storage and use of flammable and combustible liquids.

1204.2 Fire hazards. The provisions of this code and of the International Fire Code shall be strictly observed to safeguard against all fire hazards attendant upon construction operations.

5. Section 1205 Means of Egress.

1205.1 Stairways required. Where a building has been constructed to a building height of 50 feet (15,240 mm) or four stories or where an existing building exceeding 50 feet (15,240 mm) in building height is altered, at least one temporary lighted stairway shall be provided unless one or more of the permanent stairways are erected as the construction progresses.

1205.2 Maintenance of means of egress. Required means of egress shall be maintained at all times during construction, demolition, remodeling or alterations, and additions to any building.

Exception: Approved temporary means of egress systems and facilities.

6. Section 1206 Standpipe Systems.

1206.1 Where required. In buildings required to have standpipes by Section 905.3.1 of the International Building Code, not less than one standpipe shall be provided for use during construction. Such standpipes shall be installed prior to construction exceeding 40 feet (12,192 mm) in height above the lowest level of fire department vehicle access. Such standpipe shall be provided with fire department hose connections at accessible locations adjacent to usable stairways. Such standpipes shall be extended as construction progresses to within one floor of the highest point of construction having secured decking or flooring.

1206.2 Buildings being demolished. Where a building or portion of a building is being demolished and a standpipe exists within such a building, such standpipe shall be maintained in an operable condition so as to be available for use by the fire department. Such standpipe shall be demolished with the building but shall not be demolished more than one floor below the floor being demolished.

1206.3 Detailed requirements. Standpipes shall be installed in accordance with the provisions of Chapter 9 of the International Building Code.

Exception: Standpipes shall be either temporary or permanent in nature and with or without a water supply, provided that such standpipes conform to the requirements of Section 905 of the International Building Code as to capacity, outlets, and materials.

7. Section 1207 Automatic Sprinkler System.

1207.1 Completion before occupancy. In portions of a building where an automatic sprinkler system is required by this code, it shall be unlawful to occupy those portions of the building until the automatic sprinkler system installation has been tested and approved, except as provided in Section 116.1.1 of the VCC.

1207.2 Operation of valves. Operation of sprinkler control valves shall be permitted only by properly authorized personnel and shall be accompanied by notification of duly designated parties. When the sprinkler protection is being regularly turned off and on to facilitate connection of newly completed segments, the sprinkler control valves shall be checked at the end of each work period to ascertain that protection is in service.

8. Section 1208 Accessibility.

1208.1 Construction sites. Structures, sites, and equipment directly associated with the actual process of construction, including scaffolding, bridging, material hoists, material storage, or construction trailers, are not required to be accessible.

9. Section 1209 Water Supply for Fire Protection.

1209.1 When required. An approved water supply for fire protection, either temporary or permanent, shall be made available as soon as combustible material arrives on the site, on commencement of vertical combustible construction, and on installation of a standpipe system during alterations, repairs, or additions to any building or structure in accordance with the Virginia Statewide Fire Prevention Code.

10. Section 1210 Demolition.

1210.1 Construction documents. Construction documents and a schedule for demolition shall be submitted where required by the building official. Where such information is required, no work shall be done until such construction documents, schedule, or both are approved.

1210.2 Pedestrian protection. The work of demolishing any building shall not be commenced until pedestrian protection is in place as required by Chapter 33 of the VCC.

1210.3 Means of egress. A horizontal exit shall not be destroyed unless and until a substitute means of egress has been provided and approved.

1210.4 Vacant lot. Where a structure has been demolished or removed, the vacant lot shall be filled and maintained to the existing grade or in accordance with the ordinances of the jurisdiction having authority.

1210.5 Water accumulation. Provisions shall be made to prevent the accumulation of water or damage to any foundations on the premises or the adjoining property.

1210.6 Utility connections. Service utility connections shall be discontinued and capped in accordance with the approved rules and the requirements of the applicable governing authority.

1210.7 Fire safety during demolition. Fire safety during demolition shall comply with the applicable requirements of the VCC and the applicable provisions of Chapter 33 of the International Fire Code.

13VAC5-63-439. Chapter 13 Referenced standards.

Replace Chapter 13 of the IEBC with the following:

Referenced standards are listed in the following table:

Standard reference number	Title
ACI 562-21	Assessment, Repair, and Rehabilitation of Existing Concrete Structures
API 653-09	Tank Inspection, Repair, Alteration and Reconstruction
ASCE/SEI 7-16 <u>7-22</u>	<u>American Society of Civil Engineers Structural Engineering Institute Minimum Design Loads and Associated Criteria for Buildings and Other Structures</u>
ASCE/SEI 41-17	<u>American Society of Civil Engineers Structural Engineering Institute Seismic Evaluation and Retrofit of Existing Buildings</u>
ASHRAE 62.1 2016 <u>62.1-2022</u>	<u>American Society of Heating, Refrigerating and Air Conditioning Engineers Ventilation for Acceptable Indoor Air Quality</u>

~~ASHRAE 90.1-2016~~ <u>90.1-2022</u>	~~American Society of Heating, Refrigerating and Air Conditioning Engineers~~ <u>Energy Standard for Sites and Buildings Except Low-Rise Residential Buildings</u>
~~ASME A17.1/CSA B44-~~ <u>2016 B44-2022</u>	~~American Society of Mechanical Engineers~~ <u>Safety Code for Elevators and Escalators</u>
~~ASME A18.1-2014~~ <u>A18.1-2023</u>	~~American Society of Mechanical Engineers~~ <u>Safety Standard for Platform Lifts and Stairway Chairlifts</u>
~~ASTM E84-21a~~	<u>Standard Test Method for Surface Burning Characteristics of Building Materials</u>
~~ASTM E136-22~~	<u>Standard Test Method for Assessing Combustibility of Materials Using a Vertical Tube Furnace at 750 Degrees C</u>
~~ASTM E1354-17~~	<u>Standard Test Method for Heat and Visible Smoke Release Rates for Materials and Products Using an Oxygen Consumption Calorimeter</u>
~~ASTM F2006-17 F2006-~~ <u>21</u>	~~ASTM International~~ <u>Standard Safety Specification for Window Fall Prevention Devices for Non-Emergency Escape (Egress) and Rescue (Ingress) Windows</u>
~~ASTM F2090-17 F2090-~~ <u>21</u>	~~ASTM International~~ <u>Specification for Window Fall Prevention Devices with Emergency (Egress) Release Mechanisms</u>
~~IBC-21~~ <u>IBC-24</u>	International Building Code
~~ICC A117.1-17~~	Accessible and Usable Buildings and Facilities
~~IECC-21~~ <u>IECC-24</u>	International Energy Conservation Code
~~IFC-21~~ <u>IFC-24</u>	International Fire Code
~~IFGC-21~~ <u>IFGC-24</u>	International Fuel Gas Code
~~IMC-21~~ <u>IMC-24</u>	International Mechanical Code
~~IPC-21~~ <u>IPC-24</u>	International Plumbing Code
~~IRC-21~~ <u>IRC-24</u>	International Residential Code
~~NFPA 13-19~~ <u>13</u>	Standard for the Installation of Sprinkler Systems
~~NFPA 70-96~~	National Electrical Code
~~NFPA 70-20~~ <u>70-23</u>	National Electrical Code

<u>NFPA 99-18 NFPA 99-24</u>	Health Care Facilities Code
UL 217-15	Single and Multiple Station Smoke Alarms - with revisions through November 2016
<u>UL 723-18</u>	<u>Standard for Test for Surface Burning Characteristics of Building Materials</u>
<u>USBC, Volume I, 1987 Edition</u>	<u>Virginia Uniform Statewide Building Code</u>
TFI RMIP-09	Aboveground Storage Tanks Containing Liquid Fertilizer, Recommended Mechanical Integrity Practices

13VAC5-63-440. Chapter 14 Compliance alternative - Change of occupancy.

Replace Chapter 14 of the IEBC with the following:

Section 1401 General

1401.1 Scope. The provisions of this chapter are applicable when the exception to Section 701.1 is applied.

1401.2 Change of occupancy. The change of occupancy shall be evaluated in accordance with the evaluation process specified in Sections 1402 through 1404.

1401.2.1 Plumbing, mechanical, and electrical systems. Plumbing, mechanical, and electrical systems shall conform to the applicable requirements of Sections 708, 709, and 710.

1401.3 Work undertaken in connection with a change of occupancy. Any repairs, alterations, or additions undertaken in connection with a change of occupancy shall conform to the applicable requirements of this code for the work as classified in this code and as modified by this chapter.

Section 1402 Evaluation Process

1402.1 Evaluation process. The evaluation process specified in this section shall be followed in its entirety to evaluate existing buildings for work covered by this chapter. The existing building shall be evaluated in accordance with the provisions of this section and Sections 1403 and 1404. The evaluation shall be comprised of three categories as described in Sections 1402.1.1 through 1402.1.3.

1402.1.1 Fire safety. Included within the fire safety category are the structural fire resistance, automatic fire detection, fire alarm, automatic sprinkler system, and fire suppression system features of the facility.

1402.1.2 Means of egress. Included within the means of egress category are the configuration, characteristics, and support features for means of egress in the facility.

1402.1.3 General safety. Included within the general safety category are the fire safety parameters and the means-of-egress parameters.

1402.2 Occupancy basis. The evaluation of the building per this chapter shall be based on the new occupancy. A partial building change of occupancy shall be evaluated in accordance with Section 1402.2.1 or 1402.2.2 as applicable.

1402.2.1 Separated change of occupancy. Where a portion of the building undergoes a change of occupancy and that portion is separated from the remainder of the building in accordance with Section 508.4 of the VCC, only the portion of building undergoing the change of occupancy shall conform to the provisions of this chapter based on the new occupancy classification.

1402.2.2 Nonseparated change of occupancy. Where a portion of the building undergoes a change of occupancy and that portion is not separated from the remainder of the building in accordance with Section 508.4 of the VCC, the provisions of this chapter shall apply to the entire building based on all the occupancy classifications in the building.

1402.3 Structural evaluation. The existing building shall be evaluated to determine adequacy of the existing structural systems for the proposed change of occupancy. The evaluation shall demonstrate that the existing building with the work completed is capable of resisting the loads specified in Chapter 16 of the VCC.

1402.4 Submittal. The results of the evaluation as required in Section 1402.1 shall be submitted to the code official. Table 1404.1 shall be utilized for tabulating the results of the evaluation. References to other sections of this code indicate that compliance with those sections is required in order to gain credit in the evaluation outlined in this section.

Section 1403 Evaluation data

1403.1 Building height and number of stories. The value for building height and number of stories shall be the lesser value determined by the formula in Section 1403.1.1. Section 504 of the VCC shall be used to determine the allowable height and number of stories of the building. Subtract the actual building height from the allowable height and divide by 12-1/2 feet (3810 mm). Enter the height value and its sign (positive or negative) in Table 1404.1 under Safety Parameter 1403.1, Building Height, for fire safety, means of egress, and general safety. The maximum score for a building shall be 10.

1403.1.1 Height formula. The following formulas shall be used in computing the building height value:

$$\text{Height value, feet} = \frac{(AH) - (EBH)}{12.5} \times CF$$

(Equation 14-1)

Note: Where mixed occupancies are separated and individually evaluated as indicated in Section 1404.3.1, the values AH, AS, EBH, and EBS shall be based on the height of the occupancy being evaluated.

$$\text{Height value, stories} = (AS - EBS) \times CF$$

(Equation 14-2)

AH = Allowable height in feet (mm) from Section 504 of the VCC.

EBH = Existing building height in feet (mm).

AS = Allowable height in stories from Section 504 of the VCC.

EBS = Existing building height in stories. CF = 1 if (AH) - (EBH) is positive.

CF = Construction-type factor shown in Table 1403.6(2) if (AH) - (EBH) is negative.

1403.2 Building area. The value for building area shall be determined by the formula in Section 1403.2.2. Section 506 of the VCC and the formula in Section 1403.2.1 shall be used to determine the allowable area of the building. Subtract the actual building area from the allowable area and divide by 1,200 square feet (112 m²). Enter the area value and its sign (positive or negative) in Table 1404.1 under Safety Parameter 1403.2, Building Area, for fire safety, means of egress, and general safety. In determining the area value, the maximum permitted positive value for area is 50% of the fire safety score as listed in Table 1404.2, Mandatory Safety Scores.

1403.2.1 Allowable area formula. The following formula shall be used in computing allowable area:

$$A_a = A_t + (NS \times I_f)$$

(Equation 14-3)

where:

A_a = Allowable building area per story (square feet).

A_t = Tabular allowable area factor (NS, S1, S13R, or SM value, as applicable) in accordance with Table 506.2 of the VCC.

N_s = Tabular allowable area factor in accordance with Table 506.2 of the VCC for a nonsprinklered building (regardless of whether the building is sprinklered).

I_f = Area factor increase due to frontage as calculated in accordance with Section 506.3 of the VCC.

1403.2.2 Area formula. The following formula shall be used in computing the area value. Determine the area value for each occupancy floor area on a floor-by-floor basis. For each occupancy, choose the minimum area value of the set of values obtained for the particular occupancy.

(Equation 14-4)

where:

i = Value for an individual separated occupancy on a floor.

n = Number of separated occupancies on a floor.

1403.3 Compartmentation. Evaluate the compartments created by fire barriers or horizontal assemblies that comply with Sections 1403.3.1 and 1403.3.2 and which are exclusive of the wall elements considered under Sections 1403.4 and 1403.5. Conforming compartments shall be figured as the net area and do not include shafts, chases, stairways, walls, or columns. Using Table 1403.3, determine the appropriate compartmentation value (CV) and enter that value into Table 1404.1 under Safety Parameter 1403.3, Compartmentation, for fire safety, means of egress, and general safety. For compartment sizes that fall between categories, the determination of the CV shall be permitted to be obtained by linear interpolation.

TABLE 1403.3 COMPARTMENTATION VALUES					
OCCUPANCY	CATEGORIES				
	a Compartment size equal to or greater than 15,000 square feet	b Compartment size of 10,000 square feet	c Compartment size of 7,500 square feet	d Compartment size of 5,000 square feet	e Compartment size of 2,500 square feet or less
A-1, A-3	0	6	10	14	18
A-2	0	4	10	14	18
A-4, B, E, S-2	0	5	10	15	20
F, M, R, S-1	0	4	10	16	22
For SI: 1 square foot = 0.0929m ² .					

1403.3.1 Wall construction. A wall used to create separate compartments shall be a fire barrier conforming to Section 707 of the VCC with a fire-resistance rating of not less than two hours. Where

the building is not divided into more than one compartment, the compartment size shall be taken as the total floor area on all floors. Where there is more than one compartment within a story, each compartmented area on such story shall be provided with a horizontal exit conforming to Section 1026 of the VCC. The fire door serving as the horizontal exit between compartments shall be so installed, fitted, and gasketed that such fire door will provide a substantial barrier to the passage of smoke.

1403.3.2 Floor/ceiling construction. A floor/ceiling assembly used to create compartments shall conform to Section 711 of the VCC and shall have a fire-resistance rating of not less than two hours.

1403.4 Tenant and dwelling unit separations. Evaluate the fire-resistance rating of floors and walls separating tenants, including dwelling units, and not evaluated under Sections 1403.3 and 1403.5.

Table 1403.4 SEPARATION VALUES					
OCCUPANCY	CATEGORIES				
	a	b	c	d	e
A-1	0	0	0	0	1
A-2	-5	-3	0	1	3
R	-4	-2	0	2	4
A-3, A-4, B, E, F, M, S-1	-4	-3	0	2	4
S-2	-5	-2	0	2	4

1403.4.1 Categories. The categories for tenant and dwelling unit separations are:

1. Category a - No fire partitions; incomplete fire partitions; no doors; doors not self-closing or automatic-closing.
2. Category b - Fire partitions or floor assemblies with less than one-hour fire-resistance ratings or not constructed in accordance with Section 708 or 711 of the VCC, respectively.
3. Category c - Fire partitions with one-hour or greater fire-resistance ratings constructed in accordance with Section 708 of the VCC and floor assemblies with one-hour but less than two-hour fire-resistance ratings constructed in accordance with Section 711 of the VCC or with only one tenant within the floor area.
4. Category d - Fire barriers with one-hour but less than two-hour fire-resistance ratings constructed in accordance with Section 707 of the VCC and floor assemblies with two-hour or greater fire-resistance ratings constructed in accordance with Section 711 of the VCC.

5. Category e - Fire barriers and floor assemblies with two-hour or greater fire-resistance ratings and constructed in accordance with Sections 707 and 711 of the VCC, respectively.

1403.5 Corridor walls. Evaluate the fire-resistance rating and degree of completeness of walls that create corridors serving the floor and that are constructed in accordance with Section 1020 of the VCC. This evaluation shall not include the wall elements considered under Sections 1403.3 and 1403.4. Under the categories and groups in Table 1403.5, determine the appropriate value and enter that value into Table 1404.1 under Safety Parameter 1403.5, Corridor Walls, for fire safety, means of egress, and general safety.

Table 1403.5 CORRIDOR WALL VALUES				
OCCUPANCY	CATEGORIES			
	a	b	c ^a	d ^a
A-1	-10	-4	0	2
A-2	-30	-12	0	2
A-3, F, M, R, S-1	-7	-3	0	2
A-4, B, E, S-2	-5	-2	0	5
a. Corridors not providing at least one-half the exit access travel distance for all occupants on a floor shall use Category b.				

1403.5.1 Categories. The categories for corridor walls are:

1. Category a - No fire partitions; incomplete fire partitions; no doors; or doors not self-closing.
2. Category b - Less than one-hour fire-resistance rating or not constructed in accordance with Section 708.4 of the VCC.
3. Category c - one-hour to less than two-hour fire-resistance rating, with doors conforming to Section 716 of the VCC or without corridors as permitted by Section 1020 of the VCC.
4. Category d - two-hour or greater fire-resistance rating, with doors conforming to Section 716 of the VCC.

1403.6 Vertical openings. Evaluate the fire-resistance rating of interior exit stairways or ramps, hoistways, escalator openings, and other shaft enclosures within the building and openings between two or more floors.

Table 1403.6(1) contains the appropriate protection values. Multiply that value by the construction-type factor found in 1403.6(2). Enter the vertical opening value and its sign (positive or negative) in Table 1404.1 under Safety Parameter 1403.6, Vertical Openings, for fire safety, means of egress, and general safety. If the structure is a one-story building or if all the unenclosed vertical openings within the building conform to the requirements of Section 713 of the VCC, enter a value of two. The maximum positive value for this requirement shall be two.

Table 1403.6(1) VERTICAL OPENING PROTECTION VALUE	
PROTECTION	VALUE
None (unprotected opening)	-2 times number of floors connected
Less than 1 hour	-1 times number of floors connected
1 to less than 2 hours	1
2 hours or more	2

TABLE 1403.6(2) CONSTRUCTION-TYPE FACTOR									
FACTOR	TYPE OF CONSTRUCTION								
	IA	IB	IIA	IIB	IIIA	IIIB	IV	VA	VB
	1.2	1.5	2.2	3.5	2.5	3.5	2.3	3.3	7

1403.6.1 Vertical opening formula. The following formula shall be used in computing vertical opening value.

$$VO = PV \times CF$$

(Equation 14-5)

VO = Vertical opening value.

PV = Protection value from Table 1403.6(1).

CF = Construction-type factor from Table 1403.6(2).

1403.7 HVAC systems. Evaluate the ability of the HVAC system to resist the movement of smoke and fire beyond the point of origin. Under the categories in Section 1403.7.1, determine the appropriate value and enter that value into Table 1404.1 under Safety Parameter 1403.7, HVAC Systems, for fire safety, means of egress, and general safety.

1403.7.1 Categories. The categories for HVAC systems are:

1. Category a - Plenums not in accordance with Section 602 of the International Mechanical Code. - 10 points.
2. Category b - Air movement in egress elements not in accordance with Section 1020.6 of the VCC. - 5 points.
3. Category c - Both Categories a and b are applicable. - 15 points.
4. Category d - Compliance of the HVAC system with Section 1020.6 of the VCC and Section 602 of the International Mechanical Code. - 0 points.
5. Category e - Systems serving one story; or a central boiler/chiller system without ductwork connecting two or more stories. + 5 points.

1403.8 Automatic fire detection. Evaluate the smoke detection capability based on the location and operation of automatic fire detectors in accordance with Section 907 of the VCC and Section 606 of the International Mechanical Code. Under the categories and occupancies in Table 1403.8, determine the appropriate value and enter that value into Table 1404.1 under Safety Parameter 1403.8, Automatic Fire Detection, for fire safety, means of egress, and general safety.

Table 1403.8 AUTOMATIC FIRE DETECTION VALUES						
OCCUPANCY	CATEGORIES					
	a	b	c	d	e	f
A-1, A-3, F, M, R, S-1	-10	-5	0	2	6	-
A-2	-25	-5	0	5	9	-
A-4, B, E, S-2	-4	-2	0	4	8	-

1403.8.1 Categories. The categories for automatic fire detection are:

1. Category a - None.
2. Category b - Existing smoke detectors in HVAC systems.
3. Category c - Smoke detectors in HVAC systems. The detectors are installed in accordance with the requirements for new buildings in the International Mechanical Code.
4. Category d - Smoke detectors throughout all floor areas other than individual sleeping units, tenant spaces, and dwelling units.
5. Category e - Smoke detectors installed throughout the floor area.

6. Category f - Smoke detectors in corridors only.

1403.9 Fire alarm systems. Evaluate the capability of the fire alarm system in accordance with Section 907 of the VCC. Under the categories and occupancies in Table 1403.9, determine the appropriate value and enter that value into Table 1404.1 under Safety Parameter 1403.9, Fire Alarm System, for fire safety, means of egress, and general safety.

Table 1403.9 FIRE ALARM SYSTEM VALUES				
OCCUPANCY	CATEGORIES			
	a	b ^a	c	d
A-1, A-2, A-3, A-4, B, E, R	-10	-5	0	5
F, M, S	0	5	10	15
a. For buildings equipped throughout with an automatic sprinkler system, add two points for activation by a sprinkler water-flow device.				

1403.9.1 Categories. The categories for fire alarm systems are:

1. Category a - None.
2. Category b - Fire alarm system with manual fire alarm boxes in accordance with Section 907.4 of the VCC and alarm notification appliances in accordance with Section 907.5.2 of the VCC.
3. Category c - Fire alarm system in accordance with Section 907 of the VCC.
4. Category d - Category c plus a required emergency voice/alarm communications system and a fire command station that conforms to Section 911 of the VCC and contains the emergency voice/alarm communications system controls, fire department communication system controls, and any other controls specified in Section 911 of the VCC where those systems are provided.

1403.10 Smoke control. Evaluate the ability of a natural or mechanical venting, exhaust, or pressurization system to control the movement of smoke from a fire. Under the categories and occupancies in Table 1403.10, determine the appropriate value and enter that value into Table 1404.1 under Safety Parameter 1403.10, Smoke Control, for means of egress and general safety.

Table 1403.10 SMOKE CONTROL VALUES						
OCCUPANCY	CATEGORIES					
	a	b ^a	c	d	e	f

A-1, A-2, A-3	0	1	2	3	6	6
A-4, E	0	0	0	1	3	5
B, M, R	0	2a	3a	3a	3a	4a
F, S	0	2a	2s	3a	3a	3a
a. This value shall be zero if compliance with Category d or e in Section 1403.8.1 has not been obtained.						

1403.10.1 Categories. The categories for smoke control are:

1. Category a - None.
2. Category b - The building is equipped throughout with an automatic sprinkler system. Openings are provided in exterior walls at the rate of 20 square feet (1.86 m²) per 50 linear feet (15 240 mm) of exterior wall in each story and distributed around the building perimeter at intervals not exceeding 50 feet (15 240 mm). Such openings shall be readily openable from the inside without a key or separate tool and shall be provided with ready access thereto. In lieu of operable openings, clearly and permanently marked tempered glass panels shall be used.
3. Category c - One enclosed exit stairway, with ready access thereto, from each occupied floor of the building. The stairway has operable exterior windows, and the building has openings in accordance with Category b.
4. Category d - One smokeproof enclosure and the building has openings in accordance with Category b.
5. Category e - The building is equipped throughout with an automatic sprinkler system. Each floor area is provided with a mechanical ~~air handling~~ air handling system designed to accomplish smoke containment. Return and exhaust air shall be moved directly to the outside without recirculation to other floor areas of the building under fire conditions. The system shall exhaust not fewer than six air changes per hour from the floor area. Supply air by mechanical means to the floor area is not required. Containment of smoke shall be considered as confining smoke to the floor area involved without migration to other floor areas. Any other tested and approved design that will adequately accomplish smoke containment is permitted.
6. Category f - Each stairway shall be one of the following: a smokeproof enclosure in accordance with Section 1023.12 of the VCC, pressurized in accordance with Section 909.20.5 of the VCC, or shall have operable exterior windows.

1403.11 Means of egress capacity and number. Evaluate the means of egress capacity and the number of exits available to the building occupants. In applying this section, the means of egress are required to conform to the following sections of the VCC: 1003.7, 1004, 1005, 1006, 1007, 1016.2, 1026.1, 1028.3, 1028.5, 1030.2, 1030.3, 1030.4, and 1031. The number of exits credited is the

number that is available to each occupant of the area being evaluated. Existing fire escapes shall be accepted as a component in the means of egress when conforming to Section 303.

Under the categories and occupancies in Table 1403.11, determine the appropriate value and enter that value into Table 1404.1 under Safety Parameter 1403.11, Means of Egress Capacity, for means of egress and general safety.

Table 1403.11 MEANS OF EGRESS VALUES					
OCCUPANCY	CATEGORIES				
	a ^a	b	c	d	e
A-1, A-2, A-3, A-4, E	-10	0	2	8	10
M	-3	0	1	2	4
B, F, S	-1	0	0	0	0
R	-3	0	0	0	0
a. The values indicated are for buildings six stories or less in height. For buildings over six stories above grade plane, add an additional -10 points.					

1403.11.1 Categories. The categories for means-of-egress capacity and number of exits are:

1. Category a - Compliance with the minimum required means-of-egress capacity or number of exits is achieved through the use of a fire escape in accordance with Section 303.
2. Category b - Capacity of the means of egress complies with Section 1005 of the VCC, and the number of exits complies with the minimum number required by Section 1006 of the VCC.
3. Category c - Capacity of the means of egress is equal to or exceeds 125% of the required means-of-egress capacity, the means of egress complies with the minimum required width dimensions specified in the VCC, and the number of exits complies with the minimum number required by Section 1006 of the VCC.
4. Category d - The number of exits provided exceeds the number of exits required by Section 1006 of the VCC. Exits shall be located a distance apart from each other equal to not less than that specified in Section 1007 of the VCC.
5. Category e - The area being evaluated meets both Categories c and d.

1403.12 Dead ends. In spaces required to be served by more than one means of egress, evaluate the length of the exit access travel path in which the building occupants are confined to a single path of travel. Under the categories and occupancies in Table 1403.12, determine the appropriate value and

enter that value into 1404.1 under Safety Parameter 1403.12, Dead Ends, for means of egress and general safety.

Table 1403.12 DEAD-END VALUES				
OCCUPANCY	CATEGORIES ^a			
	a ^a	b	c	d
A-1, A-3, A-4, B, F, M, R, S	-2	0	2	-4
A-2, E	-2	0	2	-4
a. For dead-end distances between categories, the dead-end value shall be obtained by linear interpolation.				

1403.12.1 Categories. The categories for dead ends are:

1. Category a - Dead end of 35 feet (10 670 mm) in nonsprinklered buildings or 70 feet (21 340 mm) in sprinklered buildings.
2. Category b - Dead end of 20 feet (6096 mm) or 50 feet (15 240 mm) in Group B in accordance with Section 1020.5, Exception 2, of the VCC.
3. Category c - No dead ends or ratio of length to width (l/w) is less than ~~2.5:1.4~~ 2.5:1.
4. Category d - Dead ends exceeding Category a.

1403.13 Maximum exit access travel distance to an exit. Evaluate the length of exit access travel to an approved exit. Determine the appropriate points in accordance with the following equation and enter that value into Table 1404.1 under Safety Parameter 1403.13, Maximum Exit Access Travel Distance for means of egress and general safety. The maximum allowable exit access travel distance shall be determined in accordance with Section 1017.1 of the VCC.

$$L = \frac{W}{2.5} \quad \text{(Equation 14-6)}$$

1403.14 Elevator control. Evaluate the passenger elevator equipment and controls that are available to the fire department to reach all occupied floors. Emergency recall and in-car operation of elevators shall be provided in accordance with the building code under which the building or the affected portion thereof was constructed or previously approved. Under the categories and occupancies in Table 1403.14, determine the appropriate value and enter that value into Table 1404.1 under Safety Parameter 1403.14, Elevator Control, for fire safety, means of egress and general safety. The values shall be zero for a single-story building.

Table 1403.14 ELEVATOR CONTROL VALUES				
ELEVATOR TRAVEL	CATEGORIES			
	a	b	c	d
Less than 25 feet of travel above or below the primary level of elevator access for emergency fire-fighting or rescue personnel	-2	0	0	2
Travel of 25 feet or more above or below the primary level of elevator access for emergency fire-fighting or rescue personnel	-4	NP	0	4
For SI: 1 foot = 304.8 mm. NP = Not permitted.				

1403.14.1 Categories. The categories for elevator controls are:

1. Category a - No elevator.
2. Category b - Any elevator without Phase I emergency recall operation and Phase II emergency in-car operation.
3. Category c - All elevators with Phase I emergency recall operation and Phase II emergency in-car operation as required by the building code under which the building or the affected portion thereof was constructed or previously approved.
4. Category d - All meet Category c or Category b where permitted to be without Phase I emergency recall operation and Phase II emergency in-car operation, and at least one elevator that complies with new construction requirements serves all occupied floors.

1403.15 Means-of-egress emergency lighting. Evaluate the presence of and reliability of means-of-egress emergency lighting. Under the categories and occupancies in Table 1403.15, determine the appropriate value and enter that value into Table 1404.1 under Safety Parameter 1403.15, Means-of-Egress Emergency Lighting, for means of egress and general safety.

Table 1403.15 MEANS-OF-EGRESS EMERGENCY LIGHTING VALUES			
NUMBER OF EXITS REQUIRED BY SECTION 1006 OF THE INTERNATIONAL BUILDING CODE	CATEGORIES		
	a	b	c
Two or more exits	NP	0	4
Minimum of one exit	0	1	1

NP= Not permitted

1403.15.1 Categories. The categories for means-of-egress emergency lighting are:

1. Category a - Means-of-egress lighting and exit signs not provided with emergency power in accordance with Section 2702 of the VCC.
2. Category b - Means-of-egress lighting and exit signs provided with emergency power in accordance with Section 2702 of the VCC.
3. Category c - Emergency power provided to means-of-egress lighting and exit signs, which provides protection in the event of power failure to the site or building.

1403.16 Mixed occupancies. Where a building has two or more occupancies that are not in the same occupancy classification, the separation between the mixed occupancies shall be evaluated in accordance with this section. Where there is no separation between the mixed occupancies or the separation between mixed occupancies does not qualify for any of the categories indicated in Section 1403.16.1, the building shall be evaluated as indicated in Section 1404.3.1, and the value for mixed occupancies shall be zero. Under the categories and occupancies in Table 1403.16, determine the appropriate value and enter that value into Table 1404.1 under Safety Parameter 1403.16, Mixed Occupancies, for fire safety and general safety. For buildings without mixed occupancies, the value shall be zero.

Table 1403.16 MIXED OCCUPANCY VALUES ^a			
OCCUPANCY	CATEGORIES		
	a	b	c
A-1, A-2, R	-10	0	10
A-3, A-4, B, E, F, M, S	-5	0	5
a. For fire-resistance ratings between categories, the value shall be obtained by linear interpolation.			

1403.16.1 Categories. The categories for mixed occupancies are:

1. Category a - Occupancies separated by minimum one-hour fire barriers, minimum one-hour horizontal assemblies, or both.
2. Category b - Separations between occupancies in accordance with Section 508.4 of the VCC.
3. Category c - Separations between occupancies having a fire-resistance rating of not less than twice that required by Section 508.4 of the VCC.

1403.17 Automatic sprinklers. Evaluate the ability to suppress a fire based on the installation of an automatic sprinkler system in accordance with Section 903.3.1.1 of the VCC. "Required sprinklers" shall be based on the requirements of this code. Under the categories and occupancies in Table 1403.17, determine the appropriate value and enter that value into Table 1404.1 under Safety Parameter 1403.17, Automatic Sprinklers, for fire safety, means of egress divided by two, and general safety. High-rise buildings defined in Chapter 2 of the VCC that undergo a change of occupancy to Group R shall be equipped throughout with an automatic sprinkler system in accordance with Section 403 of the VCC and Chapter 9 of the VCC.

Table 1403.17 SPRINKLER SYSTEM VALUES						
OCCUPANCY	CATEGORIES					
	a ^a	b ^a	c	d	e	f
A-1, A-3, F, M, R, S-1	-6	-3	0	2	4	6
A-2	-4	-2	0	1	2	4
A-4, B, E, S-2	-12	-6	0	3	6	12
a. These options cannot be taken if Category a in Section 1403.18 is used.						

1403.17.1 Categories. The categories for automatic sprinkler system protection are:

1. Category a - Sprinklers are required throughout; sprinkler protection is not provided or the sprinkler system design is not adequate for the hazard protected in accordance with Section 903 of the VCC.
2. Category b - Sprinklers are required in a portion of the building; sprinkler protection is not provided or the sprinkler system design is not adequate for the hazard protected in accordance with Section 903 of the VCC.
3. Category c - Sprinklers are not required; none are provided.
4. Category d - Sprinklers are required in a portion of the building; sprinklers are provided in such portion; the system is one that complied with the code at the time of installation and is maintained and supervised in accordance with Section 903 of the VCC.
5. Category e - Sprinklers are required throughout; sprinklers are provided throughout in accordance with Chapter 9 of the VCC.
6. Category f - Sprinklers are not required throughout; sprinklers are provided throughout in accordance with Chapter 9 of the VCC.

1403.18 Standpipes. Evaluate the ability to initiate attack on a fire by making a supply of water available readily through the installation of standpipes in accordance with Section 905 of the VCC. "Required Standpipes" shall be based on the requirements of the VCC. Under the categories and occupancies in Table 1403.18, determine the appropriate value and enter that value into Table 1404.1 under Safety Parameter 1403.18, Standpipes, for fire safety, means of egress, and general safety.

Table 1403.18 STANDPIPE SYSTEM VALUES				
OCCUPANCY	CATEGORIES			
	a ^a	b	c	d
A-1, A-3, F, M, R, S-1	-6	0	4	6
A-2	-4	0	2	4
A-4, B, E, S-2	-12	0	6	12
a. This option cannot be taken if Category a or Category b in Section 1403.17 is used.				

1403.18.1 Standpipe categories. The categories for standpipe systems are:

1. Category a - Standpipes are required; standpipe is not provided or the standpipe system design is not in compliance with Section 905.3 of the VCC.
2. Category b - Standpipes are not required; none are provided.
3. Category c - Standpipes are required; standpipes are provided in accordance with Section 905 of the VCC.
4. Category d - Standpipes are not required; standpipes are provided in accordance with Section 905 of the VCC.

1403.19 Incidental uses. Evaluate the protection of incidental uses in accordance with Section 509.4.2 of the VCC. Do not include those where this code requires automatic sprinkler systems throughout the building, including covered and open mall buildings, high-rise buildings, public garages, and unlimited-area buildings. Assign the lowest score from Table 1403.19 for the building or floor area being evaluated and enter that value into Table 1404.1 under Safety Parameter 1403.19, Incidental Uses, for fire safety, means of egress and general safety. If there are no specific occupancy areas in the building or floor area being evaluated, the value shall be zero.

Table 1403.19 INCIDENTAL USE AREA VALUES

PROTECTION REQUIRED BY TABLE 509 OF THE VCC	PROTECTION PROVIDED						
	None	1 hour	AS	AS with CRS	1 hour and AS	2 hours	2 hours and AS
2 hours and AS	-4	-3	-2	-2	-1	-2	0
2 hours, or 1 hour and AS	-3	-2	-1	-1	0	0	0
1 hour and AS	-3	-2	-1	-1	0	-1	0
1 hour	-1	0	-1	-1	0	0	0
1 hour, or AS with CRS	-1	0	-1	-1	0	0	0
AS with CRS	-1	-1	-1	-1	0	-1	0
1 hour or AS	-1	0	0	0	0	0	0
AS = Automatic sprinkler system; CRS - Construction capable of resisting the passage of smoke (see Section 509.4.2 of the VCC).							

Section 1404 Evaluation Scores

1404.1 Building Score. After determining the appropriate data from Section 1403, enter those data in Table 1404.1 and total the building score.

Existing occupancy _____		Proposed Occupancy _____	
Year building was constructed _____		Number of stories _____ Height in feet _____	
Type of construction _____		Area per floor _____	
Percentage of open perimeter increase _____ %			
Completely suppressed:	Yes _____	No _____	Corridor wall rating _____

		Type: _____	
Fire-resistance rating of vertical opening enclosures _____			
Type of HVAC system _____, serving number of floors _____			
Automatic fire detection:	Yes _____	No _____	Type and Location: _____
Fire alarm system:	Yes _____	No _____	Type: _____
Smoke control:	Yes _____	No _____	Type: _____
Adequate exit routes:	Yes _____	No _____	Dead ends: Yes _____ No _____
Maximum exist access travel distance _____			Elevator controls: Yes _____ No _____
Means of egress emergency lighting:	Yes _____	No _____	Mixed occupancies: Yes _____ No _____
Standpipes	Yes _____	No _____	~~Patient ability for self preservation~~ _____
Incidental use	Yes _____	No _____	~~Patient concentration~~ _____
~~Smoke compartmentation less than 22,500 sq. feet (2092 m²)~~	~~Yes _____~~	~~No _____~~	~~Attendant-to-patient ratio~~ _____
SAFETY PARAMETERS	FIRE SAFETY (FS)	MEANS OF EGRESS (ME)	GENERAL SAFETY (GS)
1403.1 Building Height			
1403.2 Building Area			

1403.3 Compartmentation			
1403.4 Tenant and Dwelling Unit Separations			
1403.5 Corridor Walls			
1403.6 Vertical Openings			
1403.7 HVAC Systems			
1403.8 Automatic Fire Detection			
1403.9 Fire Alarm System			
1403.10 Smoke Control	****		
1403.11 Means of Egress	****		
1403.12 Dead Ends	****		
1403.13 Maximum Exit Access Travel Distance	****		
1403.14 Elevator Control			
1403.15 Means of Egress Emergency Lighting	****		
1403.16 Mixed Occupancies		****	
1403.17 Automatic Sprinklers		÷ 2 =	
1403.18 Standpipes			
1403.19 Incidental Use			
Building score - total value			
****No applicable value to be inserted.			

1404.2 Safety scores. The values in Table 1404.2 are the required mandatory safety scores for the evaluation process listed in Section 1403.

TABLE 1404.2 MANDATORY SAFETY SCORES ^a			
OCCUPANCY	FIRE SAFETY (MFS)	MEANS OF EGRESS (MME)	GENERAL SAFETY (MGS)
A-1	20	31	31
A-2	21	32	32
A-3	22	33	33
A-4, E	29	40	40
B	30	40	40
F	24	34	34
M	23	40	40
R	21	38	38
S-1	19	29	29
S-2	29	39	39
a. MFS = Mandatory Fire Safety, MME = Mandatory Means of Egress, MGS = Mandatory General Safety			

1404.3 Final scores. The mandatory safety score in Table 1404.2 shall be subtracted from the building score in Table 1404.1 for each category. Where the final score for any category equals zero or more, the building is in compliance with the requirements of this section for that category. Where the final score for any category is less than zero, the building is not in compliance with the requirements of this section.

1404.3.1 Mixed occupancies. For mixed occupancies, the following provisions shall apply:

1. Where the separation between mixed occupancies does not qualify for any category indicated in Section 1403.16, the mandatory safety scores for the occupancy with the lowest general safety score in Table 1404.2 shall be utilized. (See Section 1404.3.1).
2. Where the separation between mixed occupancies qualifies for any category indicated in Section 1403.16, the mandatory safety scores for each occupancy shall be placed against the evaluation scores for the appropriate occupancy.

TABLE 1404.3 FINAL SCORES ^a						
FORMULA	T1404.1	T1404.2		SCORE	PASS	FAIL
FS - MFS $\geq$ 0	_____ (FS) -	_____ (MFS)	=	_____	_____	_____
ME - MME $\geq$ 0	_____ (ME) -	_____ (MME)	=	_____	_____	_____
GS - MGS $\geq$ 0	_____ (GS) -	_____ (MGS)	=	_____	_____	_____
a. FS = Fire Safety MFS = Mandatory Fire Safety. ME = Means of Egress. MME = Mandatory Means of Egress. GS = General Safety. MGS = Mandatory General Safety.						

13VAC5-63-441. Chapter 15 Construction safeguards.

Delete Chapter 15 of the IEBC in its entirety.

13VAC5-63-443. Chapter 16 Referenced standards.

Delete Chapter 16 of the IEBC in its entirety.

13VAC5-63-444. Appendix B Supplementary accessibility requirements for existing buildings and facilities.

A. Change ~~Sections Section B101.3 and B101.4~~ of the IEBC to read: by replacing the reference to "Section 306.7.16" with a reference to "Section 405".

~~B101.3 Qualified historic buildings and facilities subject to Section 106 of the National Historic Preservation Act. Where an alteration or change of occupancy is undertaken to a qualified historic building or facility that is subject to Section 106 of the National Historic Preservation Act, the federal agency with jurisdiction over the undertaking shall follow the Section 106 process. Where the state historic preservation officer or Advisory Council on Historic Preservation determines that compliance with the requirements for accessible routes, ramps, entrances, or toilet facilities would threaten or~~

~~destroy the historic significance of the building or facility, the alternative requirements of Section 405 for that element are permitted.~~

~~B101.4. Qualified historic buildings and facilities not subject to Section 106 of the National Historic Preservation Act. Where an alteration or change of occupancy is undertaken to a qualified historic building or facility that is not subject to Section 106 of the National Historic Preservation Act, and the entity undertaking the alterations believes that compliance with the requirements for accessible routes, ramps, entrances, or toilet facilities would threaten or destroy the historic significance of the building or facility, the entity shall consult with the state historic preservation officer. Where the state historic preservation officer determines that compliance with the accessibility requirements for accessible routes, ramps, entrances, or toilet facilities would threaten or destroy the historical significance of the building or facility, the alternative requirements of Section 405 for the element are permitted.~~

~~B. Change Section B101.4 of the IEBC by replacing the reference to "Section 306.7.18" with a reference to "Section 405".~~

~~C. Change the first sentence in Section B101.5 of the IEBC to read: by replacing the reference to "Section 306.7.16" with a reference to "Section 405".~~

~~B101.5 Displays. In qualified historic buildings and facilities where alternative requirements of Section 405 are permitted, displays and written information shall be located where they can be seen by a seated person.~~

~~C. D. Change the first sentence in Section 102.2.3 of the IEBC to read: by replacing the reference to "Section 306.7.1" with a reference to "Section 404.3".~~

~~B102.2.3 Direct connections. New direct connections to commercial, retail, or residential facilities shall, to the maximum extent feasible, have an accessible route complying with Section 404.3 from the point of connection to boarding platforms and transportation system elements used by the public.~~

13VAC5-63-445. (Repealed.)

USBC Part III

Maintenance

5/28/2025

Summary – This document is compiled by staff of the State Building Codes Office of the Division of Building and Fire Regulation. Its purpose is to convert the 2021 VPMC to the 2024 VPMC by comparing the language in the 2021 VPMC to the 2024 edition of the International Property Maintenance Code (IPMC) which has amendments in the VPMC. It is not intended to create substantive changes to the 2021 VPMC. The base document is simply to make those necessary changes to the 2021 VPMC to bring in the 2024 International Property Maintenance Code (IPMC) and standards and keep the existing state amendments. If the 2024 IPMC includes construction related provisions that conflict with the USBC, that language is removed or amended. If the 2024 IPMC includes language that is consistent with an existing state amendment, then the existing state amendment is no longer needed and is deleted. The staff document is intended to serve as the basis for the publishing of proposed regulations for the 2024 IPMC. Once the base document is approved by the Board of Housing and Community Development, if any code change proposals are considered and approved by the Board of Housing and Community Development to also go into the proposed regulations for the 2024 IPMC, those proposals would be correlated with this base document and brought back to the Board of Housing and Community Development as a separate “proposed regulations” document for review.

Updated: 10/28/2025

The following revisions were made to this document on 10/28/2025:

- The “Summary” above was added
- Added **13VAC5-63-460. Section 102 Purpose and scope.**
- Added "Section" to C, D, and E in **13VAC5-63-470. Section 103 Application of code.**
- Added "Section" to U in **13VAC5-63-480. Section 104 Enforcement, generally.**
- Added letter numbering and "Section" in **13VAC5-63-485. Section 105 Violations.**
- Added “Section 308.2 Disposal of Rubbish” and renumbered in Item A in **13VAC5-63-520. Chapter 3 General requirements.**
- Clarifying language was added to Number 16 in Item B in **13VAC5-63-520. Chapter 3 General requirements.**
- Added “Section” to Number 13 in Item B in **13VAC5-63-540. Chapter 6 Mechanical and electrical requirements.**
- Changed temperature unit from Fahrenheit to Celsius in Section 602.4 Cooling supply in **13VAC5-63-540. Chapter 6 Mechanical and electrical requirements.**

- Section 607.2 was moved from Number 13 in Item C to Number 19 in Item B in **13VAC5-63-540. Chapter 6 Mechanical and electrical requirements.**
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13VAC5-63-450. Chapter 1 Administration; Section 101 General.

A. Section 101.1 Short title. The Virginia Uniform Statewide Building Code, Part III, the Virginia Maintenance Code, may be cited as the "Virginia Property Maintenance Code," or the short title of "VPMC."

B. Section 101.2 Incorporation by reference. Chapters 2 through 8 of the ~~2021~~ 2024 International Property Maintenance Code, published by the International Code Council, Inc., are adopted and incorporated by reference to be an enforceable part of the VPMC. The term "IPMC" means the ~~2021~~ 2024 International Property Maintenance Code, published by the International Code Council, Inc. Any codes and standards referenced in the IPMC are also considered to be part of the incorporation by reference, except that such codes and standards are used only to the prescribed extent of each such reference.

C. Section 101.3 Numbering system. A dual numbering system is used in the VPMC to correlate the numbering system of the Virginia Administrative Code with the numbering system of the IPMC. IPMC numbering system designations are provided in the catchlines of the Virginia Administrative Code ~~sections and cross~~ section. Cross references between sections or chapters of the Virginia Maintenance Code use only the IPMC numbering system designations. The term "chapter" is used in the context of the numbering system of the IPMC and may mean a chapter in the VPMC, a chapter in the IPMC, or a chapter in a referenced code or standard, depending on the context of the use of the term. The term "chapter" is not used to designate a chapter of the Virginia Administrative Code, unless clearly indicated.

D. Section 101.4 Arrangement of code provisions. The VPMC is comprised of the combination of (i) the provisions of Chapter 1, Administration, which are established herein, (ii) Chapters 2 through 8 of the IPMC, which are incorporated by reference in Section 101.2, and (iii) the changes to the text of the incorporated chapters of the IPMC which are specifically identified. The terminology "changes to the text of the incorporated chapters of the IPMC which are specifically identified" shall also be referred to as the "state amendments to the IPMC." Such state amendments to the IPMC are set out using corresponding chapter and section numbers of the IPMC numbering system.

E. Section 101.5 Use of terminology and notes. The term "this code," or "the code," where used in the provisions of Chapter 1, in Chapters 2 through 8 of the IPMC, or in the state amendments to the IPMC, means the VPMC, unless the context clearly indicates otherwise. The term "this code," or "the code," where used in a code or standard referenced in the IPMC, means that code or standard, unless the context clearly indicates otherwise. The term "USBC" where used in this code means the VCC unless the context clearly indicates otherwise. In addition, the use of notes in Chapter 1 is to provide information only and shall not be construed as changing the meaning of any code provision. Notes in the IPMC, in the codes and standards referenced in the IPMC, and in the state amendments to the IPMC may modify

the content of a related provision and shall be considered to be a valid part of the provision, unless the context clearly indicates otherwise.

F. Section 101.6 Order of precedence. The provisions of this code shall be used as follows:

1. The provisions of Chapter 1 of this code supersede any provisions of Chapters 2 through 8 of the IPMC that address the same subject matter and impose differing requirements.
2. The provisions of Chapter 1 of this code supersede any provisions of the codes and standards referenced in the IPMC that address the same subject matter and impose differing requirements.
3. The state amendments to the IPMC supersede any provisions of Chapters 2 through 8 of the IPMC that address the same subject matter and impose differing requirements.
4. The state amendments to the IPMC supersede any provisions of the codes and standards referenced in the IPMC that address the same subject matter and impose differing requirements.
5. The provisions of Chapters 2 through 8 of the IPMC supersede any provisions of the codes and standards referenced in the IPMC that address the same subject matter and impose differing requirements.

G. Section 101.7 Definitions. The definitions of terms used in this code are contained in Chapter 2 along with specific provisions addressing the use of definitions. Terms may be defined in other chapters or provisions of the code and such definitions are also valid.

13VAC5-63-460. Section 102 Purpose and scope.

A. Section 102.1 Purpose. In accordance with § 36-103 of the Code of Virginia, the Virginia Board of Housing and Community Development may adopt and promulgate as part of the Virginia Uniform Statewide Building Code, building regulations that facilitate the maintenance, rehabilitation, development and reuse of existing buildings at the least possible cost to ensure the protection of the public health, safety and welfare. Further, in accordance with § 36-99 of the Code of Virginia, the purpose of this code is to protect the health, safety and welfare of the residents of the Commonwealth of Virginia, provided that buildings and structures should be permitted to be maintained at the least possible cost consistent with recognized standards of health, safety, energy conservation and water conservation, including provisions necessary to prevent overcrowding, rodent or insect infestation, and garbage accumulation; and barrier-free provisions for the physically handicapped and aged.

B. Section 102.2 Scope. In accordance with § 36-98 of the Code of Virginia, the VMC shall supersede the building codes and regulations of the counties, municipalities and other political subdivisions and state agencies.

C. Section 102.3 Exemptions. This code shall not regulate those buildings and structures specifically exempt from the VCC, except that existing industrialized buildings and manufactured homes shall not be exempt from this code.

13VAC5-63-470. Section 103 Application of code.

A. Section 103.1 General. This code prescribes regulations for the maintenance of all existing buildings and structures and associated equipment, including regulations for unsafe buildings and structures.

B. Section 103.2 Maintenance requirements. Buildings, structures, and systems shall be maintained and kept in good repair in accordance with the requirements of this code and when applicable in accordance with the USBC under which such building or structure was constructed. No provision of this code shall require alterations to be made to an existing building or structure or to equipment unless conditions are present which meet the definition of an unsafe structure.

C. Section 103.2.1 Maintenance of nonrequired components and systems. Nonrequired components and systems may be discontinued in use provided that no hazard results from such discontinuance of use.

D. Section 103.2.2 Maintenance of nonrequired fire protection systems. Nonrequired fire protection systems shall be maintained to function as originally installed. If any such systems are to be reduced in function or discontinued, approval shall be obtained from the building official in accordance with Section 103.3.1 of the VCC.

E. Section 103.2.3 Responsibility. The owner of a structure shall provide and maintain all buildings, structures, systems, facilities, and associated equipment in compliance with this code unless it is specifically expressed or implied that it is the responsibility of the tenant or occupant.

Note: Where an owner states that a tenant is responsible for performing any of the owner's duties under this code, the code official may request information needed to verify the owner's statement, as allowed by § 55.1-1209 A 5 of the Code of Virginia. A tenant's responsibility is limited and protected under the Virginia Residential Landlord and Tenant Act.

F. Section 103.3 Continued approval. Notwithstanding any provision of this code to the contrary, alterations shall not be required to be made to existing buildings or structures which are occupied in accordance with a certificate of occupancy issued under any edition of the USBC.

G. Section 103.4 Rental Inspections. In accordance with § 36-105.1:1 of the Code of Virginia, these provisions are applicable to rental inspection programs. For purposes of this section:

"Dwelling unit" means a building or structure or part thereof that is used for a home or residence by one or more persons who maintain a household.

"Owner" means the person shown on the current real estate assessment books or current real estate assessment records.

"Residential rental dwelling unit" means a dwelling unit that is leased or rented to one or more tenants. However, a dwelling unit occupied in part by the owner thereof shall not be construed to be a residential rental dwelling unit unless a tenant occupies a part of the dwelling unit that has its own cooking and sleeping areas and a bathroom, unless otherwise provided in the zoning ordinance by the local governing body.

The local governing body may adopt an ordinance to inspect residential rental dwelling units for compliance with this code and to promote safe, decent, and sanitary housing for its citizens, in accordance with the following:

1. Except as provided for in subdivision 3 of this subsection, the dwelling units shall be located in a rental inspection district established by the local governing body in accordance with this section; and
2. The rental inspection district is based upon a finding by the local governing body that (i) there is a need to protect the public health, safety, and welfare of the occupants of dwelling units inside the designated rental inspection district; (ii) the residential rental dwelling units within the designated rental inspection district are either (a) blighted or in the process of deteriorating or (b) the residential rental dwelling units are in the need of inspection by the building department to prevent deterioration, taking into account the number, age, and condition of residential dwelling rental units inside the proposed rental inspection district; and (iii) the inspection of residential rental dwelling units inside the proposed rental inspection district is necessary to maintain safe, decent, and sanitary living conditions for tenants and other residents living in the proposed rental inspection district. Nothing in this section shall be construed to authorize one or more locality-wide rental inspection districts, and a local governing body shall limit the boundaries of the proposed rental inspection districts to such areas of the locality that meet the criteria set out in this subsection; or
3. An individual residential rental dwelling unit outside of a designated rental inspection district is made subject to the rental inspection ordinance based upon a separate finding for each individual dwelling unit by the local governing body that (i) there is a need to protect the public health, welfare, and safety of the occupants of that individual dwelling unit; (ii) the individual dwelling unit is either (a) blighted or (b) in the process of deteriorating; or (iii) there is evidence of violations of this code that affect the safe, decent, and sanitary living conditions for tenants living in such individual dwelling unit.

For purposes of this section, the local governing body may designate a local government agency other than the building department to perform all or part of the duties contained in the enforcement authority granted to the building department by this section.

Before adopting a rental inspection ordinance and establishing a rental inspection district or an amendment to either, the governing body of the locality shall hold a public hearing on the proposed ordinance. Notice of the hearing shall be published once a week for two successive weeks in a newspaper published or having general circulation in the locality.

Upon adoption by the local governing body of a rental inspection ordinance, the building department shall make reasonable efforts to notify owners of residential rental dwelling units in the designated rental inspection district or an owner's designated managing agents and to any individual dwelling units subject to the rental inspection ordinance not located in a rental inspection of the adoption of such

ordinance and provide information and an explanation of the rental inspection ordinance and the responsibilities of the owner thereunder.

The rental inspection ordinance may include a provision that requires the owners of dwelling units in a rental inspection district to notify the building department in writing if the dwelling unit of the owner is used for residential rental purposes. The building department may develop a form for such purposes. The rental inspection ordinance shall not include a registration requirement or a fee of any kind associated with the written notification pursuant to this subdivision. A rental inspection ordinance may not require that the written notification from the owner of a dwelling unit subject to a rental inspection ordinance be provided to the building department in less than 60 days after the adoption of a rental inspection ordinance. However, there shall be no penalty for the failure of an owner of a residential rental dwelling unit to comply with the provisions of this subsection, unless and until the building department provides personal or written notice to the property owner, as provided in this section. In any event, the sole penalty for the willful failure of an owner of a dwelling unit who is using the dwelling unit for residential rental purposes to comply with the written notification requirement shall be a civil penalty of up to \$50. For purposes of this subsection, notice sent by regular first-class mail to the last known address of the owner as shown on the current real estate tax assessment books or current real estate tax assessment records shall be deemed compliance with this requirement.

Upon establishment of a rental inspection district in accordance with this section, the building department may, in conjunction with the written notifications as provided for in this section, proceed to inspect dwelling units in the designated rental inspection district to determine if the dwelling units are being used as a residential rental property and for compliance with the provisions of this code that affect the safe, decent, and sanitary living conditions for the tenants of such property.

If a multifamily development has more than 10 dwelling units, in the initial and periodic inspections, the building department shall inspect only a sampling of dwelling units of not less than two and not more than 10% of the dwelling units of a multifamily development that includes all of the multifamily buildings that are part of that multifamily development. In no event, however, shall the building department charge a fee authorized by this section for inspection of more than 10 dwelling units. If the building department determines upon inspection of the sampling of dwelling units that there are violations of this code that affect the safe, decent, and sanitary living conditions for the tenants of such multifamily development, the building department may inspect as many dwelling units as necessary to enforce these provisions, in which case, the fee shall be based upon a charge per dwelling unit inspected, as otherwise provided in the fee schedule established pursuant to this section.

Upon the initial or periodic inspection of a residential rental dwelling unit subject to a rental inspection ordinance, the building department has the authority under these provisions to require the owner of the dwelling unit to submit to such follow-up inspections of the dwelling unit as the building department deems necessary, until such time as the dwelling unit is brought into compliance with the provisions of this code that affect the safe, decent, and sanitary living conditions for the tenants.

Except as provided for in this section, following the initial inspection of a residential rental dwelling unit subject to a rental inspection ordinance, the building department may inspect any residential rental

dwelling unit in a rental inspection district that is not otherwise exempted in accordance with this section, no more than once each calendar year.

Upon the initial or periodic inspection of a residential rental dwelling unit subject to a rental inspection ordinance for compliance with these provisions, provided that there are no violations of this code that affect the safe, decent, and sanitary living conditions for the tenants of such residential rental dwelling unit, the building department shall provide to the owner of such residential rental dwelling unit an exemption from the rental inspection ordinance for a minimum of four years. Upon the sale of a residential rental dwelling unit, the building department may perform a periodic inspection as provided in this section, subsequent to such sale. If a residential rental dwelling unit has been issued a certificate of occupancy within the last four years, an exemption shall be granted for a minimum period of four years from the date of the issuance of the certificate of occupancy by the building department. If the residential rental dwelling unit becomes in violation of this code during the exemption period, the building department may revoke the exemption previously granted under this section.

A local governing body may establish a fee schedule for enforcement of these provisions that includes a per dwelling unit fee for the initial inspections, follow-up inspections, and periodic inspections under this section.

The provisions of this section shall not in any way alter the rights and obligations of landlords and tenants pursuant to the applicable provisions of Chapter 12 (§ 55.1-1200 et seq.) of Title 55.1 of the Code of Virginia.

The provisions of this section shall not alter the duties or responsibilities of the local building department under § 36-105 of the Code of Virginia to enforce the USBC.

Unless otherwise provided for in § 36-105.1:1 of the Code of Virginia, penalties for violation of this section shall be the same as the penalties provided for violations of other sections of the USBC.

13VAC5-63-480. Section 104 Enforcement, generally.

A. Section 104.1 Scope of enforcement. This section establishes the requirements for enforcement of this code in accordance with subdivision C 1 of § 36-105 of the Code of Virginia. The local governing body may also inspect and enforce the provisions of the USBC for existing buildings and structures, whether occupied or not. Such inspection and enforcement shall be carried out by an agency or department designated by the local governing body.

In accordance with subdivision C 3 of § 36-105 of the Code of Virginia, if the local building department receives a complaint that a violation of this code exists that is an immediate and imminent threat to the health or safety of the owner, tenant, or occupants of any building or structure, or the owner, occupant, or tenant of any nearby building or structure, and the owner, occupant, or tenant of the building or structure that is the subject of the complaint has refused to allow the code official or his agent to have access to the subject building or structure, the code official or his agent may make an affidavit under oath before a magistrate or a court of competent jurisdiction and request that the magistrate or court grant the code official or his agent an inspection warrant to enable the code official or his agent to enter

the subject building or structure for the purpose of determining whether violations of this code exist. After issuing a warrant under this section, the magistrate or judge shall file the affidavit in a manner prescribed by § 19.2-54 of the Code of Virginia. After executing the warrant, the code official or his agents shall return the warrant to the clerk of the circuit court of the city or county wherein the inspection was made. The code official or his agent shall make a reasonable effort to obtain consent from the owner, occupant, or tenant of the subject building or structure prior to seeking the issuance of an inspection warrant under this section.

Note: Generally, official action must be taken by the local government to enforce the ~~VMC~~. VPMC. Consultation with the legal counsel of the jurisdiction when initiating or changing such action is advised.

B. Section 104.1.1 Transfer of ownership. In accordance with subdivision C 4 of § 36-105 of the Code of Virginia, if the local building department has initiated an enforcement action against the owner of a building or structure and such owner subsequently transfers the ownership of the building or structure to an entity in which the owner holds an ownership interest greater than 50%, the pending enforcement action shall continue to be enforced against the owner.

C. Section 104.2 Fees. In accordance with subdivision C 7 of § 36-105 of the Code of Virginia, fees may be levied by the local governing body in order to defray the cost of enforcement and appeals. For the purposes of this section, "defray the cost" may include the fair and reasonable costs incurred for such enforcement during normal business hours, but shall not include overtime costs unless conducted outside of the normal working hours established by the locality. A schedule of such costs shall be adopted by the local governing body in a local ordinance. A locality shall not charge overtime ~~rate~~ rates for inspections conducted during the normal business hours established by the locality. Nothing in this provision shall be construed to prohibit a private entity from conducting such inspections, provided the private entity has been approved to perform such inspections in accordance with the written policy of the code official for the locality.

D. Section 104.3 State buildings. In accordance with § 36-98.1 of the Code of Virginia, this code shall be applicable to state-owned buildings and structures. Acting through the Division of Engineering and Buildings, the Department of General Services shall function as the building official for state-owned buildings.

E. Section 104.3.1 Certification of state enforcement personnel. State enforcement personnel shall comply with the applicable requirements of Sections 104.4.2 and 104.4.3 for certification.

Note: Continuing education and periodic training requirements for DHCD certifications are set out in the VCS.

F. Section 104.4 Local enforcing agency. In jurisdictions enforcing this code, the local governing body shall designate the agency within the local government responsible for such enforcement and appoint a code official. The local governing body may also utilize technical assistants to assist the code official in the enforcement of this code. A permanently appointed code official shall not be removed from office except for cause after having been afforded a full opportunity to be heard on specific and relevant charges by and before the appointing authority. DHCD shall be notified by the appointing authority

within 30 days of the appointment or release of a permanent or acting code official and within 60 days after retaining or terminating a technical assistant.

Note: Code officials and technical assistants are subject to sanctions in accordance with the VCS.

G. Section 104.4.1 Qualifications of code official and technical assistants. The code official shall have at least five years of building experience as a licensed professional engineer or architect, building, fire or trade inspector, contractor, housing inspector or superintendent of building, fire or trade construction or at least five years of building experience after obtaining a degree in architecture or engineering, with at least three years in responsible charge of work. Any combination of education and experience that would confer equivalent knowledge and ability shall be deemed to satisfy this requirement. The code official shall have general knowledge of sound engineering practice in respect to the design and construction of structures, the basic principles of fire prevention, the accepted requirements for means of egress and the installation of elevators and other service equipment necessary for the health, safety and general welfare of the occupants and the public. The local governing body may establish additional qualification requirements.

A technical assistant shall have at least three years of experience and general knowledge in at least one of the following areas: building construction, building, fire or housing inspections, plumbing, electrical or mechanical trades, fire protection, elevators or property maintenance work. Any combination of education and experience which would confer equivalent knowledge and ability shall be deemed to satisfy this requirement. The locality may establish additional certification requirements.

H. Section 104.4.2 Certification of code official and technical assistants. An acting or permanent code official shall be certified as a code official in accordance with the VCS within one year after being appointed as acting or permanent code official. A technical assistant shall be certified in the appropriate subject area within 18 months after becoming a technical assistant. When required by a locality to have two or more certifications, a technical assistant shall obtain the additional certifications within three years from the date of such requirement.

Exception: A code official or technical assistant in place prior to April 1, 1995, shall not be required to meet the certification requirements in this section while continuing to serve in the same capacity in the same locality.

I. Section 104.4.3 Noncertified code official. Except for a code official exempt from certification under the exception to Section 104.4.2, any acting or permanent code official who is not certified as a code official in accordance with the VCS shall attend the core module of the Virginia Building Code Academy or an equivalent course in an individual or regional code academy accredited by DHCD within 180 days of appointment. This requirement is in addition to meeting the certification requirement in Section 104.4.2.

Note: Continuing education and periodic training requirements for DHCD certifications are set out in the VCS.

J. Section 104.4.4 Conflict of interest. The standards of conduct for code officials and technical assistants shall be in accordance with the provisions of the State and Local Government Conflict of Interests Act, Chapter 31 (§ 2.2-3100 et seq.) of Title 2.2 of the Code of Virginia.

K. Section 104.4.5 Records. The local enforcing agency shall retain a record of applications received, permits, certificates, notices and orders issued, fees collected and reports of inspections in accordance with The Library of Virginia's General Schedule Number Six.

L. Section 104.5 Powers and duties, generally. The code official shall enforce this code as set out herein and as interpreted by the State Review Board and shall issue all necessary notices or orders to ensure compliance with the code.

M. Section 104.5.1 Delegation of authority. The code official may delegate powers and duties except where such authority is limited by the local government. When such delegations are made, the code official shall be responsible for assuring that they are carried out in accordance with the provisions of this code.

N. Section 104.5.2 Issuance of modifications. Upon written application by an owner or an owner's agent, the code official may approve a modification of any provision of this code provided the spirit and intent of the code are observed and public health, welfare and safety are assured. The decision of the code official concerning a modification shall be made in writing and the application for a modification and the decision of the code official concerning such modification shall be retained in the permanent records of the local enforcing agency.

O. Section 104.5.2.1 Substantiation of modification. The code official may require or may consider a statement from a professional engineer, architect or other person competent in the subject area of the application as to the equivalency of the proposed modification.

P. Section 104.5.3 Inspections. The code official may inspect buildings or structures to determine compliance with this code and shall carry proper credentials when performing such inspections. The code official is authorized to engage such expert opinion as deemed necessary to report upon unusual, detailed, or complex technical issues in accordance with local policies.

Q. Section 104.5.3.1 Observations. When, during an inspection, the code official or authorized representative observes an apparent or actual violation of another law, ordinance, or code not within the official's authority to enforce, such official shall report the findings to the official having jurisdiction in order that such official may institute the necessary measures.

R. Section 104.5.3.2 Approved inspection agencies and individuals. The code official may accept reports of inspections or tests from individuals or inspection agencies approved in accordance with the code official's written policy required by Section 104.5.3.3. The individual or inspection agency shall meet the qualifications and reliability requirements established by the written policy. Reports of inspections by approved individuals or agencies shall be in writing, shall indicate if compliance with the applicable provisions of this code have been met, and shall be certified by the individual inspector or by the responsible officer when the report is from an agency. Reports of inspections conducted for the purpose

of verifying compliance with the requirements of the USBC for elevators, escalators, and related conveyances shall include the name and certification number of the elevator mechanic performing the tests witnessed by the third-party inspector or agency. The code official shall review and approve the report unless there is cause to reject it. Failure to approve a report shall be in writing within five working days of receiving it, stating the reasons for rejection.

S. Section 104.5.3.3 Third-party inspectors. Each code official charged with the enforcement of this code and who accepts third-party reports shall have a written policy establishing the minimum acceptable qualifications for third-party inspectors. The policy shall include the format and time frame required for submission of reports, any prequalification or preapproval requirements before conducting a third-party inspection, and any other requirements and procedures established by the code official.

T. Section 104.5.3.4 Qualifications. In determining third-party qualifications, the code official may consider such items as DHCD inspector certification, other state or national certifications, state professional registrations, related experience, education, and any other factors that would demonstrate competency and reliability to conduct inspections.

U. Section 104.5.4 Manufactured home park tenant notification. If a notice of violation is issued to a manufactured home park owner for violations of this code that jeopardize the health or safety of tenants of the park, a copy of the notice shall be provided to each affected tenant of the manufactured home park. The terms, "manufactured home park" and "owner," as used in this section, shall be as defined in the Manufactured Home Lot Rental Act (Chapter 13.3 (§ 55-248.41 et seq.) of Title 55 of the Code of Virginia).

13VAC5-63-485. Section 105 Violations.

A. Section 105.1 Violation a misdemeanor; civil penalty. In accordance with § 36-106 of the Code of Virginia, it shall be unlawful for any owner or any other person, firm, or corporation, on or after the effective date of any code provisions, to violate any such provisions. Any locality may adopt an ordinance that establishes a uniform schedule of civil penalties for violations of specified provisions of the code that are not abated or remedied promptly after receipt of a notice of violation from the local enforcement officer.

Note: See the full text of § 36-106 of the Code of Virginia for additional requirements and criteria pertaining to legal action relative to violations of the code.

B. Section 105.2 Notices, reports and orders. Upon findings by the code official that violations of this code exist, the code official shall issue a correction notice or notice of violation to the owner, tenant or the person responsible for the maintenance of the structure or a notice of unsafe structure in accordance with Section 106 when a building or structure is determined by the code official to be an unsafe structure. Work done to correct violations of this code subject to the permit, inspection, and approval provisions of the VCC shall not be construed as authorization to extend the time limits established for compliance with this code. When the owner is not the responsible party to whom the notice of violation or correction notice is issued, a copy of the notice shall also be delivered to the owner.

C. Section 105.3 Correction notice. The correction notice shall be a written notice of the defective conditions. The correction notice shall require correction of the violation within a reasonable time unless an emergency condition exists as provided under the unsafe building provisions of Section 106. Upon request, the correction notice shall reference the code section that serves as the basis for the defects and shall state that such defects shall be corrected and reinspected in a reasonable time designated by the code official.

D. Section 105.4 Notice of violation. If the code official determines there are violations of this code a written notice of violation may be issued to the owner, tenant, or the person responsible for the maintenance or use of the building or structure in lieu of a correction notice as provided for in Section 105.3. In addition, the code official shall issue a notice of violation for any uncorrected violation remaining from a correction notice established in Section 105.3. The code official shall provide the section numbers for any code provisions cited in the notice of violation to the owner, tenant, or the person responsible for the maintenance or use of the building or structure. The notice shall require correction of the violation within a reasonable time. The owner, tenant, or person to whom the notice of violation has been issued shall be responsible for contacting the code official within the timeframe established for any reinspections to assure the violations have been corrected. The code official will be responsible for making such inspection and verifying the violations have been corrected. In addition, the notice of violation shall indicate the right of appeal by referencing the appeals section of this code.

Exception: Notices issued for failing to maintain buildings and structures as required by Section 103.2, as evidenced by multiple or repeated violations on the same property are not required to include a compliance deadline for correcting defects.

E. Section 105.5 Coordination of inspections. The code official shall coordinate inspections and administrative orders with any other state or local agencies having related inspection authority and shall coordinate those inspections required by the Virginia Statewide Fire Prevention Code (13VAC5-52) for maintenance of fire protection devices, equipment, and assemblies so that the owners and occupants will not be subjected to numerous inspections or conflicting orders.

Note: The Fire Prevention Code requires the fire official to coordinate such inspections with the code official.

F. Section 105.6 Further action when violation not corrected. If the responsible party has not complied with the notice of violation, or notice of unsafe structure, the code official may request the legal counsel of the locality to institute the appropriate legal proceedings to restrain, correct or abate the violation or to require the removal or termination of the use of the building or structure involved. In cases where the locality or legal counsel so authorizes, the code official may issue or obtain a summons or warrant.

G. Section 105.6.1 Further action for corrected violations: Compliance with a notice of violation or notice of unsafe structure notwithstanding, the code official may request legal proceedings be instituted for prosecution when a responsible party is served with three or more separate notices of violation or notice of unsafe structure for the same property within any five consecutive years. Legal proceedings shall not be instituted under this section for violation notices issued pursuant to the initial inspection of

the property. Legal proceedings for violations that have been abated in residential rental dwelling units within a multifamily apartment development may only be instituted for such violations that affect safe, decent, or sanitary living conditions.

Exception: Legal proceedings shall not be instituted for violations that have been abated on owner-occupied single family dwellings.

H. Section 105.7 Penalties and abatement. Penalties for violations of this code shall be as set out in § 36-106 of the Code of Virginia. The successful prosecution of a violation of the code shall not preclude the institution of appropriate legal action to require correction or abatement of a violation.

13VAC5-63-490. Section 106 Unsafe structures .

A. Section 106.1 General. This section shall apply to existing structures which are classified as unsafe. All conditions causing such structures to be classified as unsafe shall be remedied or as an alternative to correcting such conditions, the structure may be vacated and secured against public entry or razed and removed. Vacant and secured structures shall still be subject to other applicable requirements of this code. When the code official determines that an unsafe structure constitutes such a hazard that it should be demolished, then the code official shall be permitted to order the demolition of such structures in accordance with applicable requirements of this code.

Note: Structures which become unsafe during construction are regulated under the VCC.

B. Section 106.3 Notice of unsafe structure. When a structure is determined by the code official to be an unsafe structure, a written notice of unsafe structure shall be issued by personal service to the owner, the owner's agent, or the person in control of such structure. If the notice is unable to be issued by personal service, then the notice shall be sent by registered or certified mail to the last known address of the responsible party, and a copy of the notice shall be posted in a conspicuous place on the premises. The notice shall specify the section numbers for any code provisions cited, the corrections necessary to comply with this code, or if the structure is required to be demolished, the notice shall specify the time period within which the demolition must occur. The notice of unsafe structure shall indicate the right of appeal by referencing the appeals section of this code. The person to whom the notice has been issued shall be responsible for contacting the code official within the timeframe established for any reinspections to ensure the violations have been corrected. The code official will be responsible for making such inspection and verifying the violations have been corrected.

Note: Whenever possible, the notice should also be given to any tenants of the affected structure.

C. Section 106.4 Vacating unsafe structure. The code official is authorized to order occupants to vacate the unsafe structure or prohibit occupancy of the unsafe structure. When an unsafe structure is ordered to be vacated or prohibited from occupancy, the code official shall include the order in the notice of unsafe structure, or issue a separate order.

D. Section 106.5 Posting of placard. An unsafe structure that has been issued an order to vacate or prohibited from occupancy shall be posted with the following wording at each entrance to the structure: "THIS STRUCTURE IS UNSAFE AND ITS USE OR OCCUPANCY HAS BEEN PROHIBITED BY THE CODE

OFFICIAL." After a structure is placarded, entering the structure shall be prohibited except as authorized by the code official to make inspections, to perform required repairs, or to demolish the structure. In addition, the placard shall not be removed until the structure is determined by the code official to be safe to occupy, nor shall the placard be defaced.

E. Section 106.6 Revocation of certificate of occupancy. If a notice of unsafe structure is not complied with within the time period stipulated on the notice, the code official shall be permitted to request the local building department to revoke the certificate of occupancy issued under the VCC.

F. Section 106.7 Vacant and open structures. When an unsafe structure is open for public entry, the code official shall be permitted to authorize the necessary work to make such structure secure against public entry whether or not legal action to compel compliance has been instituted.

G. Section 106.8 Emergency repairs and demolition. To the extent permitted by the locality, the code official may authorize emergency repairs to unsafe structures when it is determined that there is an imminent danger of any portion of the unsafe structure collapsing or falling and when life is endangered. Emergency repairs may also be authorized where there is a code violation resulting in the immediate serious and imminent threat to the life and safety of the occupants. The code official shall be permitted to authorize the necessary work to make the structure temporarily safe whether or not legal action to compel compliance has been instituted. In addition, whenever an owner of an unsafe structure fails to comply with a notice to demolish issued under Section 106.3 in the time period stipulated, the code official shall be permitted to cause the structure to be demolished. In accordance with §§ 15.2-906 and 15.2-1115 of the Code of Virginia, the legal counsel of the locality may be requested to institute appropriate action against the property owner to recover the costs associated with any such emergency repairs or demolition and every such charge that remains unpaid shall constitute a lien against the property on which the emergency repairs or demolition were made and shall be enforceable in the same manner as provided in Articles 3 (§ 58.1-3940 et seq.) and 4 (§ 58.1-3965 et seq.) of Chapter 39 of Title 58.1 of the Code of Virginia.

Note: Code officials and local governing bodies should be aware that other statutes and court decisions may impact on matters relating to demolition, in particular whether newspaper publication is required if the owner cannot be located and whether the demolition order must be delayed until the owner has been given the opportunity for a hearing. In addition, historic building demolition may be prevented by authority granted to local historic review boards in accordance with § 15.2-2306 of the Code of Virginia unless determined necessary by the code official.

J. Section 106.9 Closing of streets. When necessary for public safety, the code official shall be permitted to order the temporary closing of sidewalks, streets, public ways, or premises adjacent to unsafe structures and prohibit the use of such spaces.

13VAC5-63-500. Section 107 Appeals.

A. Section 107.1 Establishment of appeals board. In accordance with § 36-105 of the Code of Virginia, there shall be established within each local enforcing agency a LBBCA. Whenever a county or a municipality does not have such a LBBCA, the local governing body shall enter into an agreement with

the local governing body of another county or municipality or with some other agency, or a state agency approved by DHCD for such appeals resulting therefrom. Fees may be levied by the local governing body in order to defray the cost of such appeals. The LBBCA for hearing appeals under the VCC shall be permitted to serve as the appeals board required by this section. The locality is responsible for maintaining a duly constituted LBBCA prepared to hear appeals within the time limits established in this section. The LBBCA shall meet as necessary to assure a duly constituted board, appoint officers as necessary, and receive such training on the code as may be appropriate or necessary from staff of the locality.

B. Section 107.2 Membership of board. The LBBCA shall consist of at least five members appointed by the locality for a specific term of office established by written policy. Alternate members may be appointed to serve in the absence of any regular members and as such, shall have the full power and authority of the regular members. Regular and alternate members may be reappointed. Written records of current membership, including a record of the current chairman and secretary shall be maintained in the office of the locality. In order to provide continuity, the terms of the members may be of different length so that less than half will expire in any one-year period.

C. Section 107.3 Officers and qualifications of members. The LBBCA shall annually select one of its regular members to serve as chairman. When the chairman is not present at an appeal hearing, the members present shall select an acting chairman. The locality or the chief executive officer of the locality shall appoint a secretary to the LBBCA to maintain a detailed record of all proceedings. Members of the LBBCA shall be selected by the locality on the basis of their ability to render fair and competent decisions regarding application of the USBC and shall to the extent possible, represent different occupational or professional fields relating to the construction industry. At least one member should be an experienced builder; at least one member should be an RDP, and at least one member should be an experienced property manager. Employees or officials of the locality shall not serve as members of the LBBCA.

D. Section 107.4 Conduct of members. No member shall hear an appeal in which that member has a conflict of interest in accordance with the State and Local Government Conflict of Interests Act (§ 2.2-3100 et seq. of the Code of Virginia). Members shall not discuss the substance of an appeal with any other party or their representatives prior to any hearings.

E. Section 107.5 Right of appeal; filing of appeal application. Any person aggrieved by the local enforcing agency's application of this code or the refusal to grant a modification to the provisions of this code may appeal to the LBBCA. The applicant shall submit a written request for appeal to the LBBCA within 14 calendar days of the receipt of the decision being appealed. The application shall contain the name and address of the owner of the building or structure and, in addition, the name and address of the person appealing, when the applicant is not the owner. A copy of the code official's decision shall be submitted along with the application for appeal and maintained as part of the record. The application shall be marked by the LBBCA to indicate the date received. Failure to submit an application for appeal within the time limit established by this section shall constitute acceptance of a code official's decision.

F. Section 107.6 Meetings and postponements. The LBBCA shall meet within 30 calendar days after the date of receipt of the application for appeal, except that a period of up to 45 calendar days shall be permitted where the LBBCA has regularly scheduled monthly meetings. A longer time period shall be permitted if agreed to by all the parties involved in the appeal. A notice indicating the time and place of the hearing shall be sent to the parties in writing to the addresses listed on the application at least 14 calendar days prior to the date of the hearing, except that a lesser time period shall be permitted if agreed to by all the parties involved in the appeal. When a quorum of the LBBCA is not present at a hearing to hear an appeal, any party involved in the appeal shall have the right to request a postponement of the hearing. The LBBCA shall reschedule the appeal within 30 calendar days of the postponement, except that a longer time period shall be permitted if agreed to by all the parties involved in the appeal.

G. Section 107.7 Hearings and decision. All hearings before the LBBCA shall be open meetings and the appellant, the appellant's representative, the locality's representative and any person whose interests are affected by the code official's decision in question shall be given an opportunity to be heard. The chairman shall have the power and duty to direct the hearing, rule upon the acceptance of evidence and oversee the record of all proceedings. The LBBCA shall have the power to uphold, reverse, or modify the decision of the official by a concurring vote of a majority of those present. Decisions of the LBBCA shall be final if no further appeal is made. The decision of the LBBCA shall be explained in writing, signed by the chairman and retained as part of the record of the appeal. Copies of the written decision shall be sent to all parties by certified mail. In addition, the written decision shall contain the following wording:

"Any person who was a party to the appeal may appeal to the State Review Board by submitting an application to such Board within 21 calendar days upon receipt by certified mail of the written decision. Application forms are available from the Office of the State Review Board, 600 East Main Street, Richmond, Virginia 23219, (804) 371-7150."

H. Section 107.8 Appeals to the State Review Board. After final determination by the LBBCA in an appeal, any person who was a party to the appeal may further appeal to the State Review Board. In accordance with § 36-98.2 of the Code of Virginia for state-owned buildings and structures, appeals by an involved state agency from the decision of the code official for state-owned buildings or structures shall be made directly to the State Review Board. The application for appeal shall be made to the State Review Board within 21 calendar days of the receipt of the decision to be appealed. Failure to submit an application within that time limit shall constitute an acceptance of the code official's decision. For appeals from a LBBCA, a copy of the code official's decision and the written decision of the LBBCA shall be submitted with the application for appeal to the State Review Board. Upon request by the Office of the State Review Board, the LBBCA shall submit a copy of all pertinent information from the record of the appeal. In the case of appeals involving state-owned buildings or structures, the involved state agency shall submit a copy of the code official's decision and other relevant information with the application for appeal to the State Review Board. Procedures of the State Review Board are in accordance with Article 2 (§ 36-108 et seq.) of Chapter 6 of Title 36 of the Code of Virginia. Decisions of the State Review Board shall be final if no further appeal is made.

13VAC5-63-510. Chapter 2 Definitions.

A. Change Section 201.3 of the IPMC to read:

201.3 Terms defined in other codes. Where terms are not defined in this code and are defined in the IBC, IFC, IFGC, IPC, IMC, International Existing Building Code, IRC, International Zoning Code, or NFPA 70, such terms shall have the meanings ascribed to them as stated in those codes, except that terms defined in the VCC shall be used for this code and shall take precedence over other definitions.

B. Add the following definitions to Section 202 of the IPMC to read:

Applicable building code. The local or statewide building code and referenced standards in effect at the time the building or portion thereof was constructed, altered, renovated, or underwent a change of occupancy. See Section 103 for the application of the code.

Maintained. To keep unimpaired in an appropriate condition, operation, and continuance as installed in accordance with the applicable building code, or as previously approved, and in accordance with the applicable operational and maintenance provisions of this code.

Unsafe equipment. Unsafe equipment includes any boiler, heating equipment, elevator, moving stairway, electrical wiring or device, flammable liquid containers, or other equipment that is in such disrepair or condition that such equipment is determined by the code official to be dangerous to the health, safety, and welfare of the occupants of a structure or the public.

Unsafe structure. An existing structure determined by the code official to be dangerous to the health, safety, and welfare of the occupants of the structure or the public because of but not limited to any of the following conditions:

1. The structure contains unsafe equipment;
2. The structure is so damaged, decayed, dilapidated, structurally unsafe, or of such faulty construction or unstable foundation that partial or complete collapse is likely;
3. The structure is vacant, and unsecured or open;
4. The degree to which the structure is in disrepair or lacks maintenance, ventilation, illumination, sanitary or heating facilities, or other essential equipment;
5. The required plumbing and sanitary facilities are inoperable.

C. Change the following definition in Section 202 of the IPMC to read:

Infestation. The presence of insects, rodents, vermin, or other pests in sufficient number to adversely affect the structure or health, safety, and welfare of the occupants.

D. Delete the following definitions from Section 202 of the IPMC:

Approved agency

Condemn

Cost of such demolition or emergency repairs

Dangerous

Equipment support

Inoperable motor vehicle

Labeled

Neglect

Openable area

Peer review

Pest elimination

Power safety cover

Safety cover

Strict liability offense

Ultimate deformation

Workmanlike

13VAC5-63-520. Chapter 3 General requirements.

A. Delete the following sections from Chapter 3 of the IPMC:

1. Section 301.2 Responsibility.
2. Section 302.1 Sanitation.
3. Section 302.4 Weeds.
4. Section 302.6 Exhaust vents.
5. Section 302.8 Motor vehicles.
6. Section 302.9 Defacement of property.
7. ~~Section 303.2 Enclosures.~~
8. Section 304.1.1 ~~Unsafe~~ Potentially unsafe conditions.
9. ~~8.~~ Section 304.18.1 Doors.
10. ~~9.~~ Section 304.18.2 Windows
11. ~~10.~~ Section 304.18.3 Basement hatchways.

~~12- 11.~~ Section 305.1.1 Unsafe Potentially unsafe conditions.

~~13- 12.~~ Section 306 Component serviceability (all provisions).

13. Section 307.1.1 Height.

14. Section 307.2 Guards.

15. Section 307.2.1 Height.

~~14- 16.~~ Section 308.2 Disposal of Rubbish

~~15- 17.~~ Section 308.2.1 Rubbish storage facilities.

~~16- 18.~~ Section 308.2.2 Refrigerators.

~~17- 19.~~ Section 308.3 Disposal of garbage.

~~18- 20.~~ Section 308.3.1 Garbage facilities.

~~19- 21.~~ Section 308.3.2 Containers.

~~20- 22.~~ Section 309.2 Owner.

~~21- 23.~~ Section 309.3 Single occupant.

~~22- 24.~~ Section 309.4 Multiple occupancy.

~~23- 25.~~ Section 309.5 Occupant.

B. Change the following sections in Chapter 3 of the IPMC to read:

1. Section 301.1 Scope. The provisions of this chapter shall govern the minimum conditions for the maintenance of structures and equipment and for the maintenance of exterior property to the extent that this code is applicable.

2. Section 301.3 Vacant structures. Vacant structures shall be maintained in a clean, safe, secure, and sanitary condition as provided for in this code.

3. Section 302.2 Grading and drainage. All premises shall be graded and maintained to protect the foundation walls or slab of the structure from the accumulation and drainage of surface or stagnant water in accordance with the applicable building code.

4. Section 302.3 Sidewalks and driveways. All sidewalks, walkways, stairs, driveways, parking spaces, and similar spaces regulated under the VCC shall be kept in a proper state of repair and maintained free from hazardous conditions.

5. Section 302.5 Rodent harborage. All structures shall be kept free from rodent harborage and infestation. Structures in which rodents are found shall be promptly exterminated by approved processes that will not be injurious to human health. After extermination, proper precautions shall be taken to prevent reinfestation.

6. Section 303.2 Enclosures. Swimming pool, hot tub, and spa barriers shall be maintained in accordance with the applicable building code or ordinance under which such barriers were constructed.

7. Section 304.1 General. The exterior of a structure shall be maintained in good repair and structurally sound.

8. Section 304.3 Premises identification. Address numbers of buildings shall be maintained in accordance with the applicable building code or when required by ordinance.

9. Section 304.7 Roofs and drainage. The roof and flashing shall be sound, tight, and not have defects that admit rain. Roof drainage shall be adequate to prevent dampness or deterioration in the walls or interior portion of the structure. Roof water shall be discharged in a manner to protect the foundation or slab of buildings and structures from the accumulation of roof drainage.

10. Section 304.14 Insect screens. During the period from April 1 to December 1, every door, window, and other outside opening required for ventilation of habitable rooms, food preparation areas, food service areas, or any areas where products to be included or utilized in food for human consumption are processed, manufactured, packaged, or stored shall be supplied with an approved tightly fitting screens of not less than 16 mesh per inch (16 mesh per 25 mm) and every screen door used for insect control shall have a self-closing device in good working condition.

Exception: Screens shall not be required where other approved means, such as mechanical ventilation, air curtains, or insect repellant fans, are used.

11. Section 304.18 Building security. Devices designed to provide security for the occupants and property within, when required by the applicable building code or when provided, shall be maintained unless their removal is approved by the building official.

12. Section 304.19 Gates. To the extent required by the applicable building code or to the extent provided when constructed, exterior gates, gate assemblies, operator systems if provided, and hardware shall be maintained in good condition. Latches at all entrances shall tightly secure the gates.

13. Section 305.1 General. The interior of a structure and equipment therein shall be maintained in good repair, structurally sound, and in a sanitary condition.

14. Section 307.1 General. Handrails and guards required or provided when a building was constructed shall be maintained in accordance with the applicable building code.

15. Section 308.1 Accumulation of rubbish or garbage. The interior of every structure shall be free from excessive accumulation of rubbish or garbage.

16. Change the title of Section 309 Pest Infestation and extermination to "Pest infestation and extermination".

17. Section 309.1 Infestation. All structures shall be kept free from insect and rodent infestation. Structures in which insects or rodents are found shall be promptly exterminated by approved processes that will not be injurious to human health. After extermination, proper precautions shall be taken to prevent reinfestation.

C. Add the following sections to Chapter 3 of the IPMC:

1. Section 305.7 Carbon monoxide alarms. Carbon monoxide alarms shall be maintained as approved.
2. Section ~~310~~ 312 Lead-based paint.
3. Section ~~310.1~~ 312.1 General. Interior and exterior painted surfaces of dwellings and childcare facilities, including fences and outbuildings, that contain lead levels equal to or greater than 1.0 milligram per square centimeter or in excess of 0.50% lead by weight shall be maintained in a condition free from peeling, chipping, and flaking paint or removed or covered in an approved manner. Any surface to be covered shall first be identified by an approved warning as to the lead content of such surface.
4. Section ~~311~~ 313 Aboveground liquid fertilizer storage tanks (ALFST).
5. Section ~~311.1~~ 313.1 General. ALFSTs shall be maintained in accordance with the requirements of Section 1101.16 of the VEBC and the requirements of the VCC applicable to such ALFSTs when newly constructed and the requirements of the VEBC when undergoing a change of occupancy to an ALFST and when repaired, altered, or reconstructed, including the requirements for inspections and for a secondary containment system.

13VAC5-63-524. Chapter 4 Light, ventilation, and occupancy limitations.

A. Delete the following sections from Chapter 4 of the IPMC:

1. Section 401.2 Responsibility.
2. Section 401.3 Alternative devices.
3. Section 402.2 Common halls and stairways.
4. Section 402.3 Other spaces.
5. Section 403.2 Bathrooms and toilet rooms.
6. Section 403.5 Clothes dryer exhaust.

B. Change the following sections in Chapter 4 of the IPMC to read:

1. Section 401.1 Scope. The provisions of this chapter shall govern the maintenance of structures for light, ventilation, and space for occupancy.
2. Section 402.1 Natural or artificial light. Every habitable space, hallway, stairway, bathroom, and other spaces shall be maintained to provide natural or artificial light to the extent required or provided in accordance with the applicable building code.
3. Section 403.1 Natural or mechanical ventilation. Every habitable space, hallway, stairway, bathroom, and other spaces shall be maintained to provide natural or mechanical ventilation to the extent required by the applicable building code.

4. Section 403.4 Process ventilation. Local exhaust systems required by the applicable building code or that are provided that exhaust injurious, toxic, irritating, or noxious fumes, gases, dusts, or mists to the exterior of a building shall be maintained to prevent compromising the required ventilation system.

C. Add the following section to Chapter 4 of the IPMC:

Section 404.05 Limitation of application of section. The provisions of Section 404 that address construction aspects of occupancy limitations shall apply only to the extent that such requirements were part of the applicable building code. Operational requirements such as the use of rooms or minimum areas per occupant are part of this code only to the extent that they do not require alterations to be made to a building.

13VAC5-63-530. Chapter 5 Plumbing requirements.

A. Change the title of Chapter 5 of the IPMC to "Plumbing Requirements."

B. Delete the following sections from Chapter 5 of the IPMC:

1. Section 501.2 Responsibility.
2. Section 502 Required facilities (all provisions).
3. Section 503 Toilet rooms (all provisions).
4. Section 505.5.1 Abandonment of systems.

C. Change the following sections in Chapter 5 of the IPMC to read:

1. Section 501.1 General. The provisions of this chapter shall govern the maintenance of structures for plumbing systems, facilities, and fixtures.
2. Section 504.1 General. Required or provided plumbing systems and facilities shall be maintained in accordance with the applicable building code.
3. Section 504.2 Plumbing fixtures. All plumbing fixtures shall be maintained in a safe, sanitary, and working condition. A kitchen sink shall not be used as a substitute for a required lavatory.
4. Section 504.3 Plumbing system hazards. Where it is found that a plumbing system in a structure constitutes a hazard to the public, the occupants, or the structure, the code official shall require the defects to be corrected to eliminate the hazard.
5. Section 505.1 Supply. Required or provided water supply systems shall be maintained in accordance with the applicable building code. All water supply systems shall be free from obstructions, defects, and leaks.
6. Section 505.2 Protection of water supply systems. Protection of water supply systems shall be provided and maintained in accordance with the applicable building code.

7. Section 505.3 Backflow prevention systems. Maintenance and testing shall comply with Sections 505.3.1 and 505.3.2.

8. Section 505.4 Water heating facilities. Water heating facilities shall be maintained. Combination temperature and pressure-relief valves and relief valve discharge pipes shall be maintained on water heaters.

9. Section 505.5 Nonpotable water reuse systems. Where installed, nonpotable water reuse and rainwater collection and conveyance systems shall be maintained in a safe and sanitary condition. Where such systems are not properly maintained, the systems shall be repaired to provide for safe and sanitary conditions or the system shall be abandoned in accordance with the following:

1. All system piping connecting to a utility provided or private water system shall be removed or disabled. Proper cross-connection control and backwater prevention measures shall comply with the applicable building code.
2. Where required, the distribution piping system shall be replaced with an approved potable water supply piping system.
3. The storage tank shall be secured from accidental access by sealing or locking tank inlets and access points or filling with sand or equivalent.

10. Section 506.1 Drainage and venting. Required or provided sanitary drainage and venting systems shall be maintained in accordance with the applicable building code.

11. Section 506.2 Maintenance. Every building drainage and sewer system shall function properly and be kept free from obstructions, leaks, and defects.

12. Section 507.1 General. Drainage of roofs and paved areas, yards and courts, and other open areas on the premises shall be discharged in a manner to protect the buildings and structures from the accumulation of overland water runoff.

D. Add the following sections to Chapter 5 of the IPMC:

1. Section 504.1.1 Public and employee facilities. Except for periodic maintenance or cleaning, access and use shall be provided to facilities at all times during occupancy of the premises in accordance with the applicable building code.

2. Section 504.2.1 Fixture clearances. Adequate clearances for usage and cleaning of plumbing fixtures shall be maintained as approved when installed.

3. Section 505.1.1 Tempered water. Tempered water shall be supplied to fixtures and facilities when required by the applicable building code.

4. Section 505.2.1 Attached hoses. Shampoo basin faucets, janitor sink faucets, and other hose bibs or faucets to which hoses are attached and left in place shall be protected by an approved atmospheric-type vacuum breaker or an approved permanently attached hose connection vacuum breaker.

5. Section 505.3.1 Maintenance. Backflow assemblies and air gaps shall be maintained in an operable condition.

6. Section 505.3.2 Testing. Reduced pressure principle backflow preventer assemblies, double check-valve assemblies, double-detector check valve assemblies, and pressure vacuum breaker assemblies shall be tested at least annually. Records of testing shall be available for inspection by the code official. The testing procedure shall be performed in accordance with one of the following standards: ASSE 5010-1013-1, Sections 1 and 2; ASSE 5010-1015-1, Sections 1 and 2; ASSE 5010-1015-2; ASSE 5010-1015-3, Sections 1 and 2; ASSE 5010-1015-4, Sections 1 and 2; ASSE 5010-1020-1, Sections 1 and 2; ASSE 5010-1047-1, Sections 1, 2, 3, and 4; ASSE 5010-1048-1, Sections 1, 2, 3, and 4; ASSE 5010-1048-2; ASSE 5010-1048-3, Sections 1, 2, 3, and 4; ASSE 5010-1048-4, Sections 1, 2, 3, and 4; or CAN/CSA B64.10.

13VAC5-63-540. Chapter 6 Mechanical and electrical requirements.

A. Delete the following sections from Chapter 6 of the IPMC:

1. Section 601.2 Responsibility.
2. Section 603.6 Energy conservation devices.
3. Section 604.2 Service.
4. Section 604.3.2 Abatement of electrical hazards associated with fire exposure.

B. Change the following sections in Chapter 6 of the IPMC to read:

1. Section 601.1 General. The provisions of this chapter shall govern the maintenance of mechanical and electrical facilities and equipment.
2. Section 602 Heating and cooling facilities.
3. Section 602.1 Facilities required. Heating and cooling facilities shall be maintained and operated in structures as required by this section.
4. Section 602.2 Heat supply. Every owner and operator of a Group R-2 apartment building or other residential building who rents, leases, or lets one or more dwelling unit, rooming unit, dormitory, or guestroom on terms, either expressed or implied, to furnish heat to the occupants thereof shall supply heat during the period from October 15 to May 1 to maintain a temperature of not less than 68°F (20°C) in all habitable rooms, bathrooms, and toilet rooms. The code official may also consider modifications as provided in Section 104.5.2 when requested for unusual circumstances or may issue notice approving building owners to convert shared heating and cooling piping HVAC systems 14 calendar days before or after the established dates when extended periods of unusual temperatures merit modifying these dates.

Exception: When the outdoor temperature is below the winter outdoor design temperature for the locality, maintenance of the minimum room temperature shall not be required provided

that the heating system is operating at its full design capacity. The winter outdoor design temperature for the locality shall be as indicated in Appendix D of the IPC.

5. Section 602.3 Occupiable work spaces. Indoor occupiable work spaces shall be supplied with heat during the period from October 1 to May 15 to maintain a minimum temperature of 65°F (18°C) during the period the spaces are occupied.

Exceptions:

1. Processing, storage, and operation areas that require cooling or special temperature conditions.

2. Areas in which persons are primarily engaged in vigorous physical activities.

6. Section 602.4 Cooling supply. Every owner and operator of a Group R-2 apartment building who rents, leases, or lets one or more dwelling units, rooming units, or guestrooms on terms, either expressed or implied, to furnish cooling to the occupants thereof shall supply cooling during the period from May 15 to October 1 to maintain a temperature of not more than 77°F ~~(25°F)~~ (25°C) in all habitable rooms. The code official may also consider modifications as provided in Section 104.5.2 when requested for unusual circumstances or may issue notice approving building owners to convert shared heating and cooling piping HVAC systems 14 calendar days before or after the established dates when extended periods of unusual temperatures merit modifying these dates.

Exception: When the outdoor temperature is higher than the summer design temperature for the locality, maintenance of the room temperature shall not be required provided that the cooling system is operating at its full design capacity. The summer outdoor design temperature for the locality shall be as indicated in the IECC.

7. Section 603.1 Mechanical equipment and appliances. Required or provided mechanical equipment, appliances, fireplaces, solid fuel-burning appliances, cooking appliances, chimneys, vents, and water heating appliances shall be maintained in compliance with the code under which the appliances, system, or equipment was installed, kept in safe working condition, and capable of performing the intended function.

8. Section 603.2 Removal of combustion products. Where required by the code under which installed, fuel-burning equipment and appliances shall be connected to an approved chimney or vent.

9. Section 603.5 Combustion air. Where required by the code under which installed, a supply of air for complete combustion of the fuel shall be provided for the fuel-burning equipment.

10. Section 604.1 Electrical system. Required or provided electrical systems and facilities shall be maintained in accordance with the applicable building code.

11. Section 604.3 Electrical system hazards. Where it is found that the electrical system in a structure constitutes a hazard to the occupants or the structure by reason of deterioration or damage or for similar reasons, the code official shall require the defects to be corrected to eliminate the hazard.

12. Section 604.3.1.1 Electrical equipment. Electrical distribution equipment, motor circuits, power equipment, transformers, wire, cable, flexible cords, wiring devices, ground fault circuit interrupters, surge protectors, molded case circuit breakers, low-voltage fuses, luminaires, ballasts, motors, and electronic control, signaling, and communication equipment that have been exposed to water shall be replaced in accordance with the provisions of the VEBC.

Exception: The following equipment shall be allowed to be repaired or reused where an inspection report from the equipment manufacturer, an approved representative of the equipment manufacturer, a third-party inspector per Section 113.7 of the VCC, or an electrical engineer indicates that the exposed equipment has not sustained damage that requires replacement:

1. Enclosed switches, rated 600 volts or less;
2. Busway, rated 600 volts or less;
3. Panelboards, rated 600 volts or less;
4. Switchboards, rated 600 volts or less;
5. Fire pump controllers, rated 600 volts or less;
6. Manual and magnetic motor controllers;
7. Motor control centers;
8. Alternating current high-voltage circuit breakers;
9. Low-voltage power circuit breakers;
10. Protective relays, meters, and current transformers;
11. Low-voltage and medium-voltage switchgear;
12. Liquid-filled transformers;
13. Cast-resin transformers;
14. Wire or cable that is suitable for wet locations and whose ends have not been exposed to water;
15. Wire or cable, not containing fillers, that is suitable for wet locations and whose ends have not been exposed to water;
16. Luminaires that are listed as submersible;
17. Motors; or
18. Electronic control, signaling, and communication equipment.

13. Section 604.3.2.1 Electrical equipment. Electrical switches, receptacles and fixtures, including furnace, water heating, security system, and power distribution circuits, that have been exposed to fire shall be replaced in accordance with the provisions of the VEBC.

Exception: Electrical switches, receptacles, and fixtures that shall be allowed to be repaired or reused where an inspection report from the equipment manufacturer or an approved representative of the equipment manufacturer, a third party licensed or certified electrician, or an electrical engineer indicates that the equipment has not sustained damage that requires replacement.

14. Section 605.1 Electrical components. Electrical equipment, wiring, and appliances shall be maintained in accordance with the applicable building code.

15. Section 605.2 Power distribution and receptacles. Required or provided power circuits and receptacles shall be maintained in accordance with the applicable building code, and ground fault and arc-fault circuit interrupter protection shall be provided where required by the applicable building code. All receptacle outlets shall have the appropriate faceplate cover for the location when required by the applicable building code.

16. Section 605.3 Lighting distribution and luminaires. Required or provided lighting circuits and luminaires shall be maintained in accordance with the applicable building code.

17. Section 605.4 Flexible cords. Flexible cords shall not be run through doors, windows, or cabinets or concealed within walls, floors, or ceilings.

18. Section 606.1 General. Elevators, dumbwaiters, and escalators shall be maintained in compliance with ASME A17.1. An annual periodic inspection is required of all elevators and escalators. A locality shall be permitted to require a six-month periodic inspection. Periodic tests are required of all elevators and escalators at the intervals listed in ASME A17.1 Appendix N. Periodic tests shall be witnessed by the code official. The code official may provide for such inspections and test witnessing by an approved agency or through agreement with other local certified elevator inspectors. An approved agency includes any individual, partnership, or corporation that has met the certification requirements established in the VCS. The most current certificate of inspection shall be on display at all times within the elevator or attached to the escalator, be available for public inspection in the office of the building operator or be posted in a publicly conspicuous location approved by the code official. Where not displayed in the elevator or attached to the escalator, there shall be a notice of where the certificate of inspection is available for inspection.

19. Section 607.2 Clothes dryer exhaust duct. Required or provided clothes dryer exhaust systems shall be maintained in accordance with the applicable building code.

C. Add the following sections to Chapter 6 of the IPMC:

1. Section 602.2.1 Prohibited use. In dwelling units subject to Section 602.2, one or more unvented room heaters shall not be used as the sole source of comfort heat in a dwelling unit.

2. Section 603.7 Fuel tanks and systems. Fuel gas or combustible or flammable liquid containers, tanks, and piping systems shall be maintained in compliance with the code under which they were installed, kept in safe working condition, and capable of performing the intended function or removed or abandoned in accordance with the Virginia Statewide Fire Prevention Code.

~~3. Section 607.2 Clothes dryer exhaust duct. Required or provided clothes dryer exhaust systems shall be maintained in accordance with the applicable building code.~~

13VAC5-63-545. Chapter 7 Fire safety requirements.

A. Delete the following sections from Chapter 7 of the IPMC:

1. Section 701.2 Responsibility.
2. Section 703.2 Unsafe conditions.
3. Section 703.7 Vertical shafts.
4. Section 704.1.2 Required fire protection systems.
5. Section 704.1.3 Fire protection systems.
6. Section 704.2.1 Records.
7. Table 704.2 FIRE PROTECTION SYSTEM MAINTENANCE STANDARDS.
8. Section 704.2.2 Records information.
9. Section 704.3.1 Emergency impairments.
10. Section 704.4 Removal of or tampering with equipment.
11. Section 704.4.1 Removal of or tampering with appurtenances.
12. Section 704.4.2 Removal of existing ~~occupant~~ occupant-use hose lines.
13. Section 704.4.3 Termination of monitoring service.
14. Section 704.5.2 Clear space around connections.
15. Section 704.6.1 Where required.
16. Section 704.6.1.1 Group R-1.
17. Section 704.6.1.2 Groups R-2, R-3, R-4, and I-1.
18. Section 704.6.1.3 Installation near cooking appliances.
19. Section 704.6.1.4 Installation near bathrooms.
20. Section 704.6.2 Interconnection.
21. Section 704.6.3 Power source.

22. Section 704.6.4 Smoke detection system.

23. Section 704.7 Single-station and multiple-station smoke ~~alarms~~. alarms (all provisions).

24. Section 705.1 General.

B. Change the following sections in Chapter 7 of the IPMC:

1. Section 701.1 General. The provisions of this chapter shall govern the maintenance of fire safety facilities and equipment.

2. Section 702.1 General. The means of egress system shall be maintained in accordance with the applicable building code and Chapter 10 of the SFPC to provide a safe, continuous, and unobstructed path of travel from any point in a building or structure to the public way.

3. Section 702.2 Aisles. The required width of aisles shall be maintained in accordance with the applicable building code.

4. Section 702.3 Doors. Means of egress doors shall be maintained and to the extent required by the code in effect at the time of construction, shall be readily openable from the side from which egress is to be made without the need for keys, special knowledge, or effort.

5. Section 702.4 Emergency escape and rescue openings. Required emergency escape and rescue openings shall be maintained in accordance with the code in effect at the time of construction and to the extent required by the code in effect at the time of construction shall be operational from the inside of the room without the use of keys or tools. Bars, grilles, grates, or similar devices are permitted to be placed over emergency escape and rescue openings provided the minimum net clear opening size complies with the code that was in effect at the time of construction, and such devices shall be releasable or removable from the inside without the use of a key, tool, or force greater than that which is required for normal operation of the escape and rescue opening.

6. Section 703.3 Maintenance. The required fire-resistance rating of fire-resistance-rated construction, including walls, firestops, shaft enclosures, partitions, smoke barriers, floors, fire-resistive coatings and sprayed fire-resistant materials applied to structural members, and joint systems, shall be maintained. Such elements shall be visually inspected annually by the owner and maintained as constructed in accordance with the applicable building code. Records of inspections and repairs shall be maintained. Where concealed, such elements shall not be required to be visually inspected by the owner unless the concealed space is accessible by the removal or movement of a panel, access door, ceiling tile, or entry to the space.

7. Section 703.8 Opening protective closers. Where openings are required to be protected, opening protectives shall be maintained self-closing or automatic-closing by smoke detection.

8. Section 704.1 General. Systems, devices, and equipment to detect a fire, actuate an alarm, or suppress or control a fire or any combination thereof shall be maintained in an operable condition at all times.

9. Section 704.1.1 Maintenance. Fire protection systems shall be maintained in accordance with the applicable building code and the Statewide Fire Prevention Code.

10. Section 704.2 Records. Inspection, testing, and maintenance records shall be maintained in accordance with the Statewide Fire Prevention Code.

11. Section 704.3 Systems out of service. Where a required fire protection system is taken out of service, it shall be taken out of service in accordance with the Statewide Fire Prevention Code, and the fire department and the fire code official shall be notified immediately.

12. Section 704.5 Fire department connection access. Ready access to fire department connections shall be maintained at all times.

13. Section 704.5.1 Clear space around connections. A working space of not less than 36 inches (914 mm) in width, 36 inches (914 mm) in depth, and 78 inches (1981 mm) in height shall be maintained in front of and to the sides of wall-mounted fire department connections and around the circumference of free-standing fire department connections.

14. Section 704.6 Single-station and multiple-station smoke alarms. Required or provided single-station and multiple-station smoke alarms shall be maintained in accordance with the applicable building code.

13VAC5-63-549. Chapter 8 Referenced standards.

Change the referenced standards in Chapter 8 of the IPMC as follows (standards not shown remain the same):

Standard reference number	Title	
ASSE 5010-1013-1	Field Test Procedure for a Reduced Pressure Principle Assembly Using a Differential Pressure Gauge, 1991	
ASSE 5010-1015-1	Field Test Procedure for a Double Check Valve Assembly Using a Duplex Gauge, 1991	
ASSE 5010-1015-2	Field Test Procedure for a Double Check Valve Assembly Using a Differential Pressure Gauge - High- and Low-Pressure Hose Method, 1991	
ASSE 5010-1015-3	Field Test Procedure for a Double Check Valve Assembly Using a Differential Pressure Gauge - High Pressure Hose Method, 1991	
ASSE 5010-1015-4	Field Test Procedure for a Double Check Valve Assembly Using a Site Tube, 1991	
ASSE 5010-1020-1	Field Test Procedures for a Pressure Vacuum Breaker Assembly, 1991	

ASSE 5010-1047-1	Field Test Procedure for a Reduced Pressure Detector Assembly Using a Differential Pressure Gauge, 1991	
ASSE 5010-1048-1	Field Test Procedure for a Double Check Detector Assembly Using a Duplex Gauge, 1991	
ASSE 5010-1048-2	Field Test Procedure for a Double Check Detector Assembly Using a Differential Pressure Gauge - High- and Low-Pressure Hose Method, 1991	
ASSE 5010-1048-3	Field Test Procedure for a Double Check Detector Assembly Using a Differential Pressure Gauge - High-Pressure Hose Method, 1991	505.3.2
ASSE 5010-1048-4	Field Test Procedure for a Double Check Detector Assembly Using a Site Tube, 1991	505.3.2
CAN/CSA-B64.10-01	Manual for the Selection and Installation of Backflow Prevention Devices/Manual for the Maintenance and Field Testing of Backflow Prevention Devices	505.3.2

Tab 2

USBC Proposals Recommended by the General Stakeholder Workgroup as Consensus for Approval

Proposal No.	Proposal ID	Description	Page
24	B103.7-24	Correlates the USBC with § 36-98.1 of the Code of Virginia. Some changes were a result of HB285 and HB1425 during the 2024 General Assembly (GA) session and some were from previous GA sessions.	Tab 2 – Page 1
25	B105.2-24	Deletes the requirement for building officials to notify DHCD when new technical assistants are hired. (SFPC companion proposal FP105.3.1-24; USBC Part III companion proposal PM104.4-24)	Tab 2 – Page 7
26	B108.2-24	Clarifies that the permit exemption for mechanical appliance replacements applies only when there is no change in refrigerant classification.	Tab 2 – Page 9
27	B109.1-24	Clarifies that construction documents for one-and two-family dwellings may have floor plans reversed.	Tab 2 – Page 13
28	B110.6-24	Allows the building official to grant one or more permit extensions upon request, regardless of whether the request is in writing.	Tab 2 – Page 15
29	B115.2-24	Provides the building official with flexibility to determine the appropriate party for issuing Notices of Violation.	Tab 2 – Page 17
30	B115.2(2)-24	Clarifies that electronic service is an acceptable method for delivering Notices of Violation.	Tab 2 – Page 19
31	B118.4-24	Updates legacy terminology related to “unsafe buildings”, removes outdated notes, clarifies how orders to vacate are to be issued, and consolidates the requirements for posting of placards.	Tab 2 – Page 21
32	B119.5-24	Clarifies that the reaffirmation of a prior code decision does not constitute a new application of code subject to appeal. (SFPC companion proposal FP112.5-24)	Tab 2 – Page 23
33	B119.5(1)-24	Clarifies that the written request for appeals is not considered to be complete and filed until the fee levied by the local governing body is paid. (SFPC companion proposal FP112.1-24)	Tab 2 – Page 25
34	B202-24	Adds a new definition for “Dead End Corridor”.	Tab 2 – Page 27

35	B302.1-24	Relocation of existing provisions related to day support and day treatment facilities, for correlation purposes.	Tab 2 – Page 29
36	B406.2.7-24	Adds new requirements for electric vehicle charging systems, including the installation of emergency shutoff controls, provisions for impact protection, and the posting of emergency procedures. (SFPC companion proposal FP1208-24)	Tab 2 – Page 31
37	B406.2.7(1)-24	Requires electric vehicle charging system equipment to be listed and labeled in accordance with UL 2750 (in addition to UL 2202), and parking garages with electric vehicle charging stations to comply with sections 6.4 and 6.5 of NFPA 88A.	Tab 2 – Page 39
38	B407.4.1.1-24	Deletes exiting Virginia amendment related to special locking arrangements, aligning with the 2024 International Building Code requirements.	Tab 2 – Page 47
39	B509.1-24	Adds Lithium-ion and lithium metal battery storage to the Incidental Uses table and requires compliance with Section 320 of the International Fire Code.	Tab 2 – Page 49
40	B1006.2.1(1)-24	Deletes an existing Virginia exception to the requirements for egress based on occupant load and common path of egress travel distance. Similar provisions are now covered in the 2024 International Building Code.	Tab 2 – Page 51
41	B1006.3.4-24	Allows four-story R-2 occupancy buildings to be served by a single exit when established criteria are met.	Tab 2 – Page 53
42	B1110.20-24	Adds new requirements for baby diaper changing tables in Groups A, B, E, M, R-1, and in highway rest stops.	Tab 2 – Page 77
43	B3005.4-24	Deletes existing Virginia amendments related to elevator machine rooms, control rooms, control spaces, and machinery spaces, aligning with the 2024 International Building Code requirements.	Tab 2 – Page 79
44	B3301.1-24	Deletes fire safety operation and maintenance provisions from the VCC and VEBC and clarifies that fire safety plans may be required by the fire code official in accordance with the SFPC.	Tab 2 – Page 81
45	B3500(1)-24	Updates ASTM E329-02 referenced standard to the current edition, ASTM E329-25a (Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection).	Tab 2 – Page 85
46	RB311-24	Clarifies that all habitable spaces, including habitable spaces in detached accessory structures, must be provided with a compliant means of egress.	Tab 2 – Page 87

47	RB314.3-24	Relocates existing provisions for improved code readability and alignment with the structure of the 2024 International Residential Code.	Tab 2 – Page 89
48	RB318.7.6-24	Updates stairway landing provisions by incorporating changes from the ongoing 2027 International Residential Code development process to improve clarity and consistency.	Tab 2 – Page 91
49	RB322.3.6-24	Allows the installation of elevator shaft enclosures in Coastal A Zones and Coastal High Hazard Areas, provided they are designed in accordance with ASCE 24.	Tab 2 – Page 93
50	RB339-24	Allows compliance with Appendix BL Hemp -Lime (Hemcrete) Construction as an alternative to the technical provisions of the Virginia Residential Code.	Tab 2 – Page 95
51	EC-C402.1.6(1)-24	Limits the use of Appendix CD to buildings in Groups F, S, and U that are not designed or equipped to heat the interior to more than 60° F or to cool the interior other than by fans or natural ventilation.	Tab 2 – Page 101
52	EC-C402.5.2-24	Exempts data centers, and other rooms or spaces where the primary function is to house server cabinets from the minimum skylight fenestration area requirements.	Tab 2 – Page 121
53	EC-C403.7.4.1-24	Exempts qualifying individual nontransient dwelling units in Groups R-2 and R-3 from the requirement to provide air energy recovery ventilation systems.	Tab 2 – Page 123
54	REC-R402.1.2(3)-24	Adds a compliance alternative for insulating ceilings/roofs, while maintaining equivalence with the current prescriptive requirements.	Tab 2 – Page 125
55	M403.3.1.1-24	Deletes the ventilation requirements for dressing rooms within retail stores, sales floors, and showroom floors for consistency with ASHRAE 62.1.	Tab 2 – Page 127
56	M504.4-24	Clarifies that required backdraft dampers for dryer exhaust ducts must be installed at the duct termination, aligning the provision with the International Residential Code.	Tab 2 – Page 131
57	M506.3.2.5-24	Removes the option for water-spray testing of grease ducts and requires a light test using lamps with a minimum output of 1600 lumens, replacing the previous requirement for 100-watt lamps.	Tab 2 – Page 133
58	M507.1-24	Editorial cleanup to correct issues stemming from the development of the 2024 International Mechanical Code.	Tab 2 – Page 135
59	M508.2-24	Restores the requirement limiting makeup air introduced directly into the exhaust hood cavity to not more than 10 percent of the hood exhaust airflow rate,	Tab 2 – Page 137

		correcting an omission from the 2018 code development cycle.	
60	M607.6.2.2-24	Deletes the Virginia amendments addressing radiation dampers listed as static dampers, which are now addressed in the model code.	Tab 2 – Page 139
61	M1103.1-24	Updates the requirements for communicating and noncommunicating spaces to address concerns related to the flammability of A2L refrigerants.	Tab 2 – Page 141
62	M1103.1(1)-24	Updates Table 1103.1 to correct errors in the 2024 International Mechanical Code related to Refrigerant Concentration Limits (RCLs) and Lower Flammability Limits (LFLs).	Tab 2 – Page 143
63	M1109.2.5-24	Corrects limitations that were inadvertently introduced in a prior code cycle, and restores the intended application of exceptions for refrigerant piping and shaft requirements.	Tab 2 – Page 153
64	M-FG310.2-24	Eliminates the use of non–arc-resistant jacketed corrugated stainless steel tubing (CSST) and permits only arc-resistant jacketed CSST to be installed. (VRC companion proposal RM-FG2411.2-24)	Tab 2 – Page 155
65	M-FG407.2-24	Requires pipe hooks, straps, bands, brackets, and hangers used to support gas piping to be made of metal.	Tab 2 – Page 157
66	RE3702.14-24	Clarifies that branch-circuits can be shared between a dwelling unit and its accessory dwelling unit (ADU).	Tab 2 – Page 159
67	RE3705.6-24	Updates Table E3705.6 to include 10-ampere standard fuses and inverse-time circuit breakers, aligning it with the requirements of NFPA 70-2023, Section 240.6.	Tab 2 – Page 161
68	RM-FG2411.2-24	Eliminates the use of non–arc-resistant jacketed corrugated stainless steel tubing (CSST) and permits only arc-resistant jacketed CSST to be installed. (VFGC companion proposal M-FG310.2-24)	Tab 2 – Page 163
69	RM-FG2415.7-24	Clarifies that the exception exempting black steel piping from protection against physical damage applies only to piping with a wall thickness of Schedule 40 or greater.	Tab 2 – Page 165
70	RM-FG2442.3-24	Clarifies that return air may be shared between a dwelling unit and its accessory dwelling unit (ADU).	Tab 2 – Page 167
71	RP2903.10.1-24	Clarifies that a water service shutoff valve may be shared between a dwelling unit and its accessory dwelling unit (ADU).	Tab 2 – Page 169
72	EB102.2-24	Updates the scoping provisions to include alteration, change of occupancy, addition, and relocation (in addition to rehabilitation) activities, and deletes	Tab 2 – Page 171

		“construction” for accuracy and alignment with the International Existing Building Code.	
73	EB102.2.2-24	Overhauls and relocates existing emergency escape and rescue opening requirements to new Section 307.	Tab 2 – Page 173
74	EB103.9-24	Provides clarification on the types of licensed professionals permitted to prepare elevation certificates, consistent with DPOR regulations and FEMA guidelines.	Tab 2 – Page 177
75	EB202-24	Updates the definition of “change of occupancy” to include electrical requirements in special occupancies as one of the triggers.	Tab 2 – Page 179
76	EB202(1)-24	Updates the definition of “change of occupancy” to include “change of use” as one of the conditions that constitutes a change of occupancy.	Tab 2 – Page 181
77	EB307-24	Adds three new sections to Chapter 3 to serve as placeholders for future provisions.	Tab 2 – Page 183
78	EB401.1-24	Updates the scoping provisions to include repairs, alterations, additions, and change of occupancy (in addition to rehabilitation), and deletes “construction” for accuracy and alignment with the International Existing Building Code.	Tab 2 – Page 185
79	EB403.1-24	Clarifies that existing accessible elements and features may be removed, provided that the building or facility complies with the accessibility requirements for new construction after their removal.	Tab 2 – Page 187
80	EB506.2-24	Requires replacement plumbing fixtures to comply with the maximum water flow and consumption limits applicable to new construction.	Tab 2 – Page 189
81	EB702.2-24	Clarifies the applicability of Chapter 7 to projects involving the creation of or conversion to building types or features regulated by Chapter 4 of the VCC.	Tab 2 – Page 191
82	EB706.2-24	Provides additional flexibility in meeting building height and area requirements for Group R-2 occupancies protected throughout with an NFPA 13 automatic sprinkler system.	Tab 2 – Page 193
83	EB801.2-24	Clarifies when elevator cars sized to accommodate ambulance stretchers are required for vertical additions.	Tab 2 – Page 195
84	EB805.2.1.1-24	Exempts additions from blower door testing requirements and permits verification of building envelope tightness through visual inspection.	Tab 2 – Page 197
85	EB901.1-24	Updates the scoping provisions to include repairs, alterations, additions, change of occupancy, rehabilitation, and relocation for alignment with the International Existing Building Code.	Tab 2 – Page 199

86	PM104.4-24	Deletes the requirement for code officials to notify DHCD when new technical assistants are hired. (USBC Part I companion proposal B105.2-24; SFPC companion proposal FP105.3.1-24)	Tab 2 – Page 201
87	PM105.2-24	Specifies the methods by which notices of violation are to be issued, aligning the process with the VCC.	Tab 2 – Page 203
88	PM106.8-24	Clarifies that emergency demolitions of unsafe structures may be authorized under this section when an imminent danger of collapse is present and life is endangered.	Tab 2 – Page 207
89	PM107.5-24	Clarifies that the written request for appeals is not considered to be complete and filed until the fee levied by the local governing body is paid. [USBC Part I companion proposal B119.5(1)-24; SFPC companion proposal FP112.1-24]	Tab 2 – Page 209
90	PM202-24	Adds “vacant and” to condition #3 of the “unsafe structure” definition, correcting an omission from a previous code development cycle.	Tab 2 – Page 211
91	PM302.5-24	Clarifies that it is the rodents, not the structures, that must be exterminated.	Tab 2 – Page 213
92	PM303.2-24	Adds new maintenance requirements specific to swimming pool power safety covers and spa or hot tub lockable safety covers similar to those for barriers.	Tab 2 – Page 215
93	PM309.1-24	Clarifies that it is the rodents and the insects, not the structures, that must be exterminated.	Tab 2 – Page 217
94	PM602.2(2)-24	Adjusts heating and cooling periods, increases HVAC transition flexibility, aligns commercial and residential heating requirements, clarifies enforcement authority, and removes obsolete language.	Tab 2 – Page 219
95	PM606.1-24	Requires platform lifts, wheelchair lifts, and moving walks to be maintained, tested and inspected in accordance with ASME A17.1 and ASME A18.1.	Tab 2 – Page 223

B103.7-24

VCC: 103.7

Proponents: DHCD Staff, representing DHCD (sbco@dhcd.virginia.gov)

2021 Virginia Construction Code

Revise as follows:

103.7 State buildings and structures. This section establishes the application of the USBC to state-owned *buildings* and *structures* in accordance with § 36-98.1 of the Code of Virginia. The USBC shall be applicable to all state-owned *buildings* and *structures*, and to all buildings and structures built on state-owned property, with the exception that §§ 2.2-1159 through 2.2-1161 of the Code of Virginia shall provide the standards for ready access to and use of state-owned *buildings* by the physically handicapped.

Any state-owned *building* or *structure* or *building* or *structure* built on state-owned property for which preliminary plans were prepared or on which *construction* commenced after the initial effective date of the USBC shall remain subject to the provisions of the USBC that were in effect at the time such plans were completed or such *construction* commenced. Subsequent reconstruction, renovation or demolition of such *building* or *structure* shall be subject to the pertinent provisions of this code. Acting through the Division of Engineering and Buildings, the Virginia Department of General Services shall function as the building official for state-owned *buildings* or *structures* and for all buildings and structures built on state-owned property. The department shall review and approve plans and specifications, grant modifications, and establish such rules and regulations as may be necessary to implement this section. It ~~shall~~ may provide for the inspection of state-owned buildings or structures and for all buildings and structures built on state-owned property and enforcement of the USBC and standards for access by ~~the physically handicapped individuals with physical disabilities~~ by delegating inspection and USBC enforcement duties to the State Fire Marshal's Office, to other appropriate state agencies having needed expertise, and to *local building departments*, all of which shall provide such assistance within a reasonable time and in the manner requested. State agencies and institutions occupying *buildings* shall pay to the *local building department* the same fees as would be paid by a private citizen for the services rendered when such services are requested by the ~~department~~ Department of General Services. The ~~department~~ Department of General Services may alter or overrule any decision of the *local building department* after having first considered the *local building department's* report or other rationale given for its decision. When altering or overruling any decision of a *local building department*, the ~~department~~ Department of General Services shall provide the *local building department* with a written summary of its reasons for doing so.

Exception: (Expires July 1, 2027) In accordance with §36-98.1 of the Code of Virginia, enforcement of the USBC for bus shelters to be constructed for transit agencies receiving state funds from the Commonwealth Mass Transit Fund, pursuant to § 33.2-1526.1 of the Code of Virginia, and that do not exceed 256 square feet, shall be delegated to the local building official in lieu of the Department of General Services.

Notwithstanding any provision of this code to the contrary, roadway and railway tunnels and bridges owned by ~~either~~ the Virginia Department of Transportation or the Virginia Passenger Rail Authority shall be exempt from this code. The Virginia Department of General Services shall not have jurisdiction over such roadway and railway tunnels, bridges and other limited access highways provided, however, that the Department of General Services shall have jurisdiction over any occupied *buildings* within any Department of Transportation or the Virginia Passenger Rail Authority rights-of-way that are subject to this code.

Except as provided in subsection E of § 23.1-1016 of the Code of Virginia, and notwithstanding any provision of this code to the contrary, at the request of a public institution of higher education, the Virginia Department of General Services, as further set forth in this provision, shall authorize that institution of higher education to contract with a building official of the *locality* in which the *construction* is taking place to perform any inspection and certifications required for the purpose of complying with this code. The ~~department~~ Department of General Services shall publish administrative procedures that shall be followed in contracting with a building official of the *locality*. The authority granted to a public institution of higher education under this provision to contract with a building official of the *locality* shall be subject to the institution meeting the conditions prescribed in subsection A of § 23.1-1002 of the Code of Virginia.

Note: In accordance with § 36-98.1 of the Code of Virginia, roadway tunnels and bridges shall be designed, constructed and operated to comply with fire safety standards based on nationally recognized model codes and standards to be developed by the Virginia Department of Transportation, in the case of roadway tunnels and bridges, and by the Virginia Passenger Rail Authority, in the case of railway tunnels and bridges, in each case in consultation with the State Fire Marshal. Emergency response planning and activities related to the standards shall be developed by the Department of Transportation or the Virginia Passenger Rail Authority, respectively, and coordinated with the appropriate local officials and emergency service providers. On an annual basis, the Department of Transportation shall provide a report on the maintenance and operability of installed fire protection and detection systems in roadway tunnels and bridges and the Virginia Passenger Rail Authority shall provide a report on the maintenance and operability of installed fire protection and detection systems in its railway tunnels and bridges to the State Fire Marshal.

Reason Statement: This proposal is intended to correlate the USBC with § 36-98.1 of the Code of Virginia. Some changes were a result of [HB285](#) and [HB1425](#) during the 2024 General Assembly session and some were from previous GA sessions.

Cost Impact: The code change proposal will not increase or decrease the cost This proposal will not increase or decrease cost. The text in the new exception is only pointing to existing state law.

VIRGINIA ACTS OF ASSEMBLY -- 2024 RECONVENED SESSION

CHAPTER 806

An Act to amend and reenact § 36-98.1 of the Code of Virginia, relating to Uniform Statewide Building Code; bus shelters.

[H 285]

Approved April 17, 2024

Be it enacted by the General Assembly of Virginia:

1. That § 36-98.1 of the Code of Virginia is amended and reenacted as follows:

§ 36-98.1. State buildings; exception for certain assets owned by the Department of Transportation.

A. The Building Code shall be applicable to all state-owned buildings and structures, and to all buildings and structures built on state-owned property, with the exception that §§ 2.2-1159 through 2.2-1161 shall provide the standards for ready access to and use of state-owned buildings by individuals with physical disabilities.

Any state-owned building or structure, or building or structure built on state-owned property, for which preliminary plans were prepared or on which construction commenced after the initial effective date of the Uniform Statewide Building Code, shall remain subject to the provisions of the Uniform Statewide Building Code that were in effect at the time such plans were completed or such construction commenced. Subsequent reconstruction, renovation or demolition of such building or structure shall be subject to the pertinent provisions of the Building Code.

Acting through the Division of Engineering and Buildings, the Department of General Services shall function as the building official for any state-owned buildings or structures and for all buildings and structures built on state-owned property. The Department shall review and approve plans and specifications, grant modifications, and establish such rules and regulations as may be necessary to implement this section. It may provide for the (i) inspection of state-owned buildings or structures and for all buildings and structures built on state-owned property and (ii) enforcement of the Building Code and standards for access by individuals with physical disabilities by delegating inspection and Building Code enforcement duties to the State Fire Marshal's Office, to other appropriate state agencies having needed expertise, and to local building departments, all of which shall provide such assistance within a reasonable time and in the manner requested. State agencies and institutions occupying buildings shall pay to the local building department the same fees as would be paid by a private citizen for the services rendered when such services are requested by the Department of General Services. The Department of General Services may alter or overrule any decision of the local building department after having first considered the local building department's report or other rationale given for its decision. When altering or overruling any decision of a local building department, the Department of General Services shall provide the local building department with a written summary of its reasons for doing so.

B. Notwithstanding the provisions of subsection A and § 27-99, roadway tunnels and bridges owned by the Department of Transportation shall be exempt from the Building Code and the Statewide Fire Prevention Code Act (§ 27-94 et seq.). The Department of General Services shall not have jurisdiction over such roadway tunnels, bridges, and other limited access highways; provided, however, that the Department of General Services shall have jurisdiction over any occupied buildings within any Department of Transportation rights-of-way that are subject to the Building Code.

Roadway tunnels and bridges shall be designed, constructed, and operated to comply with fire safety standards based on nationally recognized model codes and standards to be developed by the Department of Transportation in consultation with the State Fire Marshal. Emergency response planning and activities related to the standards shall be developed by the Department of Transportation and coordinated with the appropriate local officials and emergency services providers. On an annual basis the Department of Transportation shall provide a report on the maintenance and operability of installed fire protection and detection systems in roadway tunnels and bridges to the State Fire Marshal.

C. Except as provided in subsection E of § 23.1-1016, and notwithstanding the provisions of subsection A, at the request of a public institution of higher education, the Department, as further set forth in this subsection, shall authorize that institution of higher education to contract with a building official of the locality in which the construction is taking place to perform any inspection and certifications required for the purpose of complying with the Uniform Statewide Building Code (§ 36-97 et seq.). The Department shall publish administrative procedures that shall be followed in contracting with a building official of the locality. The authority granted to a public institution of higher education under this subsection to contract with a building official of the locality shall be subject to the institution meeting the conditions prescribed in subsection A of § 23.1-1002.

D. This section shall not apply to the nonhabitable structures, equipment, and wiring owned by a

public service company, a certificated provider of telecommunications services, or a franchised cable operator that are built on rights-of-way owned or controlled by the Commonwealth Transportation Board.

E. Enforcement of the Uniform Statewide Building Code for bus shelters to be constructed for transit agencies receiving state funds from the Commonwealth Mass Transit Fund, pursuant to § 33.2-1526.1, and that do not exceed 256 square feet, shall be delegated to the local building official in lieu of the Department of General Services. The state shall not be liable for any bus shelter built on state-owned property under this subsection.

2. That the provisions of this act shall expire on July 1, 2027.

VIRGINIA ACTS OF ASSEMBLY -- 2024 SESSION

CHAPTER 78

An Act to amend and reenact § 36-98.1 of the Code of Virginia, relating to Uniform Statewide Building Code; Virginia Passenger Rail Authority exemption.

[H 1425]

Approved March 14, 2024

Be it enacted by the General Assembly of Virginia:

1. That § 36-98.1 of the Code of Virginia is amended and reenacted as follows:

§ 36-98.1. State buildings; exception for certain transportation assets.

A. The Building Code shall be applicable to all state-owned buildings and structures, and to all buildings and structures built on state-owned property, with the exception that §§ 2.2-1159 through 2.2-1161 shall provide the standards for ready access to and use of state-owned buildings by individuals with physical disabilities.

Any state-owned building or structure, or building or structure built on state-owned property, for which preliminary plans were prepared or on which construction commenced after the initial effective date of the Uniform Statewide Building Code, shall remain subject to the provisions of the Uniform Statewide Building Code that were in effect at the time such plans were completed or such construction commenced. Subsequent reconstruction, renovation or demolition of such building or structure shall be subject to the pertinent provisions of the Building Code.

Acting through the Division of Engineering and Buildings, the Department of General Services shall function as the building official for any state-owned buildings or structures and for all buildings and structures built on state-owned property. The Department shall review and approve plans and specifications, grant modifications, and establish such rules and regulations as may be necessary to implement this section. It may provide for the (i) inspection of state-owned buildings or structures and for all buildings and structures built on state-owned property and (ii) enforcement of the Building Code and standards for access by individuals with physical disabilities by delegating inspection and Building Code enforcement duties to the State Fire Marshal's Office, to other appropriate state agencies having needed expertise, and to local building departments, all of which shall provide such assistance within a reasonable time and in the manner requested. State agencies and institutions occupying buildings shall pay to the local building department the same fees as would be paid by a private citizen for the services rendered when such services are requested by the Department of General Services. The Department of General Services may alter or overrule any decision of the local building department after having first considered the local building department's report or other rationale given for its decision. When altering or overruling any decision of a local building department, the Department of General Services shall provide the local building department with a written summary of its reasons for doing so.

B. Notwithstanding the provisions of subsection A and § 27-99, roadway and railway tunnels and bridges owned by *either* the Department of Transportation *or the Virginia Passenger Rail Authority* shall be exempt from the Building Code and the Statewide Fire Prevention Code Act (§ 27-94 et seq.). The Department of General Services shall not have jurisdiction over such roadway and railway tunnels, bridges, and other limited access highways; provided, however, that the Department of General Services shall have jurisdiction over any occupied buildings within any Department of Transportation or Virginia Passenger Rail Authority rights-of-way that are subject to the Building Code.

Roadway and railway tunnels and bridges shall be designed, constructed, and operated to comply with fire safety standards based on nationally recognized model codes and standards to be developed by the Department of Transportation, *in the case of roadway tunnels and bridges, and by the Virginia Passenger Rail Authority, in the case of railway tunnels and bridges, in each case* in consultation with the State Fire Marshal. Emergency response planning and activities related to the standards shall be developed by the Department of Transportation or the Virginia Passenger Rail Authority, respectively, and coordinated with the appropriate local officials and emergency services providers. On an annual basis the Department of Transportation shall provide a report on the maintenance and operability of installed fire protection and detection systems in roadway tunnels and bridges and the Virginia Passenger Rail Authority shall provide a report on the maintenance and operability of installed fire protection and detection systems in its railway tunnels and bridges to the State Fire Marshal.

C. Except as provided in subsection E of § 23.1-1016, and notwithstanding the provisions of subsection A, at the request of a public institution of higher education, the Department, as further set forth in this subsection, shall authorize that institution of higher education to contract with a building official of the locality in which the construction is taking place to perform any inspection and certifications required for the purpose of complying with the Uniform Statewide Building Code (§ 36-97 et seq.). The Department shall publish administrative procedures that shall be followed in contracting

with a building official of the locality. The authority granted to a public institution of higher education under this subsection to contract with a building official of the locality shall be subject to the institution meeting the conditions prescribed in subsection A of § 23.1-1002.

D. This section shall not apply to the nonhabitable structures, equipment, and wiring owned by a public service company, a certificated provider of telecommunications services, or a franchised cable operator that are built on rights-of-way owned or controlled by the Commonwealth Transportation Board.

B105.2-24

VCC: 105.2

Proponents: DHCD Staff, representing DHCD (sbco@dhcd.virginia.gov)

2021 Virginia Construction Code

Revise as follows:

105.2 Technical assistants. The building official, subject to any limitations imposed by the *locality*, shall be permitted to utilize *technical assistants* to assist the building official in the enforcement of the USBC. *DHCD* shall be notified by the building official or their designee within 60 days of the ~~employment of, contracting with or termination~~ *separation* of all a *technical assistants* *assistant*.

Note: *Technical assistants* are subject to sanctions in accordance with the *VCS*.

Reason Statement:

The requirement for localities/Building Officials to notify DHCD when they hire a new technical assistant is no longer necessary, as actions required for new technical assistants (creating a DHCD registration system profile and requesting a Learning Center account) can and should be completed by the new employee. There is no special action required on the part of DHCD.

It remains important for localities to notify DHCD when a technical assistant leaves a locality so that the DHCD profile can be updated accordingly. The word "termination" is changed to "separation" to be inclusive or more inclusive of any situation where the employee leaves the locality, including resignation, termination, or retirement. This change does not impact the separate notification requirements for permanent or acting Building Officials in VCC 105.1 (no changes are proposed to that section). "or their designee" is added to recognize that this notification does not need to come from the Building Official directly.

Cost Impact: The code change proposal will not increase or decrease the cost This proposal will not increase or decrease cost.



April 6, 2026

Dear Members of the Board of Housing and Community Development,

I am writing on behalf of the Virginia Building and Code Officials Association (VBCOA) to express our strong support for the Board's ongoing code adoption process and to commend your continued commitment to ensuring a safe, resilient, and sustainable built environment across the Commonwealth.

The development and adoption of building and fire codes is a fundamental responsibility that directly impacts the health, safety, and welfare of our communities. Your deliberate and transparent approach, grounded in stakeholder input and technical expertise, ensures that Virginia's codes remain both effective and practical in their application.

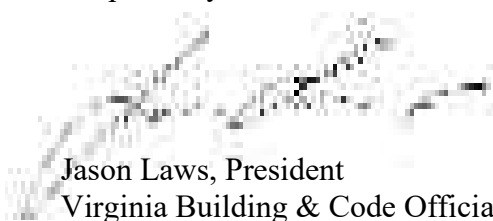
We particularly appreciate the Board's continued engagement with local officials, industry professionals, and community stakeholders throughout this process. This collaborative effort strengthens the final code provisions and promotes consistency in enforcement across jurisdictions, ultimately benefiting citizens, businesses, and code officials alike.

As the built environment continues to evolve in response to emerging technologies, innovative construction methods, and increasing environmental challenges, your leadership is critical in striking the appropriate balance between safety, affordability, and innovation. Your work not only protects lives and property but also supports economic development and long-term community resilience across the Commonwealth.

VBCOA fully supports all consensus proposals as presented, as well as most non-consensus proposals. We respectfully request the Board's careful consideration of proposals B105.2.1-24 and REC-R402.1.2-24 as you finalize your decisions as VBCOA is in full support of both.

Thank you for your dedication, professionalism, and continued service to the Commonwealth of Virginia.

Respectfully,



Jason Laws, President
Virginia Building & Code Officials Association

B108.2-24

VCC: 108.2

Proponents: Dennis Hart, Fairfax County, representing VPMIA/VBCOA (dennis.hart@fairfaxcounty.gov)

2021 Virginia Construction Code

Revise as follows:

108.2 Exemptions from application for permit. Notwithstanding the requirements of Section 108.1 , application for a permit and any related inspections shall not be required for the following; however, this section shall not be construed to exempt such activities from other applicable requirements of this code. In addition, when an *owner* or an *owner's* agent requests that a permit be issued for any of the following, then a permit shall be issued and any related inspections shall be required.

1. Installation of wiring and *equipment* that (i) operates at less than 50 volts, (ii) is for broadband communications systems, (iii) is exempt under Section 102.3(1) or 102.3(4) , or (iv) is for monitoring or automation systems in dwelling units, except when any such installations are located in a plenum, penetrate fire-rated or smoke-protected *construction* or are a component of any of the following:
 - 1.1. Fire alarm system.
 - 1.2. Fire detection system.
 - 1.3. Fire suppression system.
 - 1.4. Smoke control system.
 - 1.5. Fire protection supervisory system.
 - 1.6. Elevator fire safety control system.
 - 1.7. Access or egress control system or delayed egress locking or latching system.
 - 1.8. Fire damper.
 - 1.9. Door control system.
2. One-story detached *structures* used as tool and storage sheds, playhouses or similar uses, provided the building area does not exceed 256 square feet (23.78 m²) and the *structures* are not classified as a Group F-1 or H occupancy.
3. Detached prefabricated *buildings* housing the *equipment* of a publicly regulated utility service, provided the floor area does not exceed 150 square feet (14 m²).
4. Tents or air-supported *structures*, or both, that cover an area of 900 square feet (84 m²) or less, including within that area all connecting areas or spaces with a common means of egress or entrance, provided such tents or *structures* have an occupant load of 50 or less persons.
5. Fences of any height unless required for pedestrian safety as provided for by Section 3306 , or used for the barrier for a *swimming pool*.
6. Concrete or masonry *walls*, provided such *walls* do not exceed 6 feet (1829 mm) in height above the finished grade. Ornamental column caps shall not be considered to contribute to the height of the *wall* and shall be permitted to extend above the 6-foot (1829 mm) height measurement.
7. Retaining *walls* supporting less than 3 feet (914 mm) of unbalanced fill that are not constructed for the purpose of impounding Class I, II or III-A liquids or supporting a surcharge other than ordinary unbalanced fill.
8. *Swimming pools* that have a surface area not greater than 150 square feet (13.95 m²) and are less than 24 inches (610 mm) deep.
9. Signs under the conditions in Section H101.2 of Appendix H.

10. Replacement of above-ground existing LP-gas containers of the same capacity in the same location and associated regulators when installed by the serving gas supplier.
11. Flagpoles 30 feet (9144 mm) or less in height.
12. Temporary ramps serving dwelling units in Groups R-3 and R-5 occupancies where the height of the entrance served by the ramp is no more than 30 inches (762 mm) above grade.
13. *Construction* work deemed by the building official to be minor and ordinary and which does not adversely affect public health or general safety.
14. Ordinary repairs that include the following:
 - 14.1. Replacement of windows and doors with windows and doors of similar operation and opening dimensions that do not require changes to the existing framed opening and that are not required to be fire rated in Group R-2 where serving a single dwelling unit and in Groups R-3, R-4 and R-5.
 - 14.2. Replacement of plumbing fixtures and well pumps in all groups without alteration of the water supply and distribution systems, sanitary drainage systems or vent systems.
 - 14.3. Replacement of general use snap switches, dimmer and control switches, 125 volt-15 or 20 ampere receptacles, luminaires (lighting fixtures) and ceiling (paddle) fans in Group R-2 where serving a single dwelling unit and in Groups R-3, R-4 and R-5.
 - 14.4. Replacement of mechanical appliances, provided there is no refrigerant classification change and such equipment is not fueled by gas or oil in Group R-2 where serving a single-family dwelling and in Groups R-3, R-4 and R-5.
 - 14.5. Replacement of an unlimited amount of roof covering or siding in Group R-3, R-4 or R-5, provided the *building* or *structure* is not in an area where the nominal design wind speed is greater than 100 miles per hour (44.7 meters per second) and replacement of 100 square feet (9.29 m²) or less of roof covering in all groups and all wind zones.
 - 14.6. Replacement of 256 square feet (23.78 m²) or less of roof decking in Group R-3, R-4 or R-5 unless the decking to be replaced was required at the time of original *construction* to be fire-retardant-treated or protected in some other way to form a fire-rated *wall* termination.
 - 14.7. Installation or replacement of floor finishes in all occupancies.
 - 14.8. Replacement of Class C interior *wall* or ceiling finishes installed in Groups A, E and I and replacement of all classes of interior *wall* or ceiling finishes in other groups.
 - 14.9. Installation or replacement of cabinetry or trim.
 - 14.10. Application of paint or wallpaper.
 - 14.11. Other repair work deemed by the building official to be minor and ordinary which does not adversely affect public health or general safety.
15. Crypts, mausoleums and columbaria structures not exceeding 1,500 square feet (139.35 m²) in area if the *building* or *structure* is not for occupancy and used solely for the interment of human or animal remains and is not subject to special inspections.
16. Billboard safety upgrades to add or replace steel catwalks, steel ladders, or steel safety cable.

Exceptions:

1. Application for a permit may be required by the building official for the installation of replacement siding, roofing and windows in *buildings* within a historic district designated by a *locality* pursuant to §15.2-2306 of the Code of Virginia.
2. Application for a permit may be required by the building official for any items exempted in this section that are located in a *special flood hazard area*.

Reason Statement: The 2021 code cycle introduced new and revised code provisions to support the transition away from high global warming potential (GWP) refrigerants, in line with national phasedown efforts mandated by the EPA. One significant change is the requirement that refrigerants for heating and cooling now have a GWP of 700 or less. In residential applications, this typically means the use of refrigerants classified as A2L which are mildly flammable with a lower burning velocity.

Due to the flammable nature of A2L refrigerants, specific safety measures are now required under the code to mitigate associated risks. However, the residential code currently lacks clear language specifying that the replacement of a system's refrigerant with a different classification, especially a shift from non-flammable (A1) to flammable (A2L), is not considered a like-for-like replacement.

This proposal seeks to clarify that a permit is required when a heating or cooling system undergoes a refrigerant conversion. This includes, but is not limited to, replacing an A1 refrigerant with an A2L refrigerant, due to the significant safety implications and code compliance considerations. Such work must be permitted and inspected to ensure proper adherence to the applicable safety provisions in the mechanical code.

Cost Impact: The code change proposal will not increase or decrease the cost. The cost of construction will not increase if this proposal is accepted. This proposal is a clarification that a permit is required for a refrigerant change.

B109.1-24

VCC: 109.1

Proponents: David Beahm, representing Warren County (dbeahm@warrencountyva.gov)

2021 Virginia Construction Code

Revise as follows:

109.1 Submittal of documents. Construction documents shall be submitted with the application for a permit. The number of sets of such documents to be submitted shall be determined by the *locality*. Construction documents for one-and two-family dwellings may have floor plans reversed ~~provided an accompanying site plan is approved.~~**reversed.**

Exception: *Construction* documents do not need to be submitted when the building official determines the proposed work is of a minor nature.

Note: Information on the types of *construction* required to be designed by an *RDP* is included in the "Related Laws Package" available from *DHCD*.

Reason Statement: Reversing floor plans would not necessitate needing a site plan, only changes to the location on the site that would cause a code violation may. The requirement is not something that should be mandated just to reverse the floor plan. Section 109.2 supports this thought process since it states, "When determined necessary by the building official", it does not indicate that it is "required". However, Section 109.1 appears to mandate it when only reversing the floor plan.

Cost Impact: The code change proposal will decrease the cost While the site plan may be required for other departments or agencies the need to provide just to reverse the floor plan could save the cost of having to provide just because the section states that it is provided.

B110.6-24

VCC: 110.6

Proponents: David Beahm, representing Warren County (dbeahm@warrencountyva.gov)

2021 Virginia Construction Code

Revise as follows:

110.6 Abandonment of work. A building official shall be permitted to revoke a permit if work on the site authorized by the permit is not commenced within 6 months after issuance of the permit, or if the authorized work on the site is suspended or abandoned for a period of 6 months after the permit is issued; however, permits issued for plumbing, electrical and mechanical work shall not be revoked if the building permit is still in effect. It shall be the responsibility of the permit applicant to prove to the building official that authorized work includes substantive progress, characterized by approved inspections as specified in Section 113.3 of at least one inspection within a period of 6 months or other evidence that would indicate substantial work has been performed. Upon written request, the building official may grant one or more extensions of time, not to exceed 1 year per extension.

Reason Statement: Section 108.8 where it also indicates that the Building Official can grant an extension, nothing is mentioned about it needing to be requested or in writing or directing you to Section 110.6. Why would you be required to provide a written request to extend a permit and not require a written request when you ask to have a permit canceled as it is in Section 110.9. If anything, it should be reversed given that 110.9 is completely stopping a permit and then having to indicate that the incomplete building or structure shall not be left as an unsafe building or structure.

Cost Impact: The code change proposal will not increase or decrease the cost Should not change the cost unless you consider someone having to supply an actual letter on paper and potentially having to mail it in.

B115.2-24

VCC: 115.2

Proponents: Ron Clements, Chesterfield, representing Building Inspection Department (clementsro@chesterfield.gov)

2021 Virginia Construction Code

Revise as follows:

115.2 Notice of violation. The building official shall ~~is authorized to issue~~ a written notice of violation to the responsible party or permit holder holder, or both, if any violations of this code or any directives or orders of the building official have not been corrected or complied with within a reasonable time. ~~The building official may also issue a notice of violation to other persons found to be responsible in addition to the permit holder. If the violations, directives, or orders involve work without a permit, the notice of violation shall be issued to the~~ responsible party. The notice shall ~~The notice shall~~ reference the code section upon which the notice is based and direct the correction of the violation or the compliance with such directive or order and specify a reasonable time period within which the corrections or compliance must occur. The notice shall be issued by either delivering a copy by mail to the last known address of the *permit holder* or responsible party, by delivering the notice in person, by leaving it in the possession of any person in charge of the premises, or by posting the notice in a conspicuous place if the person in charge of the premises cannot be found. The notice of violation shall indicate the right of appeal by referencing the appeals section. When the *owner* of the *building or structure* or the tenants of such *building or structure* are not the party to whom the notice of violation is issued, then a copy of the notice shall also be delivered to the *owner* or tenants.

Note: A notice of unsafe *building or structure* for *structures* that become unsafe during the *construction* process are issued in accordance with Section 118 .

Reason Statement: This proposal is supported by VBCOA.

This proposal is an effort to promote the “Virginia Way” and grant building officials needed flexibility to resolve issues and gain compliance. Currently the NOV provisions mandate that the building official issue an NOV if code violations have not been corrected, regardless of the circumstances. For instance, if a house is under construction and the contractor goes out of business before completing the house, there may be outstanding code violations, but the house is left in a safe and secure manor while awaiting purchase and/or completion by a new contractor. Why in that case should we be compelled to issue the now out of business contractor an NOV? This proposal does not take away the building official's ability and authority to issue an NOV, it simply gives the building official the flexibility to make decisions based on the specific circumstance. The second part of this proposal is to give the building official the flexibility to determine the appropriate party to whom to issue the NOV. The section was changed from responsible party to permit holder. This proposal retains the reference to the permit holder if that is the appropriate party to receive the NOV but adds the ability for the building official to issue it to the responsible party if not the permit holder. Currently if the responsible party is not the permit holder the code official is mandated to issue the NOV to the permit holder. Additionally, by adding responsible party to the first sentence it relieves the need to for the second and third sentences of the code provision helping to reduce the code section, making it more concise and consistent with the governor's executive order.

Note: A separate code change is being submitted regarding VCC Section 118, which proposes to delete the note to this section. If that code change is approved it causes no effect to this code change and is supported by this proponent.

Cost Impact: The code change proposal will not increase or decrease the cost Who is served a notice does not affect cost of construction.

B115.2(2)-24

VCC: 115.2

Proponents: Ron Clements, Chesterfield, representing Building Inspection Department (clementsro@chesterfield.gov)

2021 Virginia Construction Code

Revise as follows:

115.2 Notice of violation. The building official shall issue a written notice of violation to the *permit holder* if any violations of this code or any directives or orders of the building official have not been corrected or complied with within a reasonable time. The building official may also issue a notice of violation to other persons found to be responsible in addition to the *permit holder*. If the violations, directives, or orders involve work without a permit, the notice of violation shall be issued to the responsible party. The notice shall reference the code section upon which the notice is based and direct the correction of the violation or the compliance with such directive or order and specify a reasonable time period within which the corrections or compliance must occur. The notice shall be issued by either delivering a copy by mail to the last known address of the *permit holder* or responsible party, by delivering the notice in person, by leaving it in the possession of any person in charge of the premises, by electronic service, or by posting the notice in a conspicuous place if the person in charge of the premises cannot be found. The notice of violation shall indicate the right of appeal by referencing the appeals section. When the *owner* of the *building* or *structure* or the tenants of such *building* or *structure* are not the party to whom the notice of violation is issued, then a copy of the notice shall also be delivered to the *owner* or tenants.

Note: A notice of unsafe *building* or *structure* for *structures* that become unsafe during the *construction* process are issued in accordance with Section 118 .

Reason Statement: VBCOA supports this code change.

Electronic service has become an acceptable delivery method for legal documents. This service method was added to Section 111.2 of the Virginia Statewide Fire Prevention Code in the 2021 edition. Section 105.4 of the VPMC does not specify specific delivery methods so electronic service is already acceptable for notices of violation issued under the VPMC.

Cost Impact: The code change proposal will not increase or decrease the cost Method of service delivery does not impact cost of construction.

B118.4-24

VCC: 115.2, ~~118.3-118.4~~, 118.4, 118.5, 118.4.1 (New), 118.6

Proponents: Ron Clements, Chesterfield, representing Building Inspection Department (clementsro@chesterfield.gov)

2021 Virginia Construction Code

Revise as follows:

115.2 Notice of violation. The building official shall issue a written notice of violation to the *permit holder* if any violations of this code or any directives or orders of the building official have not been corrected or complied with within a reasonable time. The building official may also issue a notice of violation to other persons found to be responsible in addition to the *permit holder*. If the violations, directives, or orders involve work without a permit, the notice of violation shall be issued to the responsible party. The notice shall reference the code section upon which the notice is based and direct the correction of the violation or the compliance with such directive or order and specify a reasonable time period within which the corrections or compliance must occur. The notice shall be issued by either delivering a copy by mail to the last known address of the *permit holder* or responsible party, by delivering the notice in person, by leaving it in the possession of any person in charge of the premises, or by posting the notice in a conspicuous place if the person in charge of the premises cannot be found. The notice of violation shall indicate the right of appeal by referencing the appeals section. When the *owner* of the *building* or *structure* or the tenants of such *building* or *structure* are not the party to whom the notice of violation is issued, then a copy of the notice shall also be delivered to the *owner* or tenants.

~~**Note:** A notice of unsafe *building* or *structure* for *structures* that become unsafe during the *construction* process are issued in accordance with Section 118.~~

~~**118.3-118.4 Vacating unsafe the building or structure.** If the building official determines there is actual and immediate danger to the occupants or public, or when life is endangered by the occupancy of an unsafe and the *building* or *structure under construction is occupied*, the building official shall be authorized to order the occupants to immediately vacate the unsafe *building* or *structure*. When an unsafe the *building* or *structure* is ordered to be vacated, the building official shall post a notice at each entrance that reads as follows: "This Building (or Structure) is Unsafe and its Occupancy (or Use) is Prohibited by the Building Official."~~

~~include the order in the correction notice, notice of violation, or issue a separate order.~~

~~After posting, occupancy or use of the unsafe *building* or *structure* s hall be prohibited except when authorized to enter to conduct inspections, make required repairs, or as necessary to demolish the *building* or *structure*.~~

Delete without substitution:

~~**118.4 Posting of notice.** The notice shall be sent by registered or certified mail to the last known address of the responsible party and a copy of the notice shall be posted in a conspicuous place on the premises.~~

~~**118.5 Posting of placard.** In the case of an unsafe *building* or *structure*, if the notice is not complied with, a placard with the following wording shall be posted at the entrance to the *building* or *structure*:~~

~~"This Building (or Structure) is Unfit for Habitation and its Use or Occupancy has been Prohibited by the Building Official."~~

~~After an unsafe *building* or *structure* is placarded, entering the unsafe *building* or *structure* shall be prohibited except as authorized by the building official to make inspections, to perform required repairs, or to demolish the unsafe *building* or *structure*. In addition, the placard shall not be removed until the unsafe building or structure is determined by the building official to be safe to occupy. The placard shall not be defaced.~~

Add new text as follows:

118.4.1 Posting of placard. If the building or structure has been issued an order to vacate a placard shall be posted with the following wording at each entrance to the structure: "THIS STRUCTURE IS AN IMMEDIATE THREAT TO PUBLIC SAFETY AND ITS USE OR OCCUPANCY HAS BEEN PROHIBITED BY THE BUILDING OFFICIAL." After a structure is placarded, entering the structure shall be prohibited except as authorized by the building official to make inspections, to perform required repairs or to demolish the structure. The placard shall not be tampered with, nor shall it be removed until the structure is determined by the building official to no longer be a threat to public safety.

Revise as follows:

~~118.6~~**118.5 Emergency repairs and demolition.** To the extent permitted by the *locality*, the building official may authorize emergency repairs or securing of the site when it is determined that there is an imminent threat to the life and safety of the public. The building official shall be permitted to authorize the necessary work to make the *structure* temporarily safe whether or not legal action to compel compliance has been instituted.

In addition, if the notice of violation included an order to demolish the *structure* and the demolition has not occurred in the time period stipulated, the building official shall be permitted to cause the *unsafe-structure* to be demolished. In accordance with §§ 15.2-906 and 15.2-1115 of the Code of Virginia, the legal counsel of the *locality* may be requested to institute appropriate action against the property *owner* to recover the costs associated with any such emergency repairs or demolition and every such charge that remains unpaid shall constitute a lien against the property on which the emergency repairs or demolition were made and shall be enforceable in the same manner as provided in Articles 3 (§ 58.1-3940 et seq.) and 4 (§ 58.1-3965 et seq.) of Chapter 39 of Title 58.1 of the Code of Virginia.

Note: Building officials and local governing bodies should be aware that other statutes and court decisions may impact on matters relating to demolition, in particular whether newspaper publication is required if the *owner* cannot be located and whether the demolition order must be delayed until the *owner* has been given the opportunity for a hearing.

~~118.7~~**118.6 Closing of streets.** When necessary for public safety, the building official shall be permitted to order the temporary closing of sidewalks, streets, public ways, or premises adjacent to a *structure* that has become a threat to public safety during *construction*.

Reason Statement: This proposal is supported by VBCOA.

In general, this code change removes some remaining old VPMC terminology references to "unsafe buildings" replacing terminology where needed to be consistent with the threat to public safety terminology established in 118.1, and further simplifies and condenses the section.

115.2- The note to Section 115.2 is proposed for deletion as Section 118.3 has the cross reference back to 115 and the note uses the old unsafe terminology. 118.3.1 (proposed 118.4)- The proposed revision removes some references to the old unsafe terminology and the added text clearly states how the order to vacate is to be provided either included with the correction notice or notice of violation, or as a separate order.

Posting 118.3.1, 118.4, 118.5 (proposed 118.4.1) - The current provisions have two different methods of posting the notice to vacate, a hold-over from past VPMC methodology that has also been cleaned up in the VPMC. It is convoluted in that you post a notice to vacate, then if that notice is not complied with you post a placard. The deleted text removes the two posting methods, and the new text gives a single clear requirement for posting the structure with a placard; and the placard terminology has been corrected.

The section has been renumbered to accommodate the proposed changes.

Cost Impact: The code change proposal will not increase or decrease the cost This code change is editorial and affects administrative processes, and does not impact construction or cost of construction.

B119.5-24

VCC: 119.5; VPMC: 107.5

Proponents: Ron Clements, Chesterfield, representing Building Inspection Department (clementsro@chesterfield.gov)

2021 Virginia Construction Code

Revise as follows:

119.5 Right of appeal; filing of appeal application. Any person aggrieved by the *local building department's* application of the USBC or the refusal to grant a modification to the provisions of the USBC may appeal to the *LBBCA*. The applicant shall submit a written request for appeal to the *LBBCA* within 30 calendar days of the receipt of the decision being appealed. The application shall contain the name and address of the *owner* of the *building or structure* and, in addition, the name and address of the person appealing, when the applicant is not the *owner*. A copy of the building official's decision shall be submitted along with the application for appeal and maintained as part of the record. The application shall be marked by the *LBBCA* to indicate the date received. Failure to submit an application for appeal within the time limit established by this section shall constitute acceptance of a building official's decision. Reaffirmation of a prior code decision does not constitute a new application of code subject to appeal.

Note: To the extent that a decision of a building official pertains to amusement devices there may be a right of appeal under the *VADR*.

2021 Virginia Property Maintenance Code

Revise as follows:

107.5 Right of appeal; filing of appeal application. Any person aggrieved by the local enforcing agency's application of this code or the refusal to grant a modification to the provisions of this code may appeal to the *LBBCA*. The applicant shall submit a written request for appeal to the *LBBCA* within 14 calendar days of the receipt of the decision being appealed. The application shall contain the name and address of the *owner* of the *building or structure* and, in addition, the name and address of the person appealing, when the applicant is not the owner. A copy of the *code official's* decision shall be submitted along with the application for appeal and maintained as part of the record. The application shall be marked by the *LBBCA* to indicate the date received. Failure to submit an application for appeal within the time limit established by this section shall constitute acceptance of a *code official's* decision. Reaffirmation of a prior code decision does not constitute a new application of code subject to appeal.

Reason Statement:

This code change is supported by VBCOA.

Is the response to a request to reaffirm a prior application of code, a new application of code, and subject to appeal with a new 30-day window? This has been a debated topic at several TRB meetings. A case I was involved in resulted in a 5-5 split vote that had to be decided by the acting chair. As an example: an inspection is performed and rejected; the contractor that performed the rejected work waits 60 days, then decides to file an appeal. The contractor is informed 30 days has passed so the contractor asks the inspector to come back out and reaffirm that the work is in violation. The inspector re-inspects and reaffirms that it is still in violation just like it was 60 days ago; the contractor then appeals the new decision. This is a simple way to get around the 30-day limit. Another example: Homeowner purchases a house 5 years after the CO was issued and final inspection performed. He asks the inspector to come out and look at what the homeowner thinks is a code violation. The inspector says it was not a violation 5 years ago when it was inspected. The homeowner appeals the new decision.

This code change fixes this loophole and does not allow a request for reaffirmation to be used to reset the 30-day limit. By using the term reaffirmation, this does not limit the ability to appeal the latest decision if it is different from what was initially determined, and thereby being a new application of code.

Reaffirmation dictionary definition- A reassertion or confirmation of a fact or belief. The action of reasserting or confirming something.

Cost Impact: The code change proposal will not increase or decrease the cost This is an administrative change that does not impact

construction cost.

B119.5(1)-24

VCC: 119.5

Proponents: Eric Mays, representing Prince William County (emays@pwcgov.org)

2021 Virginia Construction Code

Revise as follows:

119.5 Right of appeal; filing of appeal application. Any person aggrieved by the *local building department's* application of the USBC or the refusal to grant a modification to the provisions of the USBC may appeal to the *LBBCA*. The applicant shall submit a written request for appeal to the *LBBCA* within 30 calendar days of the receipt of the decision being appealed. When the local governing body has established a fee for the filing of an appeal, the building department shall establish a written policy for the process and methods of payment. The written request for appeal is not considered to be complete and filed until the fee is paid. The application shall contain the name and address of the *owner* of the *building* or *structure* and, in addition, the name and address of the person appealing, when the applicant is not the *owner*. A copy of the building official's decision shall be submitted along with the application for appeal and maintained as part of the record. The application shall be marked by the *LBBCA* to indicate the date received. Failure to submit an application for appeal within the time limit established by this section shall constitute acceptance of a building official's decision.

Note: To the extent that a decision of a building official pertains to amusement devices there may be a right of appeal under the *VADR*.

Reason Statement: The Code Change Proposal is to clarify the requirements related to the timely filing of an appeal. The Virginia Construction Code requires appeals to be submitted within 30 days of the code official's decision and to be heard by the local appeals board within 30 days. The State Technical Review Board recently held a preliminary hearing to determine if an appeal was submitted in a timely manner. The appeal application fee was not paid until approximately 3 months after the filing of the written request to appeal; thereby delaying the appeal process. The current Code does not address any linkage between the appeal application and the payment of an appeal application fee. For consistency, the Code Change Proposal address the VCC, VRC, VMC and SFPC.

DHCD Staff Note: This proposal was initially submitted to include similar changes to the VPMC and SFPC. DHCD Staff split the initially submitted proposal into three separate proposals:

B119.5(1)-24: VCC portion of original proposal (this proposal)

FP112.1-24: SFPC portion of original proposal

PM107.5-24: VPMC portion of original proposal

Cost Impact: The code change proposal will not increase or decrease the cost The code change provides an administrative clarification and does not impact cost.

B202-24

VCC: SECTION 202 (New)

Proponents: Allison Cook, representing Arlington, Virginia (acook1@arlingtonva.us); Eric Mays, representing Prince William County (emays@pwcgov.org); Ron Clements, Chesterfield, representing Building Inspection Department (clementsro@chesterfield.gov); Dan Willham, representing Fairfax County, VA (daniel.willham@fairfaxcounty.gov)

2021 Virginia Construction Code

Add new text as follows:

DEAD END CORRIDOR. A portion of a corridor in which the travel to an exit is in one direction only.

Reason Statement: At the national level, there are multiple interpretations of what is a dead end and how to measure it because is no definition in the code currently. This code change seeks to add to the code the way dead-ends have been consistency reviewed across Virginia to ensure ongoing consistent reviewed and inspected.

Cost Impact: The code change proposal will not increase or decrease the cost This is an existing view of how dead-ends have been reviewed since BOCA. So, there should not be an increase or decrease in cost.

B302.1-24

VCC: 302.1,

Proponents: Kenney Hackworth, representing City of Newport News

2021 Virginia Construction Code

Revise as follows:

302.1 Occupancy classification. Occupancy classification is the formal designation of the primary purpose of the building, structure or portion thereof. Structures shall be classified into one or more of the occupancy groups specified in this section based on the nature of the hazards and risks to building occupants generally associated with the intended purpose of the building or structure. An area, room or space that is intended to be occupied at different times for different purposes shall comply with all applicable requirements associated with such potential multipurpose. Structures containing multiple occupancy groups shall comply with Section 508. Where a structure is proposed for a purpose that is not specified in this section, such structure shall be classified in the occupancy it most nearly resembles based on the fire safety and relative hazard. Occupied roofs shall be classified in the group that the occupancy most nearly resembles, according to the fire safety and relative hazard, and shall comply with Section 503.1.4.

1. Assembly (see Section 303): Groups A-1, A-2, A-3, A-4 and A-5.
2. Business (see Section 304 ~~and 313 for *State Regulated Care Facilities (SRCFs)*~~): Group B.
3. Educational (see Section 305): Group E.
4. Factory and Industrial (see Section 306): Groups F-1 and F-2.
5. High Hazard (see Section 307): Groups H-1, H-2, H-3, H-4 and H-5.
6. Institutional (see Sections 308 and 313 for ~~*State Regulated Care Facilities (SRCFs)*~~: SRCFs).
7. Mercantile (see Section 309): Group M.
8. Residential (see Sections 310 and 313 for *SRCFs*): Groups R-1, R-2, R-3, R-4 and R-5.
9. Storage (see Section 311): Groups S-1 and S-2.
10. Utility and Miscellaneous (see Section 312): Group U.

~~304.1.1 Day support and day treatment facilities.~~ ~~Day support and day treatment facilities licensed by the Virginia Department of Behavioral Health and Developmental Services shall be permitted to be classified as Group B occupancies provided all of the following conditions are met:~~

- ~~1. Participants who may require physical assistance from staff to respond to an emergency situation shall be located on the level of exit discharge.~~
- ~~2. Any change in elevation within the exit access on the level of exit discharge shall be made by means of a ramp or sloped walkway.~~
- ~~3. Where the facilities are located more than two stories above grade, an automatic sprinkler system shall be provided throughout the building in accordance with Section 903.3.1.1.~~

313.6 Day support and day treatment facilities.

Day support and day treatment facilities licensed by the Virginia Department of Behavioral Health and Developmental Services shall be permitted to be classified as Group B occupancies provided all of the following conditions are met:

1. Participants who may require physical assistance from staff to respond to an emergency situation shall be located on the level of exit discharge.

2. Any change in elevation within the exit access on the level of exit discharge shall be made by means of a ramp or sloped walkway.
3. Where the facilities are located more than two stories above grade, an automatic sprinkler system shall be provided throughout the building in accordance with Section 903.3.1.1.

Reason Statement: To place all state regulated care facilities into Section 313. This specific code section was not listed there, but is a SRCF regulated by the VDBHDC

Cost Impact: The code change proposal will not increase or decrease the cost The proposed change has no impact on the cost, it is clerical in nature

B406.2.7-24

IBC: 406.2.7.1 (New), 406.2.7.2 (New), 406.2.7.3 (New)

Proponents: Ernest Little, Retired Prince William County Department of Fire and Rescue, representing Myself (prwmfm4@aol.com)

2024 International Building Code

Add new text as follows:

406.2.7.1 Emergency disconnecting means. Electric vehicle charging systems shall be provided with the disconnecting means required by NFPA 70 and that device or an additional disconnecting means shall also comply with the following as an emergency disconnect except where located at one and two family dwellings:

1. The emergency disconnect shall be installed in a readily accessible location no less than 20 feet (6.0m.) nor more than 100 feet (30.0 m.) from the electric vehicle charging station(s) and in a clear line of sight of the equipment. Where additional charging stations are more than 100 feet (30.0 m.) away, signage shall be provided to indicate the location of the associated emergency disconnect(s).
2. The emergency shutoff shall be marked "EV CHARGER EMERGENCY DISCONNECT" AND "ELECTRIC VEHICLES WILL REMAIN ENERGIZED".
3. The emergency disconnect shall immediately disconnect power to all electric vehicle charging stations within sight of the emergency disconnect or identify which charging stations are controlled.
4. The emergency disconnect shall be of a manual reset type and permitted to be lockable open in accordance with NFPA 70.

406.2.7.2 Impact protection. Where subject to motor vehicle impact, or other physical damage, electric vehicle charging systems shall be protected in accordance with Section 312 of the International Fire Code.

406.2.7.3 Emergency procedures. Emergency procedures shall be posted on an approved sign at an approved and conspicuous location at the electric charging station(s) and shall read:

IN CASE OF FIRE

1. IF POSSIBLE, SHUT OFF AND UPLUG THE VEHICLE
2. USE THE EV CHARGER EMERGENCY DISCONNECT TO DISCONNECT POWER
3. REPORT THE INCIDENT TO THE FIRE DEPARTMENT

FIRE DEPARTMENT PHONE NUMBER: _____

4. FACILITY ADDRESS: _____

Reason Statement: The Virginia Construction (VCC) and Virginia Statewide Fire Prevention Code (SFPC) lack an emergency disconnecting requirement similar to that required by NFPA 30A at motor fuel dispensing facilities. Charging stations supplying DC power to electric vehicles (EVs) are available to the general public along major highways and have become more available in public parking garages, public parking lots, and workplace parking lots. When an emergency occurs at one of these EV charging stations, first responders need a quick means to disconnect power in order to mitigate the emergency safely. The proposed amendments are intended to correct a previously unknown existing hazard. The proposed amendments intend to offer the public a benefit that would lessen a recognized (known) hazard or ameliorate a continuing dangerous condition or situation.

The 2024 International Fire Code references the National Fire Protection Association (NFPA) 2023 National Electrical Code (NEC) which had a tentative interim amendment (TIA) regarding vehicle impact protection and emergency shutoffs. This TIA was considered by the National Fire Protection Association in development of the 2026 NEC) and emergency disconnects for electric vehicle charging stations

were added to the code requirements. The 2026 NEC will be published in October of 2025 however will not be the referenced NEC for the VCC thus the reference to this 2026 code section is not contained in the amendment to avoid the need to reference two different editions of the NEC. The impact protection provision of the amendments brings an existing requirement of the NEC for electrical equipment exposed to vehicle impact into the VCC to make the requirement easier to access for installers of electric vehicle charging equipment.

Currently, shut down controls are required for both refueling stations and DC charging stations; however, access to these shutdowns is quite different and create unnecessary and potentially lethal intervention hazard delays for first responders who are called to address emergencies at DC charging stations.

Concerns:

- (1) First responders, who respond to emergencies at DC Charging stations do so in an electrical energy environment that can exceed normal household voltages. These first responders are not trained, nor equipped, to operate in electrical hazard areas without a shut off or lock out device being available.
- (2) First responders do not have tools capable of ensuring that the DC energy hazard has been controlled. Unlike AC hazards, where tools have been made available to first responders that allow them to gather some information about the energy status of electrical equipment, there are very few tools available to first responders for ascertaining DC energy status.
- (3) While not required at EV charging stations, some vendors are installing emergency shut offs and they are being installed in locations that are not safe or readily accessible for first responders. Some are being installed at the actual charging device location rather than at a safe location away from the hazard area. While well intended, the installation of these devices requires first responders to work in the hazard area to operate them. NFPA 30A requires that the e-stop be located at least 20 feet away from the hazard.
- (4) EV Charging station electrical shut offs are not labelled and are not readily accessible and Energy disconnects (per code) are allowed to be in locked cabinets which are often not labeled. This creates confusion and frustration for first responders attempting to address the electrical hazards present. Since emergency shut offs have been present at refueling stations since 1984, first responders look for emergency shut offs where they have seen at refueling stations.

Cost Impact: The code change proposal will increase the cost. There will be cost associated with the installation of impact protection, disconnecting means, and the required materials. The cost could be offset by the reduction in damaged components due to vehicle impact and the possible injury to first responders due to exposure to live electrical components in mitigating events associated with malfunction or misuse of electric vehicle charging equipment.

Attached Files

- **commercial-ev-charging-station.jpg**
<https://va.cdpaccess.com/proposal/1381/1970/files/download/944/>
- **IMG_3797.jpg**
<https://va.cdpaccess.com/proposal/1381/1970/files/download/943/>
- **TOIBIB97Q7aDANnGZA0xeQ - no impact protection provided.jpeg**
<https://va.cdpaccess.com/proposal/1381/1970/files/download/942/>
- **burning-electric-car-after-catching-fire-while-charging-at-a-station.png**
<https://va.cdpaccess.com/proposal/1381/1970/files/download/941/>
- **charging-station-damaged-1100x825.jpg**
<https://va.cdpaccess.com/proposal/1381/1970/files/download/940/>











Public Comments (PCH) for: B406.2.7-24

Discussion by Mal Skowron

Oct 3, 2025 0:18 UTC

While Tesla understands the intent of this code proposal in keeping first responders and the public safe in the unlikely event of an electrical fire involving electric vehicle service equipment (EVSE), we are concerned that the proposed code language has not been thoroughly vetted and would lead to unintended consequences that would severely limit the deployment of charging infrastructure in the state. The reason statement notes that emergency shutoffs are being considered by the 2026 NEC; given that the technical substantiation for emergency shutoffs is currently under review at the national code level, it would be imprudent for Virginia to adopt code language that gets ahead of the 2026 NEC and may be invalidated by the preeminent codes and standards making body.

This proposal is not justifiable on the basis of safety. The reason statement notes that Virginia code lacks an emergency disconnecting requirement similar to that required by NFPA 30A at motor fuel dispensing facilities. However, an EV charging site is not comparable to a gas station. Pump-level emergency shut-offs at liquid fueling stations stop the flow of flammable and combustible fuels to prevent further fire propagation. Reducing the spill of hazardous materials increases the ability for emergency responders to suppress and contain a fire. With EV charging, no such liquid flow exists; an emergency shutoff will not increase the ability to suppress and contain a fire incident.

This proposal is also redundant with section 625.43 Equipment Disconnects of NFPA, which already requires the installation of disconnecting means in readily accessible locations where equipment is rated more than 60A or more than 150 volts to ground. To disconnect power to a site, first responders should cut the lock on the electrical switchgear visible on-site, locate the main feeder breaker, turn the handle to the OFF position, and verify the absence of AC hazard sources with available tools. For these reasons, this proposal is unnecessary.

Proposal # 1381

B406.2.7(1)-24

IBC: 406.2.7, NFPA Chapter 35 (New), UL Chapter 35 (New)

Proponents: Andrew Milliken, representing Stafford County Fire Marshal's Office (amilliken@staffordcountyva.gov)

2024 International Building Code

Revise as follows:

406.2.7 Electric vehicle charging stations and systems. Where provided, electric vehicle charging systems shall be installed in accordance with NFPA 70. Electric vehicle charging system equipment shall be *listed* and *labeled* in accordance with UL 2202 or UL2750. Electric vehicle supply equipment shall be *listed* and *labeled* in accordance with UL 2594. Accessibility to *electric vehicle charging stations* shall be provided in accordance with Section 1107. Parking garages with electric vehicle charging stations shall comply with sections 6.4 and 6.5 of NFPA 88A.

Add new text as follows:

NFPA

National Fire Protection Association
1 Batterymarch Park
Quincy, MA 02169-7471

88A-23 Standard for Parking Structures

Revise as follows:

UL

UL LLC
333 Pfingsten Road
Northbrook, IL 60062

2750-23 Wireless Power Transfer Equipment for Electric Vehicles

Reason Statement: DHCD Staff Note: UL 2750-23 is a new standard, although the proposal states "Revise as Follows".

This proposal provides additional installation requirements for certain electric vehicle charging stations to address emerging fire safety concerns identified in a recent Fire Protection Research Foundation reports.

First, the proposal adds a reference to UL 2750 which is the standard related to wireless power transfer equipment for electric vehicles. It is essential that the building code reference standards keep pace with the rapidly evolving technology for electric vehicle charging systems. Second, the proposal adds a requirement to ensure that fire protection features (fire sprinklers and standpipes) are provided when electric vehicle charging stations are provided in parking garages. The new language simply references requirements found in the latest edition of NFPA88A (National Fire Protection Association Standard for Parking Structures) which was recently updated to address concerns identified in recent research reports. Specifically, this proposal ensures that fire sprinkler systems are present (NFPA 88A, 6.4) and that standpipes (NFPA 88A, 6.5) are available for fire department operations below grade. The full text of these sections is provided below for reference.

<https://www.nfpa.org/news-blogs-and-articles/blogs/2024/07/12/parking-garages-and-evs>

Although the frequency of electric vehicle fires has not been shown to be significantly different than other vehicle fires, the impact of these fires to the fire service and ultimately the community is exponentially different. For example, where the water required to extinguish a traditional internal combustion engine vehicle fire is approximately 500 gallons typically from a single fire apparatus and concluded in about 30 minutes, the water needed for an electric vehicle fire is measured in thousands of gallons involving multiple apparatus for at least 60-90 minutes and often much more. Electric vehicle fires, particularly within parking garages, present challenges to containment and control of the incident. Depending on the circumstances, it often can be best practice to let an electric vehicle fire continue to burn once the batteries are in thermal runaway however this is almost never an option within parking garages due to exposure of the structure, adjacent vehicles and limited ventilation. Also, electric vehicle fires can require the vehicle to be rotated or relocated to allow firefighters to direct hose streams on the batteries or to avoid the fire spreading to other adjacent vehicles and combustible materials but that is usually difficult or even impossible within parking garages. If you haven't experienced a typical electric vehicle fire, the following video provides an excellent perspective on these types of incidents.

<https://youtu.be/J0gRFIbsx1E>

As the installation of electric vehicle charging stations continues to grow throughout Virginia, it is critical that fire safety concerns, particularly those associated with parking garages, be adequately addressed.

NFPA 88A (2023) Standard for Parking Structures:

6.4 Sprinkler Systems.

6.4.1 Automatic sprinkler systems shall be installed in all parking structures in accordance with NFPA 13 and NFPA 13R as applicable.

6.4.2 Automatic sprinkler systems shall be inspected, tested, and maintained in accordance with NFPA 25.

6.5 Standpipes.

6.5.1 Parking structures exceeding a height of 50 ft (15 m) or having parking levels below grade shall be provided with a Class I standpipe system in accordance with NFPA 14.

6.5.2 Class I standpipe systems of the manual dry type shall be permitted in open parking structures.

6.5.3 Standpipe systems shall be inspected, tested, and maintained in accordance with NFPA 25.

Cost Impact: The code change proposal will increase the cost. Although this proposal may increase the overall cost of installation of some electric vehicle charging stations when located within parking garages, many if not most new parking garage projects will already likely comply with these fire protection requirements. For example, nearly all enclosed or below grade parking garages require fire sprinklers and even open parking garages already require fire sprinklers when the total [fire] area exceeds 48,000 square feet.



HOME



Today's vehicles contain roughly three times the amount of plastics that they did in the 1970s.

Research Insights: Fire Safety for Electric Vehicles and Other Modern Vehicles in Parking Structures

By Victoria Hutchison Lutz

12-Jul-2024

Over the past five years, the electric vehicle (EV) market has seen substantial growth, with global sales reaching 10 million in 2023 and EV market share rising to 14 percent. Advances in battery technology, falling costs, supportive government policies, and expanded charging infrastructure have driven this growth. Major automakers have committed to EVs, offering more model options, while consumer awareness and demand for sustainable transport have surged, particularly in Europe, China, and North America.

Recent changes in vehicle design, materials, and motor technologies, however, have raised concerns in the fire protection community. Vehicles have become heavier and now incorporate substantially more plastic components. The shift to battery electric vehicles (BEVs), hydrogen fuel cells, and hybrid vehicles also introduces different fire hazards compared to traditional internal combustion engine (ICE) vehicles, potentially requiring modifications to traditional fire protection design strategies and firefighting tactics applied in parking structures.

While vehicle fires are common, large-scale parking garage fires are rare but can cause significant economic losses, as seen in incidents at Liverpool's Echo Arena, Stavanger Airport, and Luton Airport. In August, a fire involving an EV in a parking garage in South Korea damaged hundreds of vehicles and forced nearby residents to evacuate, triggering debate over whether EVs should be allowed in the country's underground parking garages.

RELATED: Explore training from NFPA related to alternative fuel vehicles

These events highlight the need to reclassify vehicle fire hazards and reevaluate recommended protection measures. As a result, stakeholders have been coming to NFPA® and the Fire Protection Research Foundation (FPRF), the research affiliate of NFPA, with questions around the fire safety impact of EVs in parking structures. Some of the most frequently asked questions include:

- How do modern vehicles differ from legacy vehicles? How have they changed?
- How does the fire hazard of an EV compare to an ICE vehicle?
- Is the current protection guidance in applicable codes and standards adequate?

To answer these questions, the Fire Protection Research Foundation conducted a Phase II research study, following up on a preliminary literature review from 2020, to provide data and insight to these questions and identify knowledge gaps that needs to be filled through an experimental test program. So, let’s dig into some of our key findings.

How do modern vehicles differ from legacy vehicles? How have they changed?

In 2021, the average vehicle contained 411 lbs (186 kg) of plastics, constituting 9.6 percent of a vehicle’s total weight. In the 1970s, plastics made up less than 3 percent of the average vehicle’s weight.

This increase in plastic content has the potential to enhance the combustible energy in a fire, potentially leading to higher heat release rates, longer burning durations, and greater risk of fire spread in parking garages compared to older vehicles. Thus, fire test data from older vehicles may not fully represent modern vehicles, which have a higher plastic content. This difference could impact the applicability of the test results to current vehicle fire scenarios and design fires.

How does the hazard of an EV compare to an ICE vehicle?

The heat release rate is the most common measure used to characterize the amount of energy a fire produces over time, or more simply, the speed at which a fire burns fuel and releases heat. While experimental test results show that an ICE vehicle fire and an EV fire may have different peak heat release rates, their total heat release is similar for both vehicle types, meaning they pose a similar overall hazard.

While ignition method, location, vehicle age and composition, ventilation conditions, and other factors have a significant influence on fire development and overall hazard, review of the available testing literature has found vehicle fires, both ICEVs and BEVs, too often exceed a heat flux threshold of 25 kW/m² (which is the exposure threshold for ignition of nearby combustibles), which suggests a high risk of fire spread to adjacent vehicles without sprinkler protection, regardless of these conditions.

A summary of key differences between EVs and ICEVs are provided in the table below.

	EV	ICE
Fuel Source	Lithium-ion batteries	Gasoline
Fire Causes	Short circuit, puncture, overheating, overcharging, over-discharging	Fuel or oil leak, overheating, worn out parts, loose electrical components
Suppression Time	~60–90+ min	~30 min
Water Usage (manual)	Reports of up to thousands of gallons of water have been used, requiring sustained water supply	~500 gallons

Reignition Potential	Likely, and fairly common	Rare
Fire Size	Avg Heat Release Rate: 1.5–8⁺ MW Avg Total Heat Release: 5.9 GJ Can be large if the initiating vehicle fire is allowed to propagate to an adjacent vehicle, but fires can typically be contained to one vehicle with protection by automatic sprinklers or intervention by the fire service prior to spread	Avg Heat Release Rate: 6.5–8 MW Avg Total Heat Release: 5.9 GJ Can be large if the initiating vehicle fire is allowed to propagate to an adjacent vehicle, but fires can typically be contained to one vehicle with protection by automatic sprinklers or intervention by the fire service prior to spread
Toxicity of Runoff	Water runoff has a pH of 7.3–7.7 Copper, antimony, and higher concentrations of manganese, nickel, cobalt, hydrogen fluoride, and lithium	Water runoff has a pH of 2.6–2.8 Higher concentrations of lead, copper, polycyclic aromatic hydrocarbons, and volatile organic compounds, testing showed higher toxicity towards aquatic species
Special Post-Fire Considerations	Often towed and recommended to be placed 50 ft away from all surroundings (due to reignition risk)	Vehicles/engines should be inspected to see how much damage was done to determine if repairs can occur
Additional Hazards	Stranded energy (reignition risk), electrocution risk, handling by secondary responders, projectiles and explosions, toxic gas release	Toxic gas release, lots of combustible fuel still accessible to the fire (i.e., a full gas tank)

Is the current protection guidance in applicable codes and standards appropriate?

The codes and standards related to parking garage fire protection have evolved. Per NFPA 88A, Standard for Parking Structures, sprinkler protection is now required in all parking structures. Additionally, many codes and standards have increased the required sprinkler density for parking garages; most notably NFPA 13, Standard for the Installation of Automatic Sprinkler Systems, has changed the classification of parking garages from Ordinary Hazard Group 1 (~0.15 gpm/ft²) to Ordinary Hazard Group 2 (~0.2 gpm/ft²).

The NFPA review of the codes and standards, though, revealed that there are very few national requirements for fire protection in automated parking structures or vertical stackers over two-tiers high. This has led some municipalities to enact their own to

create local fire protection requirements for these types of parking structures.

The literature review identified a few vehicle fire tests that included sprinklers and aimed to determine if sprinklers could prevent fire spread to adjacent vehicles. One study by Arvidson and Westlund used sprinklers with a density of 10 mm/minute, between Ordinary Hazard Group 2 and Extra Hazard Group 1 design densities in the U.S. They measured heat flux at 500 mm (1.64 ft) for four tests, with two ICEVs and two BEVs, and found that the BEV fires did not spread to neighboring vehicles. Another study by the Building Research Establishment (BRE) used a sprinkler system with a British Standard Ordinary Hazard Group 2 density (which is between Light and Ordinary Hazard Group 1 density in the U.S.) and found that the vehicle fire did not spread to nearby vehicles under that protection. However, a similar test without sprinklers showed fire spreading to all three vehicles.

Data on sprinkler effects on vehicle fires and effective density to prevent spread in parking garages is limited. However, existing data indicates that sprinklers can control fires and limit them to the initial vehicle, though the optimal design density is still unknown. More research is needed to properly design sprinkler systems to prevent vehicle-to-vehicle fire spread in parking garages.

Next steps

Through the comprehensive review and analysis of parking structure characteristics, fire statistics, incident case studies, evolution of vehicle composition, codes and standards, and the latest full-scale fire test data, three key gaps emerged:

- **NFPA 13 Hazard Classification for Modern Vehicles:** The current NFPA 13 hazard classification for modern vehicles in parking garages lacks testing data to support its accuracy. Despite evolving codes and standards requiring sprinklers in new parking garages and increasing the necessary sprinkler water density, the technical justification for these water density selections remains unclear.
- **Worst-Case Scenario Conditions:** The specific conditions leading to the worst-case scenario for vehicle fires in parking garages are not well understood. Variables such as vehicle size and type, fire ignition location, sprinkler placement, window positions, and other configuration-specific details can significantly affect fire development and spread.
- **Fire Safety in Vertical Vehicle Stackers and Automated Parking Structures:** There is a notable deficiency in experimental data regarding fire safety in modern vehicles parked in vertical stackers and automated parking structures. Existing data and guidance on proper fire safety measures in these types of parking facilities are extremely limited.

To address these knowledge gaps, a testing plan was developed, outlining a test matrix, necessary data, and evaluation criteria. The Fire Protection Research Foundation's proposed testing initiatives aim to enhance our understanding of fire hazards in parking structures and improve fire protection strategies, ultimately ensuring safer environments as vehicle technologies and parking facility designs continue to evolve.

To learn more, [download the final report](#).

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Research Project Manager

Victoria Hutchison Lutz

NFPA Research Project Manager

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Newest

J

Josphine9 months ago

Interesting read on EV safety in parking garages—wondering how places like Ezy Book Airport Parking are adapting to these fire risks as EV adoption grows.

0

0

Reply

J

Jim wilson12 months ago

I believe within 99% what's causing these fires on level two chargers it's a lengthy explanation so give me a call and I'll explain to you. 703-297-5218.

0

0

Reply

D

Duane Perry1 year ago

My name is Duane Perry, and I am currently the Fire Marshal for the Washington Metropolitan Area Transit Authority which covers Washington DC, Maryland, and Virginia. Our current problems or issues are much, much greater. These concerns are amplified greatly with the introduction of commercial vehicles such as passenger buses, the large recharging facilities, and the interface of solar panels. As a mass transit agency, we operate hundreds of buses which are in the process of being modified to a hybrid system or completely replaced with battery electric buses. The biggest issue again, is the lack of infrastructure and the failure of code to keep up with the changing times.

Question #1:
I understand that either immersing a BEV in a tank of water or rolling it on its side to spray the battery pack from the vehicle bottom are the most effective ways of extinguishing a BEV fire and cooling the battery. These are not options in an underground parking structure. Should sprinklers be installed in the floors?

Question #1 - Response.
I believe we are missing several key issues that deal with infrastructure. First, why just an underground facility? Second, why not an open parking structure that is 11 or 12 stories high with designated EV parking areas? I would recommend staying with NFPA 88, the various building codes, and ensuring the appropriate safety measures are added. For an example, does the ventilation system need to be increased or changed to a hazardous material exhaust. As for a sprinkler system in the floor, i believe we would find out that the system would be ineffective and the maintenance and upkeep would not be feasible.

Question #2:
How is hydroflouric acid (hydrogen flouride gas + water) to be contained (to prevent environmental damage) and disposed of? What of its toxic and corrosive effects on people and building structure?

Question #2 - Response.

There is no physical way to contain the acid or gas during a fire event. Most codes identify the property owner as the responsible person/party responsible for disposal. As for the toxic and corrosive effects on people or the structure, there has not been enough study and analysis for anyone to come to a conclusion. There are too many variables.

Question #3:

What about the structural integrity of the building above the underground parking structure if there is a BEV fire (degradation of concrete due to prolonged and/or high heat associated with BEV fires)? Those of us living in apartments would hate to become homeless en mass, and for an extended period of time (years to demolish and rebuild).

Question #3 - Response

Very good question. That may happen anyway due to the fire, depending on the variables. Another through would be affect the water weight has on the structure. My recommendation would be that all EV parking would be at grade level or 1 or 2 stories above. Just a through.

Duane

571-233-5280

dtperry@wmata.com

👍 0 🗨️ 0 Reply

M **M. Perry** 1 year ago

I understand that either immersing a BEV in a tank of water, or rolling it on its side to spray the battery pack from the vehicle bottom are the most effective ways of extinguishing a BEV fire and cooling the battery. These are not options in an underground parking structure. Should sprinklers be installed in the floors?

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👍 0 🗨️ 0 Reply



B407.4.1.1-24

VCC: 407.4.1.1; IBC: [BE] 407.4.1.1; VCC: 1010.2.14; IBC: 1010.2.13

Proponents: Eric Mays, representing Prince William County (emays@pwcgov.org)

2021 Virginia Construction Code

Delete without substitution:

407.4.1.1 Special locking arrangement. Means of egress doors shall be permitted to contain locking devices restricting the means of egress in areas in which the clinical needs of the patients require restraint of movement, where all of the following conditions are met:

- ~~1. The locks release upon activation of the fire alarm system or the loss of power.~~
- ~~2. The building is equipped with an approved automatic sprinkler system in accordance with Section 903.3.1.1.~~
- ~~3. A manual release device is provided at a nursing station responsible for the area.~~
- ~~4. A key-operated switch or other manual device is provided adjacent to each door equipped with the locking device. Such switch or other device, when operated, shall result in direct interruption of power to the lock—independent of the control system electronics~~
- ~~5. All staff shall have keys or other means to unlock the switch or other device or each door provided with the locking device.~~

2024 International Building Code

[BE] 407.4.1.1 Locking devices. Locking devices that restrict access to a care recipient's room from the *corridor* and that are operable only by staff from the corridor side shall not restrict the *means of egress* from the care recipient's room.

Exceptions:

1. This section shall not apply to rooms in psychiatric treatment and similar care areas.
2. Locking arrangements in accordance with Section 1010.2.13.

2021 Virginia Construction Code

Delete without substitution:

~~**1010.2.14 Controlled egress doors in Groups I-1 and I-2.** (Section deleted.)~~

2024 International Building Code

1010.2.13 Controlled egress doors in Groups I-1 and I-2. Controlled egress electrical locking systems where egress is controlled by authorized personnel shall be permitted on doors in the means of egress in Group I-1 or I-2 occupancies where the clinical needs of *persons* receiving care require their containment. Controlled egress doors shall be permitted in such occupancies where the *building* is equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or an *approved automatic smoke detection system* installed in accordance with Section 907, provided that the doors are installed and operate in accordance with all of the following:

1. The door's electric locks shall unlock on actuation of the *automatic sprinkler system* or *automatic smoke detection system* allowing immediate free egress.
2. The door's electric locks shall unlock on loss of power to the electrical locking system or to the electric lock mechanism allowing immediate free egress.

3. The electrical locking system shall be installed to have the capability of unlocking the electric locks by a switch located at the *fire command center*, a nursing station or other *approved* location. The switch shall directly break power to the electric lock.
4. A *building* occupant shall not be required to pass through more than one door equipped with a controlled egress locking system before entering an *exit*.
5. The procedures for unlocking the doors shall be described and *approved* as part of the emergency planning and preparedness required by Chapter 4 of the *International Fire Code*.
6. All clinical staff shall have the keys, codes or other means necessary to operate the controlled egress electrical locking systems.
7. Emergency lighting shall be provided at the door.
8. The electromechanical or electromagnetic locking device shall be *listed* in accordance with either UL 294 or UL 1034 .

Exceptions:

1. Items 1 through 4 shall not apply to doors to areas occupied by *persons* who, because of clinical needs, require restraint or containment as part of the function of a psychiatric or cognitive treatment area.
2. Items 1 through 4 shall not apply to doors to areas where a *listed* egress control system is utilized to reduce the risk of child abduction from nursery and obstetric areas of a Group I-2 *hospital*.

Reason Statement: Virginia added section 407.4.1.1 to the 2003 Virginia Construction Code (VCC) because the IBC had not yet addressed this condition. In the 2009 IBC the condition was addressed by adding Section 1008.1.9.6. However, Virginia did not revisit the 2009 IBC code change, and the new IBC section continued to be deleted from Virginia's base documents during the last four code adoption cycles.

This code change proposal is intended to remove the 2003 VCC amendment, and return to the 2024 IBC code language. It is also important to note that the IBC's current language more fully addresses the clinical needs for facilities providing care for mental illness, dementia, and Alzheimer's disease by providing for the occupant restraint and containment when medically required to keep the patient and others safe from harm.

Clarification Notes:

#1 The 2021 VCC, Section 407.4.1.1 Special Locking Arrangement is being proposed to be replaced by the 2024 IBC, Section 407.4.1.1 Locking Devices (included in the proposal for context).

#2 The 2021 VCC, Section 1010.2.14 Controlled Egress Doors in Groups I-1 and I-2 is being proposed to be replaced by the language found in the 2024 IBC Section 1010.2.13 Controlled Egress Doors in Groups I-1 and I-2 (included in the proposal for context).

Cost Impact: The code change proposal will not increase or decrease the cost Repealing or removing the 2003 Virginia Construction Code Amendment and moving forward with 2024 IBC requirements has negligible impact on cost.

B509.1-24

VCC: [F]TABLE 509.1

Proponents: Andrew Milliken, representing Stafford County Fire Marshal's Office (amilliken@staffordcountyva.gov)

2021 Virginia Construction Code

Revise as follows:

[F]TABLE 509.1 INCIDENTAL USES

ROOM OR AREA	SEPARATION AND/OR PROTECTION
Furnace room where any piece of equipment is over 400,000 Btu per hour input	1 hour or provide automatic sprinkler system
Rooms with boilers where the largest piece of equipment is over 15 psi and 10 horsepower	1 hour or provide automatic sprinkler system
Refrigerant machinery room	1 hour or provide automatic sprinkler system
Hydrogen fuel gas rooms, not classified as Group H	1 hour in Group B, F, M, S and U occupancies; 2 hours in Group A, E, I and R occupancies.
Incinerator rooms	2 hours and provide automatic sprinkler system
Paint shops, not classified as Group H, located in occupancies other than Group F	2 hours; or 1 hour and provide automatic sprinkler system
In Group E occupancies, laboratories and vocational shops not classified as Group H	1 hour or provide automatic sprinkler system
In Group I-2 occupancies, laboratories not classified as Group H	1 hour and provide automatic sprinkler system
In ambulatory care facilities, laboratories not classified as Group H	1 hour or provide automatic sprinkler system
Laundry rooms over 100 square feet	1 hour or provide automatic sprinkler system
In Group I-2, laundry rooms over 100 square feet	1 hour
Group I-3 cells and Group I-2 patient rooms equipped with padded surfaces	1 hour
In Group I-2, physical plant maintenance shops	1 hour
In ambulatory care facilities or Group I-2 occupancies, waste and linen collection rooms with containers that have an aggregate volume of 10 cubic feet or greater	1 hour
In other than ambulatory care facilities and Group I-2 occupancies, waste and linen collection rooms over 100 square feet	1 hour or provide automatic sprinkler system
In ambulatory care facilities or Group I-2 occupancies, storage rooms greater than 100 square feet	1 hour
Electrical installations and transformers	See Sections 110.26 through 110.34 and Sections 450.8 through 450.48 of NFPA 70 for protection and separation requirements.
Lithium-ion and lithium metal battery storage	See Section 320 of the International Fire Code

For SI: 1 square foot = 0.0929 m², 1 pound per square inch (psi) = 6.9 kPa, 1 British thermal unit (Btu) per hour = 0.293 watts, 1 horsepower = 746 watts, 1 gallon = 3.785 L, 1 cubic foot = 0.0283 m³.

Reason Statement: This proposal adds a new incidental use to table 509.1 to connect the Virginia Construction Code with the new construction provisions in the 2024 International Fire Code for storage of lithium-ion and lithium metal batteries (which have been removed from the SFPC in the base document). This link is critical to the proper function of the SFPC and VCC in Virginia and to the safety necessary for emerging technologies such as lithium-ion and lithium metal batteries. The ICC 2024 International Fire Code Significant Changes Document summarizes the changes as follows:

"CHANGE SIGNIFICANCE: Advancements in battery technologies have introduced a new generation of battery types, such as lithium-ion and flow batteries, each with advantages and potential hazards. Lithium-ion and lithium metal batteries can create challenging fires. The IFC intends to provide the necessary safety mechanisms to prevent and mitigate fires and explosions that can result due to the inherent hazards associated with the technologies. IFC Section 1207 addresses electrical energy storage systems (ESS), but other uses for lithium-ion and lithium metal batteries exist. This new section addresses storage of lithium-ion and lithium metal batteries. The provisions are intended to address all types of storage scenarios from manufacturing to warehouse operations to retail, and even the collection and recycling process. The requirements focus on mitigation of the significant impact thermal runaway and fires can have on facilities and public safety.

Section 320.1 states that the requirements cover storage of all lithium-ion and lithium metal batteries, which includes new, used, waste, recycling and refurbished batteries. There are five exceptions as follows:

1. New or refurbished batteries installed in the equipment, devices or vehicles they are designed to power.
2. New or refurbished batteries packed for use with the equipment, devices, or vehicles they are designed to power.
3. Batteries in original retail packaging that are rated at not more than 300 watt-hours for lithium-ion batteries or contain not more than 25 grams of lithium metal for lithium metal batteries.
4. Temporary storage of batteries or battery components during the battery manufacturing process prior to completion of final quality control checks.
5. Temporary storage of batteries during the vehicle manufacturing or repair process.

These exceptions identify situations where the regulations do not apply and allow retail and manufacturing operations to continue, provided they comply with the exceptions.

A permit is required for storage of batteries when the quantity of lithium-ion or lithium metal batteries exceeds 15 cubic feet. In a recycling or collection situation, a 55-gallon drum will hold 7.35 cubic feet. As such, three drums of lithium-ion or lithium metal batteries will exceed the limit. Keep in mind that the code is considering the quantity of lithium-ion or lithium metal batteries. Other batteries included in the mix do not count. For example, if the facility is collecting batteries and the battery types are not separated—all types of batteries are mixed in a container. If there are any lithium-ion or lithium metal in the container, the entirety should probably be treated as all lithium-ion or lithium metal batteries.

A fire safety and evacuation plan is required when the aggregate quantity exceeds 15 cubic feet. This plan should be required as part of the permit application/approval process.

There are several storage configurations considered in Section 320. The batteries can be in containers (Section 320.4.1), indoor storage rooms (Section 320.4.2), or outdoor storage (Section 320.4.3). When the batteries are stored in containers, the maximum quantity allowed is 15 cubic feet. This is primarily intended to cover the containers collecting used, or waste, batteries for recycling or disposal. These types of containers can be found in many establishments, including mercantile and office buildings. If the aggregate quantity of lithium-ion or lithium metal batteries exceeds 15 cubic feet, then the storage above 15 cubic feet must be in an indoor or outdoor storage area.

A fire detection and alarm system is required for indoor storage rooms and outdoor storage. The method of fire detection is either an air-aspirating system or a radiant-energy sensing system. These methods of detection provide an earlier warning than traditional smoke detectors. Other types of detection are currently being researched and developed, but they would need to be approved under an alternate method process as allowed in Section 104.2.3.

Indoor storage rooms are also required to be sprinklered and separated from the remainder of the occupancy by 2-hour fire barriers. There is an option for construction of an indoor storage room, and Section 320.4.2.2 refers to a prefabricated portable structure for battery storage. This structure must provide a 2-hour fire-resistance-rated enclosure and must have an automatic sprinkler system and detection system.

Batteries with a charge not exceeding 30 percent may be stored with fewer protections in place. Testing has shown that lithium-ion batteries not exceeding a 30 percent state of charge are less likely to undergo thermal runaway than fully charged batteries. The 30 percent state of charge is recognized by the U.S. Department of Transportation (DOT) and other transport agencies (e.g., Transport Canada, International Civil Aviation Organization) as providing an additional level of safety for shipping by air.

Typically, these batteries are coming from the manufacturer or refurbishing facility. If the batteries do not exceed a 30 percent state of charge, then 2-hour separation, explosion control, and a technical opinion and report are not required. These batteries will most likely not be the batteries collected at facilities as waste or in the recycling process."

Cost Impact: The code change proposal will increase the cost. This proposed change is simply to comply with the current model code regarding new hazards and protections for the storage of lithium-ion and lithium metal batteries. It may increase the cost of construction as compared to not providing any additional protection.

B1006.2.1(1)-24

VCC: 1006.2.1, TABLE 1006.2.1

Proponents: Dan Willham, representing Fairfax County, VA

2021 Virginia Construction Code

Revise as follows:

1006.2.1 Egress based on occupant load and common path of egress travel distance. Two *exits* or *exit access doorways* from any space shall be provided where the design *occupant load* or the *common path of egress* travel distance exceeds the values *listed* in Table 1006.2.1. The cumulative *occupant load* from adjacent rooms, areas or spaces shall be determined in accordance with Section 1004.2.

Exceptions:

1. The number of *exits* from foyers, lobbies, vestibules or similar spaces need not be based on cumulative *occupant loads* for areas discharging through such spaces, but the capacity of the *exits* from such spaces shall be based on applicable cumulative *occupant loads*.
2. *Care suites* in Group I-2 occupancies complying with Section 407.4.
3. Unoccupied mechanical rooms and *penthouses* are not required to comply with the common path of egress travel distance measurement.
4. In Group R-2 occupancies where Section 903.2.8, Exception 1 or 2 is applicable
~~In Group R-2 and R-3 occupancies, one means of egress is permitted within and from individual dwelling units with a maximum occupant load of 20 where the dwelling unit is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2 and the common path of egress travel does not exceed 125 feet (38 100 mm). This exception shall also apply to Group R-2 occupancies where Section 903.2.8 , Exception 1 or 2 is applicable.~~

TABLE 1006.2.1 SPACES WITH ONE EXIT OR EXIT ACCESS DOORWAY

OCCUPANCY	MAXIMUM OCCUPANT LOAD OF SPACE	MAXIMUM COMMON PATH OF EGRESS TRAVEL DISTANCE		
		(feet)		With Sprinkler System (feet)
		Without Sprinkler System (feet)		
		Occupant Load		
		OL ≤ 30	OL > 30	
A ^C , E, M	50	75	75	75 ^a
B	50	100	75	100 ^a
F	50	75	75	100 ^a
H-1, H-2, H-3	3	NP	NP	25 ^d
H-4, H-5	10	NP	NP	75 ^d
I-1, I-2 ^d , I-4	10	NP	NP	75 ^a
I-3	10	NP	NP	100 ^a
R-1	10	NP	NP	75 ^a
R-2	20	NP	NP	125 ^a
R-3 ^a	20	NP	NP	125 ^{a, g}
R-4 ^a	20	NP	NP	125 ^{a, g}
S ^f	29	100	75	100 ^a
U	50	100	75	75 ^a

For SI: 1 foot = 304.8 mm.

NP = Not Permitted.

- a. Buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2. See Section 903 for occupancies where automatic sprinkler systems are permitted in accordance with Section 903.3.1.2.
- b. Group H occupancies equipped throughout with an automatic sprinkler system in accordance with Section 903.2.5.
- c. For a room or space used for assembly purposes having fixed seating, see Section 1030.8.
- d. For the travel distance limitations in Group I-2, see Section 407.4.
- e. The common path of egress travel distance shall only apply in a Group R-3 occupancy located in a mixed occupancy building.

- f. The length of common path of egress travel distance in a Group S-2 open parking garage shall be not more than 100 feet.
- g. For the travel distance limitations in Groups R-3 and R-4 equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.3, see Section 1006.2.2.6.

Reason Statement: Exception 4 has the same occupant load and common path of travel limits as the general Table 1006.2.1. The occupant load limit was increased from 10 occupants to 20 in ICC code change E17-15. This Virginia amendment is no longer needed, except for just the Group R-2 occupancies where Section 903.2.8 , Exception 1 or 2 is applicable. Sprinklered R-2 and R-3 occupancies under this exception are the same as the Table. This change revises the exception to only include Group R-2 occupancies where Section 903.2.8 , Exception 1 or 2 is applicable.

Cost Impact: The code change proposal will not increase or decrease the cost

The change proposal does not change any technical requirements. It only removes extraneous language.

B1006.3.4-24

IBC: 1006.2.1, TABLE 1006.3.4(1), 1006.3.4.2 (New)

Proponents: Lyle Solla-Yates, representing Charlottesville Planning Commission (lyle.sollayates@gmail.com)

2024 International Building Code

Revise as follows:

1006.2.1 Egress based on occupant load and common path of egress travel distance. Two *exits* or *exit access doorways* from any space shall be provided where the design *occupant load* or the *common path of egress* travel distance exceeds the values *listed* in Table 1006.2.1. The cumulative *occupant load* from adjacent rooms, areas or spaces shall be determined in accordance with Section 1004.2.

Exceptions:

1. The number of *exits* from foyers, lobbies, vestibules or similar spaces need not be based on cumulative *occupant loads* for areas discharging through such spaces, but the capacity of the *exits* from such spaces shall be based on applicable cumulative *occupant loads*.
2. *Care suites* in Group I-2 occupancies complying with Section 407.4.
3. Unoccupied mechanical rooms and *penthouses* are not required to comply with the common path of egress travel distance measurement.
4. Single exit four-story buildings complying with Section 1006.3.4.2.

TABLE 1006.3.4(1) STORIES AND OCCUPIABLE ROOFS WITH ONE EXIT OR ACCESS TO ONE EXIT FOR R-2 OCCUPANCIES

STORY	OCCUPANCY	MAXIMUM NUMBER OF DWELLING UNITS	MAXIMUM EXIT ACCESS TRAVEL DISTANCE
Basement, first, second, ~~or third, or fourth~~ story above grade plane and occupiable roofs over the first, ~~or second, or third~~ story above grade plane	R-2 ^{a, b, c, d}	4 dwelling units	125 feet
~~Fourth, fifth~~ story above grade plane and higher	NP	NA	NA

For SI: 1 foot = 304.8 mm.

NP = Not Permitted.

NA = Not Applicable.

- a. Buildings classified as Group R-2 equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2 and provided with emergency escape and rescue openings in accordance with Section 1031.
- b. This table is used for Group R-2 occupancies consisting of dwelling units. For Group R-2 occupancies consisting of sleeping units, use Table 1006.3.4(2).
- c. This table is for occupiable roofs accessed through and serving individual dwelling units in Group R-2 occupancies. For Group R-2 occupancies with occupiable roofs that are not accessed through and serving individual units, use Table 1006.3.4(2).
- d. 4-story buildings and 3-story buildings with an occupiable roof above the third story shall also comply with Section 1006.3.4.2.

Add new text as follows:

1006.3.4.2 Single exit four-story buildings with Group R-2 dwelling units. Four-story buildings with a single exit for Group R-2 dwelling units shall comply with Table 1006.3.4(1) and all of the following:
1. The net floor area of each floor shall not exceed 4,000 square feet (418.5 m).

2. Doors opening into the *exit stairway* must open in the direction of egress travel.

3. Electrical receptacles shall be prohibited in *exit stairway*.

4. In addition to the requirements for emergency escape and rescue openings in Section 1031.2, sleeping rooms on the fourth story above grade plane shall have not fewer than one emergency escape and rescue opening in accordance with Section 1031.

5. For interior exit stairways:

a. Openings to the interior exit stairway enclosure shall be limited to those required for exit access into the enclosure from normally occupied spaces, those required for egress from the enclosure, and openings to the exterior. Elevators shall not open into the interior exit stairway enclosure. Dwelling unit doors shall not open into the interior exit stairway enclosure.

b. A manual fire alarm system and automatic smoke detection system that activates the occupant notification system in accordance with Section 907.5 shall be provided. Smoke detectors shall be located in common spaces outside of dwelling units, including but not limited to gathering areas, laundry rooms, mechanical equipment rooms, storage rooms, interior corridors, interior exit stairways, and exit passageways.

c. Regardless of the stairway construction type, automatic sprinkler locations in interior exit stairways shall comply with the requirements of NFPA 13 for combustibile stairways.

6. Exterior exit stairways must be constructed of noncombustible materials or fire-retardant-treated wood framing and sheathing complying with Section 2303.2.

7. The emergency power illumination requirements in Section 1008.3 shall be provided regardless of there being only one means of egress under this section.

Reason Statement: The 2024 International Building Code allows buildings up to three stories of R-2 occupancy to have up to four dwelling units at each story served by a single exit. This proposal acknowledges the rising demand for infill multifamily development and a growing movement in Virginia and across the United States and Canada to modify building codes for this purpose. We recommend enabling a single exit to serve up to four stories of R-2 occupancy above the grade plane.

The initial language was identical to the modified proposal marked "E24-24-SHAPIRO-MC1". That language was adapted from codes in Seattle, Honolulu, New York City, and in Western European countries.

Within the United States, Seattle, Honolulu, and New York City have allowed buildings with generally fewer restrictions, to no ill effect or local controversy, and no major fires.

Based on stakeholder feedback and international best practices, we have added a number of additional restrictions that we believe are a reasonable balance between safety, cost, and quality, for both interior exit stair and exterior exit stair designs for Virginia families. We have also added some changes to improve clarity based on feedback.

Cost Impact: The code change proposal will decrease the cost

The cost of constructing four story multifamily buildings on small lots will decrease by roughly 7 percent, in line with the reduction in circulation area required.

This size reduction enables multifamily development that would otherwise be physically impossible on the smallest sites, allowing for lower cost site options.

Attached Files

- **2024_RD845-Single-staircase_Advisory_Group_Findings_and_Recommendations_-_November_2024 (1).pdf**
<https://va.cdpaccess.com/proposal/1273/1790/files/download/898/>



November 27, 2024

Memorandum

To: Board of Housing and Community Development
Senator Adam Ebbin, Chair, Senate Committee on General Laws and Technology
Delegate David Bulova, Chair, House Committee on General Laws

From: Single-staircase Advisory Group

RE: Findings and Recommendations

Background

House Bill 368 and Senate Bill 195 (2024) as approved by the General Assembly and signed by the Governor (*Appendix 1*), directed the Board of Housing and Community Development (the Board) to convene a workgroup to provide recommendations for allowing a single stair exit for Group R-2 (multifamily residential) structures up to six stories in height (above grade plane). The legislation required the Single-staircase Advisory Group (Advisory Group) to submit its findings and recommendations to the Board and General Assembly by December 1, 2024. The Advisory Group met three times, and a summary of each meeting is included in the Appendix (*Appendix 2a-c*).

The Advisory Group's efforts consisted of in-person discussion, written testimony, background research, and accepting in-person and written public comments. These efforts were part of a fact-finding exercise that sought to evaluate various considerations related to a potential proposal during the regular development of the Uniform Statewide Building Code (USBC). The Advisory Group operated outside of the normal code development cycle, allowing it to focus on this singular topic in depth.

The Advisory Group did not develop a model proposal to allow a single-stair exit in multifamily residential structures up to six stories, rather, it laid out the many considerations that may need to be taken into account if a proposal comes before the Board. The Advisory Group provided thoughtful analysis of benefits of single-stair construction, the fire safety concerns associated with these structures, and the features of protection that may be needed to keep occupants safe during emergencies.



History

The Advisory Group outlined a brief history of the single-stair issue at the first meeting on September 9, 2024. The Advisory Group reviewed and heard main points from a 2021 code change proposal that had been submitted to the Board for consideration (*Appendix 4a*). This proposal was based on a code change that was approved in Seattle, and the 2018 Seattle Code (*Appendix 4b*) served as template language. The proposal received a non-consensus recommendation from a code cycle workgroup and was not approved by the Board. In addition to these efforts in Virginia, the Advisory Group noted the International Code Council (ICC) is reviewing similar proposals for allowing single-stair construction above current limits (*Appendix 4c and 5aa*). At the time of this report, ICC code change proposal E24-24 has been through the committee action hearing process, resulting in approval of the proposal by the committee as modified (*Appendix 4d*). Final actions on E24-24 will likely occur during the public comment hearing and online government consensus voting period in 2026. Lastly, the Advisory Group discussed the National Fire Protection Association's (NFPA) single exit stair symposium and expressed interest in the recommendations from authoritative experts on this topic (*Appendix 5a*). The history of this issue demonstrates that the Advisory Group's efforts are not occurring in a vacuum, and the Commonwealth should consider the single-stair issue with these other proposals and recommendations in mind.

Baseline

The Advisory Group found that the primary purpose of the current two-stair exit requirement for buildings over three stories is to provide occupants with an alternate means of egress during an emergency. The Advisory Group found that this is an important safety requirement in the event one of the two staircases (exits) is blocked, congested, compromised, or damaged. There are many other safety requirements in the USBC, and the Advisory Group discussed some general "baseline" provisions to determine what added features of protection may be needed if a building lacked a second stair exit. During the second Advisory Group meeting on October 15, 2024, there was discussion of the following requirements currently in the building code:

- Travel distance to exits
- Fire penetrations
- Type of construction (combustible vs. noncombustible)
- Sprinklers
- Egress width
- Occupant load formula
- Exterior access for fire department
- Elevators

The Advisory Group noted that there is a spectrum and variety of requirements for different buildings captured by the Advisory Group's authorizing legislation ("*Group R-2 occupancies...not more than six stories above grade plane.*") Future workgroups may need to outline in more detail the current requirements in order to determine what additional provisions may need to be added to ensure occupants are safe.



Fire Safety Considerations

A key takeaway from the Advisory Group meetings was that fire safety concerns are the primary reasons for currently not allowing a single-stair exit for multifamily residential structures above three stories. Advisory Group members said that the building code's redundancy in egress options exists for occupant escape and first responder access during emergencies. At four stories and above, Emergency Escape and Rescue Openings (EEROs) start to become technically and functionally infeasible. EEROs are windows or doors that provide occupants a means of escape and rescue. Advisory Group members noted that at four stories and above, there are no requirements for EEROs because these floors not only have a minimum requirement for two exits, but fire service access and rescue may not be practical or possible at that height. The Advisory Group found that at levels at and above four stories, if the only means of egress was blocked/compromised, occupants would have to use "defend in place" strategies, e.g. wait until emergency help arrives to escape. Advisory Group members found that performing emergency response operations in a single stairwell, that is simultaneously being used for occupant escape, negatively impacts rescue and fire suppression efforts.

In addition to concerns raised at the Advisory Group meetings from members associated with fire service organizations, three organizations shared written statements: a letter from the Virginia Professional Fire Fighters (*Appendix 3a*), a joint statement from the International Association of Fire Fighters and Metropolitan Fire Chiefs Association (*Appendix 3b*), and a statement from the National Association of State Fire Marshals (*Appendix 3c*)

Advisory Group members discussed potential (upgraded) fire safety protections when only one stair is present in structures with four to six stories. To compensate for a lack of a second means of egress, all or some of these added protections may make up the elements of a future single-staircase proposal:

- Requiring construction type 1 or 2 (non-combustible materials) for any single-stair building over three stories
- Closer exterior access to building for fire departments
- Capability of fire department (ISO Class 1 rating)
- Wider egress width. Advisory Group discussed a 60-inch requirement. See study on wider egress width in *Appendix 5z*
- Limiting the number of units per floor or net floor area (*Appendix 4d*) to control occupant load
- Limiting and clearly defining occupied floors, roofs, stories, podiums, and grade
- Pressurizing exit stair enclosure to prevent smoke from entering
- Mechanical smoke ventilation systems (*Appendix 5d*)
- Higher sprinkler density above and beyond current requirements
- Early smoke detection in common areas (stairwell itself)
- Special inspections for penetrations of rated assemblies



The Advisory Group discussed in further detail the considerations related to these added fire safety features. These considerations can serve as areas of further research for future workgroups in the building code update cycle to deliberate. Advisory group members emphasized the importance of performing a cost-benefit analysis on these added fire safety protections. The list captures some of the various factors that need to be considered when analyzing a single-stair proposal with the health, safety, and welfare of occupants in mind. Details on each individual consideration is included in the October 15, 2024 meeting summary (*Appendix 2b*).

When considering added protections and requirements, the advisory group finds that the provisions of floor modification E24-MC1 (*Appendix 4d*) may provide a beneficial framework for a future single-staircase code change proposal.

Other Topics Discussed

Benefits - Part of the Advisory Group's fact-finding exercise was outlining the benefits of single-stair construction and the reasons to consider this code change on its merits. Advisory Group members advocated that single-stair buildings are needed to fit more units/living space on small urban lots. Advisory Group members pointed to a section in the City of Charlottesville's Inclusionary Zoning Analysis that highlights parcels of land that would benefit from this development (*Appendix 5e*). The Virginia Zoning Atlas also shows parcels where localities allow taller multifamily development by right, potentially creating opportunities for single-stair construction above current limits to increase housing stock (*Appendix 5bb*). Additional research was shared detailing the benefits of these structures in Oregon (*Appendix 5f*), Massachusetts (*Appendix 5g-h*), Tennessee (*Appendix 5i*), Minnesota (*Appendix 5j-k*), Montana (*Appendix 5l*), Australia (*Appendix 5q*), Vancouver and across Canada (*Appendix 5m-p*). Examples of single-stair construction in Seattle were also shared (*Appendix 5b-c*).

Advisory Group members found that projects on these small lots would otherwise be financially infeasible if sellable living space was taken up by a second staircase. Advisory Group members reasoned that the current two-stair requirement is limiting housing stock because of the challenges fitting the necessary number of units onto small lots for the project to make financial sense. In addition to financial considerations, Advisory Group members shared additional benefits of single-stair construction and design. These benefits include the flexibility to add more types of multifamily housing, more natural light and ventilation, and the ability to build structures consistent with historically significant architectural design, aiding municipalities in their historical preservation goals. Advisory Group members shared additional articles and reports detailing these benefits (*Appendix 5r-y*). Advisory Group members proposed that added fire safety requirements may not be needed in single-stair structures because of the relative safety of multifamily residential buildings. Advisory Group members pointed to the current fire safety standards and data on fire fatalities in multifamily building (*Appendix 5r-s*).

The American Institute of Architects Virginia shared a written statement that reiterated the benefits of single-stair construction. The statement also supports efforts to further evaluate single-stair proposals (*Appendix 3d*).



Legislating the Building Code – Advisory Group members shared concerns that efforts from the General Assembly to approve a code-change proposal allowing a single-stair exit above current limits may undermine the building code development process in Virginia. Advisory Group members warned that “legislating the building code” does not support Virginia’s robust stakeholder-based building code development process.

Recommendations to the Board

The Advisory Group recommends that any proposal to allow a single stair exit above current limits should be considered by the Board during the normal building code development process. The Advisory Group discussed a variety of considerations related to the health, safety, and welfare of occupants for future workgroups to deliberate in more detail. The Advisory Group presents these considerations as a big-picture overview of this issue and a summary of all the different factors that may arise when considering a single-stair exit proposal. The Advisory Group recommends the Board convene a special workgroup during the 2024 building code update cycle to continue discussing this topic, ICC code change proposal E24-24 as modified, and any related proposals.



Appendix

1. Authorizing Legislation - HB360/SB195
2. Meeting Summaries
 - a) September 9, 2024
 - b) October 15, 2024
 - c) November 6, 2024
3. Statements
 - a) [Virginia Professional Fire Fighters](#)
 - b) [International Association of Fire Fighters & Metropolitan Fire Chiefs Association](#)
 - c) [National Association of State Fire Marshals](#)
 - d) [American Institute of Architects Virginia](#)
4. Proposals
 - a) [2021 Proposal Virginia](#)
 - b) [2018 Seattle Code](#)
 - c) [2024 Proposal ICC](#)
 - d) [Draft Floor Modification 2024 ICC Proposal E24-24-SHAPIRO-MC1](#)
5. Research and Analysis
 - a) [National Fire Protection Association \(NDPA\) - Single Exit Stair Symposium](#)
 - b) [Single Staircase Examples in Seattle - American Institute of Architects](#)
 - c) [Single Staircase Example in Seattle - Habitat for Humanity + News article](#)
 - d) [How Mechanical Smoke Ventilation Systems Work](#)
 - e) [City of Charlottesville's Inclusionary Zoning Analysis](#)
 - f) [Benefit analysis for small-footprint apartment buildings in Oregon – Sightline Institute](#)
 - g) [Could Legalizing Mid-Rise Single-Stair Housing Expand and Improve Housing Supply? – Joint Center for Housing Studies \(JCHS\) of Harvard University](#)
 - h) [Legalizing Mid-Rise Single-Stair Housing in Massachusetts – JCHS of Harvard University](#)
 - i) [Single Stair Design & 2024 Legislation – AIA Tennessee](#)
 - j) [Single-egress stairway apartment building study – Minnesota](#)
 - k) [Advocacy Update: Commercial Code TAG Approves Single-Stair Apartments – Housing First Minnesota](#)
 - l) [Governor's Housing Task Force -Montana](#)
 - m) [Unlocking livable, resilient, decarbonized housing with Point Access Blocks – Larch Lab for the City of Vancouver](#)
 - n) [Optimizing Form & Function with Michael Eliason – The Passive House Network](#)
 - o) [Single Egress Stair Building Designs: Policy and Technical Options Report – British Columbia](#)
 - p) [The Second Egress: Building a Code Change – Conrad Speckert, McGill University](#)
 - q) [Australian Apartment Shows How Single Stairs Make Small Buildings Better – Treehugger](#)

- r) [Single-Stair Construction: New Data on Costs, Benefits, and Outcomes - Pew Charitable Trusts](#)
- s) [Fire Death Rate Trends: An International Perspective – U.S. Fire Administration](#)
- t) [Early Zoning and the War on Multifamily Housing – Strong Towns](#)
- u) [Why we can't build family-sized apartments in North America – Center for Building in North America](#)
- v) [How to build more family-sized apartments – Niskanen Center](#)
- w) [The Olympic Village: High-Performance Housing Illegal to Build in the U.S. – Medium](#)
- x) [Point Access Block Building Design: Options for Building More Single-Stair Apartment Buildings in North America – U.S. Department of Housing and Urban Development](#)
- y) [Why North America Can't Build Nice Apartments \(because of one rule\) – Urbanarium For Smart Cities](#)
- z) [Means of Escape in Residential Buildings](#)
- aa) [The International Code Council's Role in Code Development and Building Safety – ICC](#)
- bb) [Virginia Zoning Atlas](#)

Abstract: The Role of the Teacher in the Classroom

A. B. Smith (2018)

The role of the teacher in the classroom is a complex and multifaceted one. It is not simply a matter of delivering content, but rather of facilitating learning and growth. This paper explores the various roles that teachers play in the classroom, from the traditional role of the lecturer to the more modern role of the facilitator.

1. Introduction

The role of the teacher in the classroom is a complex and multifaceted one.

In the past, the teacher's role was primarily that of a lecturer, delivering content to a class of students. However, in recent years, the role of the teacher has evolved significantly. Teachers are now expected to be facilitators, guiding students through the learning process and encouraging them to take ownership of their learning. This paper explores the various roles that teachers play in the classroom, from the traditional role of the lecturer to the more modern role of the facilitator.

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Meeting Summary
Single-staircase Advisory Group
September 9, 2024
10:00 AM
Virginis Housing Center
4224 Cox Rd, Glen Allen, VA

Advisory Group Members Present:

William Abrahamson, American Institute of Architects Virginia
Hampton Barclay, Private Developer
Eric Cavallo, Private Contractor
Andrew Clark, Home Builders Association of Virginia
Rick Hinson, American Council of Engineering Companies of Virginia
Alex Horowitz, Pew Charitable Trusts
Billy Hux, State Fire Marshal
Jason Laws, Virginia Building and Code Officials Association
Andrew Milliken, Virginia Fire Services Board
Steven Sites, Virginia Fire Services Board
Lyle Solla-Yates, Local Planning Professional
Schuyler Van Valkenburg, Senate of Virginia (16th District)
Dan Willham, Virginia Building and Code Officials Association

DHCD staff attending for all or part of meeting:

Jeff Brown, State Building Codes Office Director
Trisha Lindsey, Policy and Legislative Services Director
Andrew Malloy, Policy Analyst
Paul Messplay, Code and Regulation Specialist
Richard Potts, Code Development and Technical Support Administrator
Chase Sawyer, Policy and Legislative Services Manager

Key Takeaways

- Advisory Group members agree that any findings or recommendations from the Advisory Group should be reviewed and considered during the normal code development process.
- The primary reasons discussed for not allowing a single stair exit for multifamily residential structures above current limits are fire safety concerns.
- Advisory Group members created a preliminary list of topics to be reviewed by the Advisory Group when considering allowing a single-staircase above current limits. The topics relate to fire safety, resident health/safety/welfare, accessibility, and general building code considerations.

Summary

Department of Housing and Community Development (DHCD) staff provided a summary of the purpose of the meeting and introduced the topic before the Single-staircase Advisory Group

(Advisory Group). During the 2024 General Assembly Session, [HB368](#) and [SB195](#) were approved by the General Assembly and signed by the Governor. The identical bills directed the Board of Housing and Community Development (Board) to convene a stakeholder advisory group to provide findings and recommendations for allowing a single stair exit for Group R-2 (multifamily residential) structures up to six stories in height. The Advisory Group is directed to submit its findings and recommendations to the Board and General Assembly by December 1, 2024. DHCD staff emphasized that the Advisory Group is tasked with only making findings of fact and recommendations. The findings of the Advisory Group could then be used by the Board when considering proposals during the normal code development process. DHCD staff further emphasized that the Advisory Group is not a part of the normal code development cycle, rather it serves as an opportunity to discuss this topic in more detail, laying some groundwork for future code cycle workgroups.

The Advisory Group discussed the background and history of the single-staircase proposal. Advisory Group members shared examples of single-staircase construction in other parts of the country such as Seattle, Washington, and New York City, as well as internationally in Europe. The Advisory Group discussed how many single-staircase buildings are being built in these areas; however, there is a lack of information on the prevalence of these structures in the United States. Some Advisory Group members questioned whether single-staircase construction would be used if allowed by the building code. Advisory Group members discussed alternative methods for complying with the current staircase requirements that could also yield similar benefits as allowing a single staircase, such as interlocking stairwells or stairs connected to an elevator lobby with an alternative stairwell only for residents. Advisory Group members also noted that a proposal of this nature related to residential buildings could have implications associated with non-residential building uses.

The Advisory Group discussed the benefits and safety concerns associated with allowing a single staircase for multifamily structures up to six stories. Advisory Group members noted that the current building code, which allows a single exit in multifamily structures up to three stories, creates challenges for builders in some areas due to zoning constraints. Some Advisory Group members shared that single-staircase structures can in some instances be more economically feasible in higher-density localities where lots are small and zoning restrictions prevent larger production-style multifamily development. Advisory Group members reasoned that single-stair structures could be more economically feasible because they allow for additional square footage, more units, and more efficient use of space, which creates more revenue opportunities and higher margins for builders/developers. Some Advisory Group members also suggested that allowing these structures could rehabilitate existing structures and provide opportunities for in-fill units on lots that would otherwise go untouched, which would increase the housing supply, making housing more affordable generally. Advisory Group members acknowledged that additional fire safety measures would be required for single-staircase buildings greater than three stories, including, but not limited to, sprinklers, mechanical smoke ventilation systems, and higher fire-rating building materials.

The Advisory Group discussed concerns that exist related to allowing a single staircase for buildings up to six stories. The reasons for concern shared by Advisory Group members were

primarily regarding the health, safety and welfare of residents in addition to the safety of firefighters and other first responders accessing a building with a single staircase during emergencies. Some Advisory Group members noted that one point of entry and exit for firefighters and evacuating residents is a significant concern. Advisory Group members also noted that some city lots do not have adequate fire department access, making the need for at least two means of egress more important. Concerns were also raised that the capabilities and resources of individual fire departments may vary, creating problems of access for fire departments with fewer resources or inadequate equipment. Advisory Group members shared that a reason for allowing a single staircase for up to three stories is because self-evacuation and exterior escape ladders are still options at that height and may not be viable options for taller heights.

There was consensus within the Advisory Group that any proposals or recommendations related to the Uniform Statewide Building Code (USBC) should still go through the standard code development process. Advisory Group members expressed concerns with efforts to “legislate the building code.” Advisory Group members suggested establishing a specific workgroup during the next code update cycle related to the single-staircase issue. Additionally, there was consensus that the USBC should still be uniform in nature and not have exceptions or different building requirements for different regions of the Commonwealth.

During public comment, a member of the public spoke in opposition to a single-staircase code change. He said this change would lead to reduced public safety. He expressed concerns that the proposed systems designed to protect residents in single-staircase buildings (i.e. mechanical smoke ventilation) might fail in the future due to maintenance issues. He shared that safety should be the main priority.

Future Considerations

A key takeaway of the meeting was that fire safety concerns are the primary reasons for not allowing a single staircase for multifamily residential structures above current limits. Advisory Group members created a list of topics to consider in more detail at future meetings regarding the proposal to allow a single exit for Group R-2 (multifamily residential) structures up to six stories in height.

- Fire Safety Considerations
 - Building construction/design:
 - Exterior grades; stories at or above grade; podium construction; occupied roofs
 - Construction type; combustible vs non-combustible construction materials
 - Locations and types of fire separations (fire barrier, fire wall, fire partition)
 - Egress:
 - Egress width; exit configuration; exit access; and exit travel distance
 - Egress above ground/patio egress; egress through mixed occupancy

- External vs. internal stairs
 - Areas of refuge; emergency communications
- Fire sprinkler and fire alarm requirements
- Special inspection (IBC Chapter 17) of fire rated assembly penetrations
- Providing prop alarms on stairway doors
- Providing smoke control in stairway; skylight technology; pressurization
- Mixed uses (occupancy classifications)
- Occupant loads (maximum)
- Capacity and capability of jurisdiction and fire department(s), including fire apparatus and water availability
- Firefighter and first responder access to the building (internal and external)
 - Open perimeters
 - Elevator size and type
 - Emergency escape and rescue openings (EERO)
- Other Considerations
 - Cross connection within units
 - Accessibility (non-firefighter)
 - Relative safety for different housing types
 - Benefits

Meeting Summary
Single-staircase Advisory Group
October 15, 2024
10:00 AM
Virginis Housing Center
4222 Cox Rd, Glen Allen, VA

Advisory Group Members Present:

William Abrahamson, American Institute of Architects Virginia
Hampton Barclay, Private Developer
Eric Cavallo, Private Contractor
Ron Clements, Virginia Building and Code Officials Association
Rick Hinson, American Council of Engineering Companies of Virginia
Alex Horowitz, Pew Charitable Trusts
Andrew Milliken, Virginia Fire Services Board
Lyle Solla-Yates, Charlottesville Planning Commission

DHCD staff attending for all or part of meeting:

Jeff Brown, State Building Codes Office Director
Andrew Malloy, Policy Analyst
Florin Moldovan, Code and Regulation Specialist
Richard Potts, Code Development and Technical Support Administrator
Chase Sawyer, Policy and Legislative Services Manager

Key Takeaways

- The Advisory Group discussed in more detail the list of topics to be reviewed when considering allowing a single stair exit in certain structures.
- Advisory Group members discussed additional fire safety measures, above and beyond what is already included in the code for multifamily residential structures above three and up to six stories. Consensus was not reached on which additional fire safety measures would ensure health/safety/welfare of residents in these structures if the second staircase was not required.

Summary

Department of Housing and Community Development (DHCD) staff opened the floor for public comments at the beginning of the second meeting of the Single-staircase Advisory Group (Advisory Group). During public comment, three fire services professionals expressed concerns that a single-staircase structure above three stories would jeopardize the safety of occupants. They said if one exit was lost or blocked during a fire, it would be very difficult to get occupants at higher levels out of the building. They said it would be even more difficult for smaller fire departments with fewer resources to evacuate occupants at high levels. These fire services professionals expressed understanding that the single-stair proposal seeks to address housing affordability, and they urged those in attendance to seek other solutions to lower the cost of

housing that do not affect safety. The fire services professionals also expressed opposition to efforts that “legislate the building code” and urged legislators to not move forward proposals like this one that the International Code Council (ICC) has not included in the model codes. They said if a proposal does come before the Board of Housing and Community Development (the Board), additional fire protection features should be added. They asked Advisory Group members to trust the professional advice of those who work in fire safety. They shared that the International Association of Firefighters, the Metropolitan Fire Chiefs Association, and the Virginia Professional Fire Fighters have stated opposition to single-stair construction in large multifamily dwellings.

A private citizen also spoke during public comment and expressed opposition to a single-stair proposal above current limits because of some non-fire related safety concerns. She expressed concerns that handicap residents may not be able to evacuate during all kinds of emergencies. The private citizen said events such as an active shooter, domestic violence, flooding and other natural disasters would put residents at additional risk if there were only one stair/exit for higher levels. She also said single-stair design would create higher density and other problems associated with it such as, public utility challenges (sewer, water, etc.), loss of community (open space), parking challenges, and traffic.

After public comment, DHCD staff provided a brief recap of the takeaways from the first Advisory Group meeting held on September 9, 2024, including the recommendation that any findings or recommendations from the Advisory Group should be reviewed and considered during the normal code development process. Staff outlined the structure of the meeting and pointed to the list of topics for consideration made during the previous meeting. Advisory Group members were prompted to determine if each item listed was an issue worth considering in a future code proposal, fire protection features to potentially include in a future proposal, and/or if there are any noteworthy pieces of research related to each topic that will aid workgroups in the normal code development process.

During the discussion of topics, the Advisory Group recognized that a variety of fire safety protections currently exist in the building code for multifamily structures up to six stories. The Advisory Group noted that these fire safety protections are developed with two staircases in mind when the structure is more than three stories. Advisory Group members discussed fire safety protection features that should be required (added) in order to mitigate the additional risk associated with a single-stair exit when a second staircase/exit is removed from a structure.

Occupied Floors, Stories, Podiums, Grade

Advisory Group members discussed the nuances and differences between occupied stories, occupied floors, stories above grade, and podium construction as it relates to parameters defined in the authorizing legislation. Advisory Group members agreed that a proposal allowing a single stair exit structure up to six stories would need to consider these factors and may need to impose restrictions in order to provide adequate fire access above a certain height. When considering podium construction, Advisory Group members suggested that building code language clearly define the *lowest occupied floor*. Advisory Group members also noted that the different ways localities calculate grade may need to be considered.

Construction Type

Advisory Group members reviewed the variety of construction material requirements for different multifamily residential structures up to six stories. Some Advisory Group members suggested that any single-stair structures above current limits should be type 1 or 2 construction (noncombustible materials). They stated the reason for this is to support “defend in place” strategies in which a resident may be forced to remain in their unit until emergency help arrives due to a blocked/inaccessible exit. Some Advisory Groups members noted that noncombustible construction types are important to prevent a contents fire from turning into a structural fire, making a “defend in place” strategy more difficult. Other Advisory Group members pointed out the financial costs of noncombustible construction and the challenges this creates for developers of small lots. Some Advisory Group members suggested a higher fire safety rating for only the materials used to construct the stairwell. Other Advisory Group members noted that this does not mitigate risk because occupants do not “defend in place” in the stairwell, but rather they would be forced to stay in occupied rooms, supporting the argument for noncombustible construction throughout. Additionally, it was noted that the building code already requires a two-hour fire rating for stairs four stories and above.

Egress

Advisory Group members discussed expanding egress width beyond current requirements in single-stair structures. Advisory Group members noted that a Canadian study (British Columbia) recommended a single-stair egress width of 5 feet (60 inches). Advisory Group members noted that alternate means of egress may be needed if a structure was built with only one staircase. Other Advisory Group members pointed out that there are no emergency escape rescue openings (EEROs) above three stories, so if a single exit is blocked, the only other egress options would be ariel apparatuses which are challenging and risky for fire departments of varying resources. Some Advisory Group members again emphasized the “defend in place” strategy because a single stair building would be cutting in half the available egress that would otherwise be required for four stories and above.

Occupant Load

Advisory Group members discussed occupant load in the context of number of units. Advisory Group members noted that the current building code establishes occupant load based on square footage calculations. Some Advisory Group members expressed that establishing limits on the number of units allowed should be the primary metric for controlling occupant loads in single-stair construction.

Fire Sprinklers and Fire Alarms

Advisory Group members noted that fire sprinklers and fire alarms are already required in multifamily structures. Some Advisory Group members offered that specific requirements for higher sprinkler densities could be considered to go above and beyond the current building code requirements to mitigate risk in single-stair construction. Advisory Group members also suggested requiring early detection systems in common areas, including the stairwell itself.

Special Inspections

Advisory Group members noted that even though special inspections of fire penetrations are included in the ICC model code, they are not required in Virginia. Advisory Group members indicated that requiring these inspections for single-stair construction could be considered to mitigate risk.

Prop Alarms

Advisory Group members discussed prop alarms as a way to ensure that open doors do not compromise a single stair exit during a fire. Some Advisory Group members remarked that prop alarms are not used to mitigate fire risk from a life safety perspective and that they are primarily used for security. Advisory Group members pointed out the primary issue with prop alarms in residential buildings is tampering.

Smoke Control

Advisory Group members discussed pressurized smoke systems in the single stairway to make it safer during a fire. Some Advisory Group members noted the lack of research on the prevalence of these systems. Other Advisory Group members highlighted the cost associated with these systems. They said pressurized smoke systems are required in Seattle's single-stair buildings; however, rents are high, and the costs are likely recouped by these higher rents. Advisory Group members also pointed out examples in other jurisdictions of smoke control related to ventilation. Other Advisory Group members noted that ventilation and exhaust systems should only be used for post-fire salvage, and they are not meant to keep a stairwell safe for escaping occupants. They said the reason for this is ventilation systems pull smoke through the stairwell, while pressurization systems keep smoke out of the stairwell entirely.

Capacity and Capability of Fire Department(s), Fire Apparatus, and Water Availability

Advisory Group members again noted that EEROs do not exist at four stories above grade and up. It was noted that occupants at these levels need alternate means of escape if a single staircase is blocked or compromised during a fire. Advisory Group members shared that fire departments may use aerial apparatuses to rescue occupants at these levels, but smaller (often more rural) fire departments may not have the resources to perform these rescues effectively. Advisory Group members highlighted that since the building code is statewide, it should be written for the minimum resources available. Other Advisory Group members speculated that single-stair buildings would not be built in areas with minimal firefighting resources. It was discussed whether there are any self-regulating mechanisms in the market or the building code itself that would ensure these structures are only built as infill in urban areas (with adequate resources). Advisory Group members pointed out that fire department access in these urban areas is still challenging, even if the fire department has ample resources. Advisory Group members suggested only allowing single-stair construction in areas where fire departments receive certain accreditations. Other Advisory Group members said tying the building code to fire department accreditation may not be beneficial since fire departments can fall in and out of accreditation, while the structures stand for long periods of time.

Firefighter and First Responder Access to the Building

Advisory Group members discussed challenges with firefighter access when only one staircase exists. Topics included access to the perimeter of the building (distance requirements) and alternate forms of access such as fire service elevators. Advisory Group members discussed the challenges with these measures including the costs of fire service elevators.

Benefits

Some Advisory Group members presented on the benefits of single-stair structures including more natural light, more ventilation, space for family size apartments, fitting in small infill lots, and benefits for main streets. Data was presented on the fire safety of single-stair buildings in other jurisdictions and the relative safety of multifamily housing compared to other housing types (single family, older multifamily, etc.). Advisory Group members discussed the relative safety of various housing types and limitations associated with each.

In a second public comment period, a fire service professional highlighted the variety of firefighting resources in different areas of the state and reminded the Advisory Group that the building code is uniform statewide. The fire service professional shared additional thoughts on the challenges of small fire departments, the data presented regarding the relative safety of different housing types, the prevalence of fire sprinklers in multifamily structures, and the ever-changing challenges from new fire hazards (ex. e-bikes and electric vehicles). He further remarked that the problem with single stairwell congestion (firefighters going up, occupants going down) will be very difficult to address even with additional safety features.

Future Considerations

Advisory Group members agreed that structures above three stories with two or more stairs currently have certain fire safety protection measures in place with the understanding that two or more stairs will be present. The Advisory Group acknowledged that there are additional safety challenges and considerations when a staircase is removed from a structure that would otherwise require two staircases under the current building code. The Advisory Group questioned what additional fire safety protection measures need to be present to ensure the safety of residents when a structure (four to six stories) is limited to a single-staircase. Advisory Group members noted that there is currently a spectrum of requirements for structures four to six stories, so it could be possible for a building code proposal to have a spectrum of added requirements for single stair construction (ex. a maximum build for six stories, a minimum build for four stories).

Throughout the meeting, Advisory Group members discussed potential (upgraded) fire safety protections when only one staircase is present in a structure four to six stories. A future single-staircase code proposal could include, but would not be limited to, the following added fire safety protections:

- Requiring construction type 1 or 2 (non-combustible materials) for any single-stair building over three stories
- Closer exterior access to building for fire departments
- Capability of fire department (accreditation)
- Wider egress width. Advisory Group discussed a 60-inch requirement

- Limiting the number of units per floor or net floor area to control occupant load
- Limiting and clearly defining occupied floors
- Pressurizing exit stair enclosure to prevent smoke from entering
- Mechanical smoke ventilation system
- Higher sprinkler density above and beyond current requirements
- Early smoke detection in common areas (stairwell itself)
- Special inspections for penetrations of rated assemblies

**Meeting Summary
Single-staircase Advisory Group
November 6, 2024
12:00 PM
Twin Hickory Area Library
5001 Twin Hickory Road, Glen Allen, VA**

Advisory Group Member Present:

William Abrahamson, American Institute of Architects Virginia
Hampton Barclay, Private Developer
Eric Cavallo, Private Contractor
Ron Clements, Virginia Building and Code Officials Association
Rick Hinson, American Council of Engineering Companies of Virginia
Alex Horowitz, Pew Charitable Trusts
Billy Hux, State Fire Marshal
Jason Laws, Virginia Building and Code Officials Association
Andrew Milliken, Virginia Fire Services Board
Lyle Solla-Yates, Charlottesville Planning Commission
Dan Willham, Virginia Building and Code Officials Association

DHCD staff attending for all or part of the meeting:

Jeff Brown, State Building Codes Office Director
Andrew Malloy, Policy Analyst
Florin Moldovan, Code and Regulation Specialist
Chase Sawyer, Policy and Legislative Services Manager

Key Takeaways

- The Advisory Group made technical corrections to the draft report to improve its accuracy and limit potential misunderstandings.
- The Advisory Group made additions to the report to provide future workgroups more research and information on this topic.
- The Advisory Group agreed on the contents of the report and the recommendations included within it.

Summary

Department of Housing and Community Development (DHCD) staff opened the floor for public comments at the beginning of the third meeting of the Single-staircase Advisory Group (Advisory Group). DHCD staff shared the draft Advisory Group report with the public prior to the meeting, allowing them the opportunity to comment on its contents.

Two fire service professionals made public comments. The first fire service professional listed the fire service organizations that oppose single-staircase proposals and the concerns they have with escape and rescue operations in single-stair structures. He commended the current code

development process in Virginia and emphasized that Virginia has a consensus-based approach. The fire service professional further noted the lack of consensus among stakeholders and urged attendees to hear the concerns of fire safety professionals. He highlighted that current limits on single-stair construction are based on decades of research and investigations of fires in multifamily buildings. The second fire service professional supported the intentions behind this proposal to help address housing affordability. She shared her concerns that more people are experiencing homelessness because of unaffordable housing, especially in northern Virginia. However, she shared concerns that single-stair construction would put occupants at risk. She shared her experience as a first responder needing to block/shut down a staircase in order to transport a patient. She also shared concerns that victims of domestic violence would be limited in their escape options if only one staircase/exit were available.

After the public comments, DHCD staff provided a brief overview of the draft report. DHCD staff invited Advisory Group members to share feedback, comments, edits and additions to the report.

During the discussion, the following edits were made to the draft report:

- i. In the background section, Advisory Group members clarified that a model single-staircase proposal was not *developed* by the Advisory Group. Even though different model proposals were discussed in general terms, it would not be accurate to say that the Advisory Group disagreed on specific elements of a proposal.
- ii. In the history section, updates were made to reflect the recent efforts of the ICC at the 2024 International Code Council's Committee Action Hearings in Long Beach, CA.
- iii. In the section on fire safety considerations, the description and definition of Emergency Escape and Rescue Openings (EEROs) was corrected.
- iv. In the list of potential (upgraded) fire safety protections, "ISO class 1 rating" was added to describe the capability of fire departments. This was added to reflect the official industry designation.
- v. In the list of potential (upgraded) fire safety protections, Advisory Group members added clarification that future workgroups should work to define occupied floors, roofs, stories, podiums, and grades. As discussed in prior Advisory Group meetings, there are several nuances and differences between occupied stories, occupied floors, occupied roofs, stories above grade, and podium construction as it relates to the parameters defined in the authorizing legislation.
- vi. Regarding the list of potential fire safety protections, Advisory Group members said that a cost/benefit analysis should be performed on these requirements. Advisory Group members shared concerns that some of these potential requirements would be overly burdensome for builders and would make single-staircase structures too costly. Advisory Group members also shared that some items on the list may have negligible fire safety benefits that would not outweigh the costs they would impose. Advisory Group members

clarified that the list of added fire safety protections is not exhaustive, nor should it be interpreted that all of these protections need to be added in order to reach consensus on this issue. Additionally, the fire safety protections may not all be necessary to mitigate safety risks. DHCD staff also noted that the list of upgraded protections is not presented in any particular order, level of importance, or effectiveness. The list serves as a starting point for future workgroups to consider.

- vii. The Advisory Group discussed the specific elements of ICC code change proposal E24-24 as modified by AMC2 (Shapiro MC-1). This proposal as modified would allow single-staircase (exit) buildings up to four stories with additional requirements including limiting net floor area, requiring sprinklers compliant with combustible stairways regardless of construction type, prohibiting electrical receptacles in the stairway, certain requirements for fire alarms and smoke detection systems, and certain requirements for the openings to the stairway. The Advisory Group added to the report that the provisions of floor modification E24-MC1 may provide a beneficial framework for a future single staircase code change proposal.
- viii. Advisory Group members suggested additions to the benefits sections to more fully summarize the positions in the attached research articles included in the appendix of the report. Advisory Group members shared benefits of single-stair construction including the flexibility to add more types of multifamily housing, more natural light and ventilation, and adding to the historical appeal of downtown areas.
- ix. The Advisory Group made one edit to the recommendations. Advisory Group members specifically named the ICC code change proposal E24-24 as modified as a proposal that a special workgroup in the 2024 building code update cycle should discuss and consider.

After no other edits or additions were proposed by Advisory Group members, DHCD staff again opened the floor for public comments. No additional public comments were made.

Next Steps

The Advisory Group approved of the report's contents following the incorporation of the revisions discussed and agreed to during the meeting. DHCD staff discussed a deadline for accepting additional statements and research items to be included in the report appendix.

B1110.20-24

IBC: 1110.4, 1110.4.1, 1110.4.1.1 (New), 1110.4.2, 1110.4.3, 1110.4.4, 1110.4.5 (New), 1110.4.6 (New)

Proponents: Elizabeth Bennett-Parker, representing Virginia House of Delegates District 5 (delebennett-parker@house.virginia.gov)

2024 International Building Code

Revise as follows:

1110.4 Adult changing stations and baby diaper changing tables. Where provided, adult changing stations shall be accessible. Where required, adult changing stations and baby diaper changing tables shall be accessible and shall comply with Sections 1110.4.1 through ~~1110.4.4~~ 1110.4.6.

1110.4.1 Where required - adult changing stations. Not fewer than one adult changing station shall be provided in the following locations:

1. In assembly and mercantile occupancies, where family or assisted-use toilet or bathing rooms are required to comply with Section 1110.2.1.
2. In Group B occupancies providing educational *facilities* for students above the 12th grade, where an aggregate of 12 or more male and female water closets are required to serve the classrooms and lecture halls.
3. In Group E occupancies, where a room or space used for assembly purposes requires an aggregate of six or more male and female water closets for that room or space.
4. In highway rest stops and highway service plazas.

Add new text as follows:

1110.4.1.1 Where required - baby diaper changing tables. Not fewer than one baby diaper changing table that is accessible to both male and female occupants shall be provided in the following locations :

1. In group A, B, E, and M occupancies.
2. In Group R-1 hotels and motels on each floor level containing a public toilet facility.
3. In highway rest stops.

Revise as follows:

1110.4.2 Room. Adult changing stations shall be located in toilet rooms that include only one water closet and only one lavatory. Baby diaper changing tables may be located in dressing rooms, changing rooms, or toilet rooms that include more than one water closet and one lavatory, provided that at least one baby diaper changing table is accessible to both male and female occupants. However, where public toilet facilities containing only one water closet and one lavatory are provided, baby diaper changing tables shall be located within such facilities. Fixtures located in such rooms shall be included in determining the number of fixtures provided in an occupancy. The occupants shall have access to the required adult changing station and baby diaper changing table at all times that the associated occupancy is occupied.

Exception: Adult changing stations shall be permitted to be located in family or assisted toilet rooms required in Section 1110.2.1.

1110.4.3 Prohibited location. The *accessible route* from separate-sex toilet or bathing rooms to an accessible adult changing station or baby diaper changing table shall not require travel through security checkpoints.

1110.4.4 Travel distance. The adult changing station or baby diaper changing table shall be located on an *accessible route* such that a

person is not more than two stories above or below the story with the adult changing station or baby diaper changing table and the path of travel to such facility shall not exceed 2,000 feet (609.6 m).

Add new text as follows:

1110.4.5 Baby diaper changing tables. Baby diaper changing tables shall comply with operable parts and Section 902 of ICC A117.1. Baby diaper changing tables shall support a load capacity of at least 50 pounds and dimensions of minimum 32 inches x minimum 17.5 inches when open. Baby diaper changing tables shall not be located in wheelchair accessible toilet compartments. Baby diaper changing tables located in single-user or family or companion toilet rooms shall not overlap the maneuvering clearance around the water closet or the accessible route to the transfer space when in the useable position.

Exceptions:

1. Self-closing baby diaper changing tables shall be permitted to be measured in the stowed position.
2. In alterations, when provided, baby diaper changing tables shall be permitted outside the maneuvering clearance around the water closet in wheelchair accessible toilet compartments.

1110.4.6 Signage. Required baby diaper changing tables shall be identified with signs that are readily visible and located near the entrance to each facility containing the required baby diaper changing table. Signs shall comply with Section 1112.

Reason Statement:

This proposal would require some new construction buildings to provide baby changing stations in restrooms that are accessible to all caregivers. This proposal works in concert with the requirements for adult or universal diaper changing stations included in the 2024 International Construction Code Standards that Virginia plans to adopt in this code cycle.

Parents and caregivers need access to safe, sanitary diaper changing facilities in public spaces. Babies require frequent diaper changes, averaging six per day and roughly 3,000 in their first year. Despite this, studies show that only a small fraction of public restrooms include changing stations: a 2021 survey of restaurants published on the National Institutes of Health website found that only 16.7% had diaper changing stations. Similarly, a University of Illinois survey found that only 2% of campus restrooms had changing stations. In their absence, parents are often forced to improvise. In a Munchkin poll of 1,000 parents, 94% reported changing a diaper in their car (which only works if you have a car), 58% in a dressing room, and 22% said they had skipped plans due to lack of facilities. Additionally, the issue is greater for fathers. According to a survey by Pampers, 90% of dads have not been able to access a diaper changing station.

The absence of appropriate diaper changing facilities poses real health and safety risks. Without designated changing areas, caregivers may be forced to change infants on restroom floors, sinks, tables, or other unsanitary surfaces, increasing the risk of falls, contamination, and the spread of disease.

Research published in Pediatrics found that access to high-quality diaper changing equipment is associated with fewer diarrheal episodes in children and fewer sick days among childcare staff. Public health organizations including the Centers for Disease Control and Prevention (CDC) and the Partnership for Food Safety Education have warned that improper diaper changing practices can contribute to the spread of pathogens such as E. coli, norovirus, and rotavirus. Providing safe, dedicated facilities helps protect both children and the public by reducing these risks.

A growing number of states including Arizona, Nevada, New Mexico, Utah, Wisconsin, Washington, Oregon, California, New York, Connecticut, Delaware, Illinois, Rhode Island, and Washington, D.C. have already adopted similar requirements. Moving forward with this proposal would align Virginia with national trends while advancing family accessibility, public health, and safety.

Finally, this proposal benefits both families and businesses. Families are more likely to visit and remain in establishments where changing facilities are reliably available, with 74% of parents reporting that they prefer to frequent businesses that provide such amenities. Ensuring safe, sanitary, and equitable diaper changing access supports caregivers, improves hygiene, and helps create a more inclusive built environment across the Commonwealth.

Cost Impact: The code change proposal will increase the cost This proposal may lead to very minimal cost increases for the construction of new buildings as it would require the addition of baby changing tables in restrooms in some occupancies.

B3005.4-24

VCC: 3005.4; IBC: 3005.4

Proponents: Ron Clements, Chesterfield, representing Building Inspection Department (clementsro@chesterfield.gov)

2021 Virginia Construction Code

Delete without substitution:

3005.4 Machine and control rooms, control spaces, and machinery spaces. Elevator machine rooms, rooms and spaces housing elevator controllers, and machinery spaces outside of, but attached to, a hoistway that have openings into the hoistway shall be enclosed with fire barriers constructed in accordance with Section 707 or horizontal assemblies constructed in accordance with Section 711, or both. The fire-resistance rating shall not be less than the required rating of the hoistway enclosure. Openings in the fire barriers shall be protected with assemblies having a fire protection rating not less than that required for the hoistway enclosure doors.

Exceptions:

1. For other than fire service access elevators and occupant evacuation elevators, where elevator machine rooms, rooms and spaces housing elevator controllers, and machinery spaces do not abut and do not have openings to the hoistway enclosure they serve, the fire barrier constructed in accordance with Section 707 or horizontal assemblies constructed in accordance with Section 711, or both, shall be permitted to be reduced to a 1-hour fire-resistance rating.
2. For other than fire service access elevators and occupant evacuation elevators, in *buildings* four stories or less above grade plane when elevator machine rooms, rooms and spaces housing elevator controllers, and machinery spaces do not abut and have no openings to the hoistway enclosure they serve, the elevator machine rooms, rooms and spaces housing elevator controllers, and machinery spaces are not required to be fire-resistance rated.

2024 International Building Code

3005.4 Machine rooms, control rooms, machinery spaces, and control spaces. The following rooms and spaces shall be enclosed with *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both:

1. Machine rooms.
2. Control rooms.
3. Control spaces.
4. Machinery spaces outside of the hoistway enclosure.

The *fire-resistance rating* shall be not less than the required rating of the hoistway enclosure served by the machinery. Openings in the *fire barriers* shall be protected with assemblies having a *fire protection rating* not less than that required for the hoistway enclosure doors.

Exceptions:

1. For other than fire service access elevators and occupant evacuation elevators, where machine rooms, machinery spaces, control rooms and control spaces do not abut and do not have openings to the hoistway enclosure they serve, the *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both, shall be permitted to be reduced to a 1-hour *fire-resistance rating*.

2. For other than fire service access elevators and occupant evacuation elevators, in *buildings* four *stories* or less above *grade plane* where machine room, machinery spaces, control rooms and control spaces do not abut and do not have openings to the hoistway enclosure they serve, the machine room, machinery spaces, control rooms and control spaces are not required to be fire-resistance rated.

Reason Statement: This code change is to remove the state amendment to VCC 3005.4 and default back to the 2024 IBC Section 3005.4 text without any state amendment. The current Virginia amendment to VCC Section 3005.4 is broken. The body of the Section is specific to fire rating requirements for machine/equipment rooms and spaces that are attached to the elevator shaft. The exceptions are for rooms and spaces that do not abut the shaft, so the exceptions will never be valid and the VCC is silent on how to treat machine rooms and spaces that do not abut the shaft. The 2024 IBC version of 3005.4 does not have this problem so the simple fix is to remove the state amendment and use the 2024 IBC text without state amendment.

Cost Impact: The code change proposal will not increase or decrease the cost . This code change is fixing a broken Virginia amendment.

B3301.1-24

IBC: 3301.1, SECTION 3302, 3302.1, 3302.1.1, 3302.2, 3302.3, 3302.3.1; VEBC: 1201.1, 1201.5

Proponents: Ron Clements, Chesterfield, representing Building Inspection Department (clementsro@chesterfield.gov)

2024 International Building Code

Revise as follows:

3301.1 Scope. The provisions of this chapter shall govern safety during construction and the protection of adjacent public and private properties. ~~Fire safety during construction shall also comply with the applicable provisions of Chapter 33 of the *International Fire Code*.~~
~~Note: Fire Safety During Construction plans may be required by the Fire Code Official prior to construction operations in accordance with the Statewide Fire Prevention Code.~~

Delete without substitution:

SECTION 3302 OWNER'S RESPONSIBILITY FOR FIRE PROTECTION

3302.1 Site safety plan. ~~The owner or owner's authorized agent shall be responsible for the development, implementation and maintenance of an *approved*, written site safety plan establishing a fire prevention program at the project site applicable throughout all phases of the construction, *repair, alteration* or demolition work. The plan shall be submitted and *approved* before a *building permit* is issued. Any changes to the plan shall address the requirements of this chapter and other applicable portions of the *International Fire Code*, the duties of staff and staff training requirements. The plan shall be submitted for approval in accordance with the *International Fire Code*.~~

3302.1.1 Components of site safety plans. ~~Site safety plans shall include the following, as applicable:~~

- ~~1. Name and contact information of site safety director.~~
- ~~2. Documentation of the training of the site safety director and fire watch personnel.~~
- ~~3. Procedures for reporting emergencies.~~
- ~~4. Fire department vehicle access routes.~~
- ~~5. Location of fire protection equipment, including portable fire extinguishers, *standpipes*, fire department connections and fire hydrants.~~
- ~~6. Smoking and cooking policies, designated areas to be used where *approved*, and signage locations in accordance with the *International Fire Code*.~~
- ~~7. Location and safety considerations for temporary heating equipment.~~
- ~~8. Hot-work permit plan.~~
- ~~9. Plans for control of combustible waste material.~~
- ~~10. Locations and methods for storage and use of *flammable* and *combustible liquids* and other *hazardous materials*.~~
- ~~11. Provisions for site security and, where required, for a fire watch.~~
- ~~12. Changes that affect this plan.~~
- ~~13. Other site-specific information required by the *International Fire Code*.~~

3302.2 Site safety director. ~~The owner shall designate a *person* to be the site safety director. The site safety director shall be~~

responsible for ensuring compliance with the site safety plan. The site safety director shall have the authority to enforce the provisions of this chapter and other provisions as necessary to secure the intent of this chapter. Where guard service is provided in accordance with the *International Fire Code*, the site safety director shall be responsible for the guard service.

3302.3 Daily fire safety inspection. The site safety director shall be responsible for the completion of a daily fire safety inspection at the project site. Each day, all *building* and outdoor areas shall be inspected to ensure compliance with the inspection list in this section. The results of each inspection shall be documented and maintained on-site until a certificate of occupancy has been issued. Documentation shall be immediately available for on-site inspection and review.

1. Any contractors entering the site to perform hot work each day have been instructed in the hot work safety requirements in the *International Fire Code*, and hot work is performed only in areas *approved* by the site safety director.
2. Temporary heating equipment is maintained away from combustible materials in accordance with the equipment manufacturer's instructions.
3. Combustible debris, rubbish and waste material is removed from the *building* in areas where work is not being performed.
4. Temporary wiring does not have exposed conductors.
5. *Flammable liquids* and other *hazardous materials* are stored in locations that have been approved by the site safety director when not involved in work that is being performed.
6. Fire apparatus access roads required by the *International Fire Code* are maintained clear of obstructions that reduce the width of the usable roadway to less than 20 feet (6096 mm).
7. Fire hydrants are clearly visible from access roads and are not obstructed.
8. The location of fire department connections to standpipe and in-service sprinkler systems are clearly identifiable from the access road and such connections are not obstructed.
9. Standpipe systems are in service and continuous to the highest work floor, as specified in Section 3311.
10. Portable fire extinguishers are available in locations required by Section 3309 and for roofing operations in accordance with the *International Fire Code*.
11. Where a *fire watch* is required, fire watch records complying with the *International Fire Code* are up-to-date.

3302.3.1 Violations. Failure to properly conduct, document and maintain documentation required by this section shall constitute an unlawful act in accordance with Section 114.1 and shall result in the issuance of a notice of violation to the site safety director in accordance with Section 114.2. Upon the third offense, the *building official* is authorized to issue a stop work order in accordance with Section 115, and work shall not resume until satisfactory assurances of future compliance have been presented to and *approved* by the *building official*.

2021 Virginia Existing Building Code

Revise as follows:

1201.1 Scope. The provisions of this chapter shall govern safety during construction that is under the jurisdiction of this code and the protection of adjacent public and private properties.

Note: Fire Safety During Construction plans may be required by the Fire Code Official prior to construction operations in accordance with the Statewide Fire Prevention Code.

Delete without substitution:

1201.5 Fire safety during construction. Fire safety during construction shall comply with the applicable requirements of the *International Building Code* and the applicable provisions of Chapter 33 of the *International Fire Code*.

Reason Statement: These provisions are operations and maintenance provisions copied out of the IFC and are beyond the scope of building code regulations. Though the IFC and IBC have numerous provisions copied between the codes, the USBC and SFPC have clear lines of delineation between building construction regulations in the USBC and maintenance and operations regulations in the SFPC. These provisions are not regulating the building construction, they are regulating the construction operation, and maintenance of the construction site, which should not be in the USBC and are likely invalid. These provisions will remain in the SFPC. This code change also contributes to regulatory reduction.

Cost Impact: The code change proposal will not increase or decrease the cost . The requirements proposed for deletion remain in the SFPC so this code change will not significantly decrease the costs for the owner to develop and manage the plan required by the SFPC.

B3500(1)-24

VCC: ASTM Chapter 35

Proponents: William Hinson, Jr. PE, ECS Mid-Atlantic LLC, representing Self (whinson@ecslimited.com)

2021 Virginia Construction Code

ASTM

E329—02: ~~E329-25a:~~ Standard Specification for Agencies Engaged in the ~~Testing and/or Inspection of Materials Used in~~ Construction Inspection, Testing, or Special Inspection

Reason Statement: This specification defines the minimum requirements for inspection agencies personnel or testing agency laboratory personnel or both, and the minimum technical requirements for equipment and procedures utilized in the testing and inspection of construction and materials used in construction. This specification defines the minimum requirements for agencies and personnel engaged in any of the following.

- a. Inspection of specified methods and materials used in construction
- b. Special Inspection
- c. Testing of materials used in construction

The current edition of the ASTM E329 standard has not changed in several code change cycles and in the 2021 code cycle was specified as the 2002 edition (ASTM E329-02). Since that edition, the standard has been updated and revised and is now in its 2021 edition. Since materials have changed with time, such as the addition of Mass or Tall Wood structures, the reference standard should also be updated. The 2021 edition of ASTM E329 was last updated in December of 2023.

Cost Impact: No cost impact is expected, this is limited to a reference standard edition update.

RB311-24

IRC: SECTION R318, R318.1

Proponents: Kyle Kratzer, Fairfax County, representing VBCOA (kyle.kratzer@fairfaxcounty.gov)

2024 International Residential Code

SECTION R318 MEANS OF EGRESS

Revise as follows:

R318.1 Means of egress. *Dwelling units, and detached accessory structures with habitable space* shall be provided with a means of egress in accordance with this section. The means of egress shall provide a continuous and unobstructed path of vertical and horizontal egress travel from all portions of the *dwelling unit* to the required egress door without requiring travel through a garage. The required egress door shall open directly into a *public way* or to a *yard* or *court* that opens to a *public way*.

Reason Statement: This change clarifies that all habitable spaces must include a means of egress that complies with Section R311. The added language eliminates ambiguity, ensuring consistent enforcement of this requirement.

Cost Impact: The code change proposal will not increase or decrease the cost
This change clarifies existing requirements and is not expected to impact construction costs.

RB314.3-24

IRC: R310.3, R330.7

Proponents: Kyle Kratzer, Fairfax County, representing VBCOA (kyle.kratzer@fairfaxcounty.gov)

2024 International Residential Code

Revise as follows:

R310.3 Location. Smoke alarms shall be installed in the following locations:

1. In each sleeping room.
2. Outside each separate sleeping area in the immediate vicinity of the bedrooms.
3. On each additional *story* of the *dwelling unit*, including *basements* and *habitable attics* and not including *crawl spaces* and *uninhabitable attics*. In *dwelling units* with split levels and without an intervening door between the adjacent levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level is less than one full *story* below the upper level.
4. Not less than 3 feet (914 mm) horizontally from the door or opening of a bathroom that contains a bathtub or shower unless this would prevent placement of a smoke alarm required by this section.
5. In the hallway and in the room open to the hallway in *dwelling units* where the *ceiling height* of a room open to a hallway serving bedrooms exceeds that of the hallway by 24 inches (610 mm) or more.
6. Within the room to which a *sleeping loft* is open, in the immediate vicinity of the *sleeping loft*.
7. In rooms and areas within dwelling units, basements and attached garages in which Energy Storage Systems are installed.

Exception: A heat detector, listed and interconnected to the smoke alarms, shall be installed in locations within dwelling units and attached garages where smoke alarms cannot be installed based on their listing.

R330.7 Fire detection. ~~Rooms and areas within *dwelling units*, *basements* and attached garages in which *ESS* are installed shall be protected by smoke alarms in accordance with Section R310. A heat detector, *listed* and interconnected to the smoke alarms, shall be installed in locations within *dwelling units* and attached garages where smoke alarms cannot be installed based on their listing.~~

Reason Statement: This change relocates the required smoke alarm provision for Energy Storage Systems from Section R328 to Section R314. This adjustment improves code readability and ensures alignment with the current structure.

Cost Impact: The code change proposal will not increase or decrease the cost This change is editorial in nature and has no bearing on the cost of construction.

RB318.7.6-24

IRC: R318.7.6

Proponents: Andrew Clark, representing Home Builders Association of Virginia (aclark@hbav.com)

2024 International Residential Code

Revise as follows:

R318.7.6 Landings for stairways. There shall be a floor or landing at the top and bottom of each *flight* of stairs. The width perpendicular to the direction of travel shall be not less than the width of the *flight* served. For landings of shapes other than square or rectangular, the depth at the walk line and the total area shall be not less than that of a quarter circle with a radius equal to the required landing width. Where the *stairway* has a straight run, the depth in the direction of travel shall be not less than 36 inches (914 mm).

Exceptions:

1. The top landing of an interior *stairway*, including those in an enclosed garage, shall be permitted to be on the other side of a door located at the top of the *stairway*, provided that the door does not swing over the stairs.
2. At an enclosed garage, the top landing at the *stair* shall be permitted to be not more than $7\frac{3}{4}$ inches (197 mm) below the top of the threshold.
3. ~~Where there are not more than two risers at~~ At an exterior doors door, and the door does not swing over the tread a top landing is not required for an exterior stairway of not more than two risers, provided that the door does not swing over the *stairway*.
4. ~~An exterior flight of stairs~~ Exterior *stairways* to grade with three or fewer *risers* serving a deck, porch or patio shall have a bottom landing width of not less than 36 inches (914 mm), provided that the stairway is not the required access to grade serving the required egress door.

Reason Statement: This proposal consolidates and clarifies the International Residential Code's (IRC) stairway landing requirements, as adopted during the 2024 IRC code development process, and incorporates consensus revisions from the ongoing 2027 code development process to further improve clarity and consistency.

The 2024 IRC reorganized and streamlined stairway landing provisions by consolidating all requirements and exceptions into a single location—Section R318.7.6. This structural revision eliminates redundancy, aligns related provisions, and clarifies application. Exceptions previously located in multiple sections of the 2021 IRC were relocated as follows:

- Section R311.7.6, Landings for stairways: Now R318.7.6, Exception 1
- Section R311.3.1, Floor elevations at required egress doors: Now R318.7.6, Exception 2
- Section R311.3.2, Floor elevations at other exterior doors : Now R318.7.6, Exception 3

The 2024 IRC added Section R318.7.6, Exception 4, which requires a landing at the base of short exterior stairs, such as those serving decks or porches. The new requirement improves safety by providing a stable, level transition surface where exterior steps are most frequently used.

Additionally, this proposal also incorporates clarifying revisions from a consensus proposal under consideration in the 2027 code development process:

- Exception 3 clarifies that a stair with two risers and no landing is not a stairway but a single tread, correcting misuse of the defined term and improving clarity through streamlined syntax.
- Exception 4 replaces stairway with flight of stairs to accurately apply the exception to stairways that include an intermediate landing and a bottom flight of three or fewer risers.

Cost Impact: The code change proposal will not increase or decrease the cost The construction cost impact of this proposal is undetermined at this time.

RB322.3.6-24

VRC: R322.3.6

Proponents: Corian Carney, representing York County (corian.carney@yorkcounty.gov)

2021 Virginia Residential Code

Revise as follows:

R322.3.6 Enclosed areas below required elevation. Enclosed areas below the design flood elevation required in Section R322.3.2 are prohibited in Coastal A Zones and Coastal High Hazard Areas.

Exception: Elevator shaft enclosures designed in accordance with ASCE 24.

Reason Statement: I believe the intent behind this original adoption was to prohibit garages or other storage areas within the Coastal A and Coastal High Hazard areas. I do not believe the intent was to prohibit elevator installations. This may impact elderly or disabled persons who would not otherwise be able to easily access their homes in these areas. See attached interpretation from the State Building Code Technical Review Board.

Cost Impact: The code change proposal will not increase or decrease the cost as elevators are not required equipment.

Attached Files

- **technical-memos-bulletins-2025-enclosed-area-below-required-elevation-interpretation-1-2025.pdf**
<https://va.cdpaccess.com/proposal/1286/1896/files/download/918/>

VIRGINIA STATE BUILDING CODE TECHNICAL REVIEW BOARD

I N T E R P R E T A T I O N

Interpretation Number: 1/2025

Code: USBC, Part I, Virginia Construction Code/2021

Section No: Section R322.3.6

R322.3.6 Enclosed areas below required elevation.

Enclosed areas below the design flood elevation required in Section R322.3.2 are prohibited in Coastal A Zones and Coastal High Hazard Areas.

QUESTION: Would the provision in this section prohibit the installation of elevator shaft enclosures in Coastal A and Coastal High Hazard Areas?

ANSWER: Yes.

QUESTION: If walls are constructed below required flood elevation on three (3) sides of a structure, would that be considered "enclosed" for the purpose of this section?

ANSWER: No.

This Official Interpretation was issued by the State Building Code Technical Review Board at its meeting of April 18, 2024.

Chair, State Building Code Technical Review Board

RB339-24

IRC: SECTION R339 HEMP-LIME (HEMPCRETE) CONSTRUCTION) (New), 339.1 (New)

Proponents: Scott McStacy, Seed to Structure LLC, representing Self (scottmcstacy@gmail.com)

2024 International Residential Code

Add new text as follows:

SECTION R339 HEMP-LIME (HEMPCRETE) CONSTRUCTION)

339.1 General. Appendix BL may be used as an alternative to this code.

Reason Statement: Statement of Purpose

This proposal seeks to adopt Appendix BL – Hemp-Lime (Hempcrete) Construction from the 2024 International Residential Code (IRC) into the Virginia Residential Code. Adoption will provide clear, prescriptive guidance for the use of hemp-lime as a nonstructural wall infill system in Virginia residential construction, ensuring consistency, safety, and innovation in sustainable building practices.

Problem Statement

Hemp-lime (“hempcrete”) is an increasingly used construction material in Virginia and across the U.S. It provides superior insulation, moisture regulation, and carbon sequestration, while using locally grown agricultural products. Currently, hemp-lime construction in Virginia can only be approved through USBC §104.11 – Alternative Materials and Methods, which requires case-by-case approvals by local building officials. This creates unnecessary uncertainty, delays, and inconsistency for builders, homeowners, and code officials.

Since hemp-lime construction is now formally recognized in the 2024 IRC (Appendix BL)—the model code on which Virginia’s USBC is based—Virginia should adopt Appendix BL into the VRC. This will align the state code with the latest national standards and provide clarity and predictability to the building community.

Supporting Information

- IRC 2024 Appendix BL provides prescriptive provisions for hemp-lime construction, including material requirements, fire safety, story limitations, and seismic scope.
- Hemp-lime has been demonstrated to meet or exceed fire resistance, durability, and thermal performance standards when used as designed.
- The appendix limits prescriptive use to one- and two-family dwellings up to two stories in low-seismic regions, with engineered design required outside these limits.
- This proposal does not create new regulatory burdens but instead aligns Virginia with national code standards already vetted and approved by the International Code Council (ICC).
- Recognized benefits of hemp-lime include:
 - Fire resistance (documented ASTM E84 performance).
 - Durability and moisture regulation (reduces mold/mildew risk).
 - Carbon sequestration, supporting Virginia’s climate goals.
 - Local agricultural and economic benefits, supporting Virginia hemp farmers.

Economic Impact

- For Builders/Homeowners: Reduced cost and delay from not requiring alternative materials approval for each project.
- For Local Jurisdictions: Simplifies plan review and inspection by providing prescriptive standards.
- For Industry and Agriculture: Supports Virginia-grown hemp and the development of a local supply chain for sustainable building materials.

Justification

Adopting Appendix BL ensures that Virginia:

1. Remains current with national model codes.
2. Supports safe, innovative, and sustainable construction.
3. Reduces administrative burdens on builders, homeowners, and code officials.
4. Encourages economic growth in both construction and agriculture.

Cost Impact: The code change proposal will decrease the cost Costs will dramatically decrease with the adoption of this Appendix BL

Attached Files

- **Va Code Change Proposal.docx**

<https://va.cdpassess.com/proposal/1423/2166/files/download/947/>

Virginia Code Change Proposal – Adoption of IRC 2024 Appendix BL (Hemp-Lime Construction)

Title: Adoption of IRC 2024 Appendix BL – Hemp-Lime (Hempcrete) Construction into the Virginia Residential Code

Code Section(s): Virginia Residential Code (VRC) – Appendices

Proposal Type: Add new Appendix

Statement of Purpose

This proposal seeks to adopt Appendix BL – Hemp-Lime (Hempcrete) Construction from the 2024 International Residential Code (IRC) into the Virginia Residential Code. Adoption will provide clear, prescriptive guidance for the use of hemp-lime as a nonstructural wall infill system in Virginia residential construction, ensuring consistency, safety, and innovation in sustainable building practices.

Problem Statement

Hemp-lime (“hempcrete”) is an increasingly used construction material in Virginia and across the U.S. It provides superior insulation, moisture regulation, and carbon sequestration, while using locally grown agricultural products. Currently, hemp-lime construction in Virginia can only be approved through USBC §104.11 – Alternative Materials and Methods, which requires case-by-case approvals by local building officials. This creates unnecessary uncertainty, delays, and inconsistency for builders, homeowners, and code officials.

Since hemp-lime construction is now formally recognized in the 2024 IRC (Appendix BL)—the model code on which Virginia’s USBC is based—Virginia should adopt Appendix BL into the VRC. This will align the state code with the latest national standards and provide clarity and predictability to the building community.

Proposed Code Change

Amend the Virginia Residential Code to add:

Appendix BL – Hemp-Lime (Hempcrete) Construction

(Adopt in its entirety from the 2024 International Residential Code, with no amendments.)

Supporting Information

- IRC 2024 Appendix BL provides prescriptive provisions for hemp-lime construction, including material requirements, fire safety, story limitations, and seismic scope.
 - Hemp-lime has been demonstrated to meet or exceed fire resistance, durability, and thermal performance standards when used as designed.
 - The appendix limits prescriptive use to one- and two-family dwellings up to two stories in low-seismic regions, with engineered design required outside these limits.
 - This proposal does not create new regulatory burdens but instead aligns Virginia with national code standards already vetted and approved by the International Code Council (ICC).
 - Recognized benefits of hemp-lime include:
 - Fire resistance (documented ASTM E84 performance).
 - Durability and moisture regulation (reduces mold/mildew risk).
 - Carbon sequestration, supporting Virginia’s climate goals.
 - Local agricultural and economic benefits, supporting Virginia hemp farmers.
-

Economic Impact

- For Builders/Homeowners: Reduced cost and delay from not requiring alternative materials approval for each project.
 - For Local Jurisdictions: Simplifies plan review and inspection by providing prescriptive standards.
 - For Industry and Agriculture: Supports Virginia-grown hemp and the development of a local supply chain for sustainable building materials.
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Justification

Adopting Appendix BL ensures that Virginia:

1. Remains current with national model codes.
2. Supports safe, innovative, and sustainable construction.
3. Reduces administrative burdens on builders, homeowners, and code officials.
4. Encourages economic growth in both construction and agriculture.

Public Comments (PCH) for: RB339-24

Discussion by Scott McStacy

Oct 29, 2025 19:39 UTC

Let's do this, all comments are welcome!

Discussion by Scott McStacy

Aug 30, 2025 12:08 UTC

I would like to start the discussion with this, hemp-lime is already in the IRC (International Residential Code). It's been used enough to be able to understand its properties and value. Are there any reasons that it should not be in the code?

Proposal # 1423

EC-C402.1.6(1)-24

VECC: C402.1.6, CD101.1

Proponents: William Penniman, representing Sierra Club Virginia Chapter (wpenniman@aol.com)

2021 Virginia Energy Code

Revise as follows:

C402.1.6 Groups F, S, and U. Appendix CD may be used as an alternative to the *building thermal envelope* provisions of this code for buildings in Groups F, S, and U: U that are not designed or equipped to heat the interior to more than 60°F or to cool the interior other than by fans or natural ventilation.

CD101.1 General. These provisions shall be permitted as an alternative to *building thermal envelope* requirements for building areas containing uses that are classified as Group F, S or U: U that are not designed or equipped to be heated to a temperature above 60°F or to be cooled other than by fans or natural ventilation.

Reason Statement:

This proposal would narrow a broad, unsupported rollback of minimum envelope energy efficiency standards for commercial Categories F, S and U from complying with the IECC to a level comparable to the 2006 version of the IECC.

The modification would reasonably limit the use of Appendix CD to buildings that are not designed or equipped to heat their interiors above 60°F or to cool them other than by fans or natural ventilation, which are the only situations that might justifiably use the greatly weakened thermal efficiency standards in Appendix CD. This is an alternative to the proposal to delete EC-C402.1.6 and Appendix CD.

Restricting the scope of Appendix CD as proposed herein is responsive to the only substantive objection that was given in support of Appendix CD during the 2021 Cycle. The proponent of Appendix CD cited a proposed “warehouse project used for storage of materials with heat maintained at 60 degrees or less and no cooling” and, more generally, a subset of warehouses with low heating needs. In the proponent's words:

“The current energy code requirements are over burdensome for Factory Group F, Storage Group S, and Utility and Miscellaneous Group U. These use groups do not traditionally use a lot of energy as they are not heated or cooled to normal heating and cooling temperatures and or they create their own heat, etc. The change would eliminate unneeded and extra cost to the building owner. Additional insulation, roofing materials, and wall panel materials are being required in excess for buildings that will not fully utilize them. Many storage facilities are vacant most of the time and a lot of manufacturing and utility buildings will have the drive through doors open during production.”

Nothing in the “reason statement” submitted in support of Appendix CD even plausibly attempted to justify reducing the thermal envelope requirements for the many types of buildings in Groups F, S and U which do heat their interiors above 60°F or to cool them with mechanical air conditioning. Nor did it explain why the IECC's concessions to buildings with little need for heating and cooling were insufficient. It said nothing whatsoever about energy and energy-cost savings from IECC implementation or about benefits to occupants or the public. Nor did it provide any evidence contradicting the many findings by the U.S. Department of Energy and the Pacific Northwest National Laboratories that each IECC (and ASHRAE) update since 2006 would save energy and money for building users, including warehouse users.

The broad rollback by Appendix CD was granted over strong objections and evidence from multiple participants in the 2021 Code Cycle, which positioned it as a non-consensus proposal. [The proposal was called Appendix CB when introduced. It also did not include some references to the “2004” ASHRAE, which the draft 2024 Base Document appears to have added.]

Modifying or eliminating the rollback is required because applicable law requires Virginia's building code to be consistent with or at least as stringent as the IECC. Appendix CD moves the code backwards by more than 15 years overriding multiple IECC updates approved by the Board and by the IECC since 2006. Failing to eliminate or, at least, modify Section C406.1.2 and Appendix CD as proposed herein would waste energy, raise occupancy costs, potentially harm employees, increase air pollution, including climate pollution, and harm the “health, safety and welfare” of the residents of Virginia both now and for the decades these inefficient buildings are operated.

The 2021-Cycle record showed that (a) Appendix CD's decade-plus rollback for the 120+ types of buildings covered by the proposal was not supported by substantial evidence; (b) builders successfully implemented Board-approved IECC standards for 2009, 2012, 2015 and 2018, and ASHRAE standards for every update since 2006; (c) U.S. DOE had found that full implementation of the 2021 IECC standards and each update from 2009-2018 would save energy and money; (d) far from suffering under unreasonable burdens, the warehouse market was booming under the then-effective 2018 IECC; and (e) there were no findings or analysis by either the proponent or the Board to support approving the non-consensus proposal. Buildings included in Groups F, S and U include many that are heated or cooled like commercial buildings in other Groups. Buildings in F, S and U include ones involving food, active employees, and even data centers with staggering energy loads.

1. Virginia Law Requires Consistency with Model Building Codes

Section 36-99A requires implementation of building code standards that “protect the health, safety and welfare of the residents of the Commonwealth, and that minimize costs “consistent with” recognized national standards, which in Virginia means the IECC.

The provisions of the Building Code and modifications thereof shall be such as to protect the health, safety and welfare of the residents of the Commonwealth, provided that buildings and structures should be permitted to be constructed, rehabilitated and maintained at the least possible cost consistent with recognized standards of health, safety, energy conservation and water conservation, including provisions necessary to prevent overcrowding, rodent or insect infestation, and garbage accumulation; and barrier-free provisions for the physically handicapped and aged.

As recognized by the 2021 NOPR, keeping the code up to date with “recognized standards of health, safety, energy conservation and water conservation” is critical. Construction costs should be reduced where possible, but only to the extent “consistent with” the IECC’s “energy conservation” standards. Backtracking to weaker, out-of-date standards is not permissible. The modification proposed here would at least keep Virginia's code nearly consistent with the IECC for buildings in Groups F, S and U.

Pursuant to 2021 legislation, VIRGINIA ACTS OF ASSEMBLY – 2021 SPECIAL SESSION I, CHAPTER 425, Section 1 (“H2227”), the Board was directed to “consider adopting Building Code standards that are at least as stringent as those contained in the new version of the IECC.” Factors to be considered are “the public health, safety, and welfare benefits of adopting standards that are at least as stringent as those contained in the IECC, including potential energy savings and air quality benefits over time compared to the cost of initial construction.” Nothing in H2227 authorized approval of less stringent standards, particularly for large groups of buildings that are heated and cooled.

In 2022, at the request of certain builders, the GA adopted HB1289, which directed the Board “to consider during the next code development cycle, revising the Uniform Statewide Building Code...to provide an exemption from any requirements in the energy efficiency ... for the following use and occupancy classifications pursuant to Chapter 3 of the 2018 Virginia Construction Code: (i) Section 306, Factory Group F; (ii) section 311, Storage Group S; and (iii) Section 312, Utility and Miscellaneous Group U.”

While HB1289 called for consideration of an exemption, it did not alter the statutory standards for building codes prescribed by 36-99A and H2227. Since the legislature did not change the applicable legal standards, its direction “to consider” is bound by the standards in 36-99A and H2227, which require adoption of code standards that protect the “health, safety and welfare” of Virginians, minimize costs “consistent with” national model codes, and be “at least as stringent” as the IECC. Nothing justifies the broad rollback made in the 2021 cycle.

2. No credible support was provided the rollback of code standards.

Since the 2006 IECC, the IECC adjusted and the Board repeatedly approved updated standards to recognize new industry developments and public needs. Nothing presented in the 2021 Cycle plausibly justified overturning all those decisions by the IECC and the Board. The proponent’s supporting statement for the rollback proposed in the last cycle was very brief and conclusory. Neither the proponent nor any other participant provided any reasonable basis for rolling back conservation standards for any type of building. While Appendix CD would reduce some builders’ construction costs, nothing demonstrated that the proposal would meet the relevant statutory standards of

serving Virginians' "health, safety and welfare" or minimizing costs "consistent with" energy conservation standards or achieving energy efficiency "at least as stringent" as the latest IECC.

In support of cutting back standards for dozens of types of buildings within the 3 broad categories Groups F, S and U, the proposal's Reason Statement and Cost Impact statement provided (a) two, sketchy examples of hypothetical buildings' compliance costs with no information about energy or energy cost savings; (b) a few generalized statements that some builders find compliance challenging and that some the affected buildings are "not heated or cooled to normal heating and cooling temperatures" or are "vacant" some of the time or might have "open doors" part of the time (which the IECC already addresses by exempting or reducing efficiency standards for buildings with such characteristics). Apart from the suggestion that some warehouses are not heated above 60°F or not heated or cooled at all, there are absolutely no details about the energy usage, efficiency, costs, efficiency-driven savings and characteristics of any 120+ types of buildings that are covered by the efficiency rollback.

Section 306 Factory Group F identifies over 50 types of factories; Section 311 Storage Group S lists over 60 types of storage facilities; and Section 312 Utility and Miscellaneous Group U identifies over a dozen categories. Some of the facilities store products (*e.g.*, food) that are temperature sensitive and require a great deal of energy (lessened only by energy efficiency) to achieve temperature goals. Other buildings involve manufacturing, greenhouses and other operations, which have still different energy and energy-efficiency profiles. Yet, apart scant information about two hypothetical warehouses, the proposal for the rollback provided no details or analysis of any other types of buildings or their energy footprints, available technologies, employee and customer needs, compliance costs, energy cost savings, pollution reductions or other factors relevant to the extreme, multi-group proposal.

The proposal provided no contextual information about its hypotheticals while omitting critical information. For example, it failed to disclose the huge volume of air to be heated and cooled in the two illustrations of warehouses: roughly 2.5 million cubic feet for the 100,000 Sf warehouse, and 144,000 cubic feet for the 7500 SF warehouse. Even minimal space heating or conditioning would require a large amount of energy to achieve a target of 60 degrees or more. Nor did the proponent address the huge, overall energy cost and use increases (waste) or pollution increases from rolling back established and new efficiency standards for multiple categories of buildings.

The proposal to return to 2006 standards also claimed harms that ignored the 2021 IECC's flexibility provisions which reduce requirements for unheated and low-conditioned buildings and permitted buildings to be subdivided into an exempt unheated portion and a separate heated portion if, for example, heating for an office or other work area is needed. It also ignored ASHRAE's flexibility for low energy buildings.

The proponent failed to compare the impact of its proposed standards to the many IECC standards it would override or to subsequent ASHRAE standards, which Appendix CD also undercuts.

Nor did the proponent provide data contradicting the many findings by DOE that each update would save energy and energy costs. The proponent's brief assertions about possible implementation being more difficult and possibly less attractive are too vague or irrelevant to support the extreme proposal. If the proposal was based on legitimate problems, they would have been raised in each cycle from 2009 through 2018.

The proposal did not address or explain how Virginia had successfully implemented the higher conservation standards embodied in IECC updates from 2009-2018 or explain why the 2021 standards are unreasonable.

In fact, the evidence presented showed that the warehouse business was booming in the years the 2018 IECC standards were in effect. See, for example:

- o **"Need for speed: Developers race to build warehouses amid site shortage,"**

- <https://www.virginiabusiness.com/article/need-for-speed/> (Dec. 31, 2021) ("Geoff Poston [of Hampton Roads] likens the current market for building, buying and leasing warehouses and distribution centers to the mid-1800s California Gold Rush: Everybody wants in." The problem is land, not demand or ability to construct.);

- o **"Making it rain: Increased e-commerce fuels wave of distribution centers,"**

- <https://www.virginiabusiness.com/article/making-it-rain/> (April 29, 2021) ("For Hanover County Economic Development Director Linwood Thomas, things couldn't get much better. 'It's really been a perfect storm,' Thomas says. That storm — the good type — is a deluge of distribution centers and warehouses that have opened recently or are currently in the pipeline for the county of about 108,000 residents, located about 20 miles north of Richmond.... Over the past two years or so, Hanover has added about 1.5 million square feet of new space and about 80% of that has been leased. 'Then, we've got another almost 4 million square feet proposed in the next 24 months. These are tangible products that will put us over 5.5 million

square feet of new space, which is huge,' says Thomas, noting that the new space will represent a nearly VASE% increase over the county's existing stock of 13.8 million square feet of industrial/warehouse space.”);

o **“Industrial boom: Virginia continues to see more warehouses and distribution centers,”**

<https://www.virginiabusiness.com/article/industrial-boom/> (July 27, 2018)(“While Hampton and Southwest Virginia area also benefiting, ... Richmond's industrial warehouse market is currently undergoing a “golden age” in the distribution sector, according to a recent report from CBRE.”)

Other considerations that require deleting Appendix CD and Section 402.1.6 which operationalizes Appendix CD, thereby returning to full compliance with the latest IECC, include:

The IECC's code provisions are built upon the hard work, expertise and negotiations of hundreds of industry and efficiency experts, architects, engineers, trade associations, environmental experts, government bodies and public review processes. They consider technological developments, costs, benefits and practicality. Nothing in the IECC standards was arbitrarily arrived at. It makes accommodations are made for different types of buildings and usage patterns, including low-energy building, through different standards, exemptions and performance alternatives.

DOE/PNNL have consistently found that ASHRAE and IECC standards save money for building users through energy savings compared to initial construction costs. https://www.energycodes.gov/sites/default/files/2021-07/Cost-effectiveness_of_ASHRAE_Standard_90-1-2019-Virginia.pdf ; The U.S. Department of Energy (DOE) and its Pacific Northwest National Laboratory (PNNL), in 2022, completed their analysis of commercial provisions of the International Code Council's 2021 International Energy Conservation Code (IECC). As stated in PNNL's report, “the 2021 edition of the IECC results in site energy savings of 12.1% at the aggregate national level compared to the 2018 IECC edition. In addition, on a national weighted average basis, the 2021 IECC is 6.5% more efficient for site energy use than Standard 90.1-2019.” The 2021 IECC also provides a nationally aggregated energy cost savings of 10.6% and greenhouse gas emissions savings of 10.2% as compared to the 2018 edition. See PNNL, 2024 IECC Interim Energy Savings Analysis and Progress Indicator for Commercial Buildings (PNNL-SA-178763). See also <https://www.energycodes.gov/determinations> for recent and past determinations. Many of the DOE commercial determinations address ASHRAE standards which have followed an upward trajectory for efficiency stringency similar to IECC.

The proponent's supporting statement did not consider cost impacts, over time, to building users or the impacts of rising energy costs, which are likely to occur as climate change drives up ambient temperatures.

The proponent provided no evidence on how the public, including building occupants, communities and residents of the Commonwealth – would be affected by exempting these three large categories of buildings from all energy conservation requirements. DOE has found, for example, that energy use reductions, under updated IECC standards, would reduce GHG emissions impacts and climate impacts. By reducing peak and off-peak energy demands, keeping up with the latest IECC would reduce pressure on utilities to raise rates charged to all customers to cover higher priced energy resources.

Despite short-term appeals to builders of reducing construction costs, continuing implementation of the rollback would increase the risk that the buildings would become obsolete more quickly as energy operating costs go up for occupants. Lower rents and vacancies could follow just as they have for older office buildings in many areas.

In sum, while C402.1.6. and Appendix CD should be deleted from Virginia's building code as proposed elsewhere, they should at least be limited to buildings that are not heated above 60°F or cooled other than by fans or natural ventilation. Such a limiting amendment would be at least generally consistent the IECC's existing standards which limit the envelope requirements for buildings that have little or no heating and cooling. No substantive information has ever been presented to support rolling back envelope efficiency standards to the 2006 level for all of Groups F, S and U, most of which were not even discussed in the 2021 cycle.

Cost Impact: The code change proposal will increase the cost

This code change proposal will increase construction costs for some, but not all, new buildings in Groups F, S and U. However, it will reduce energy costs and pollution, saving money for most building users in Groups F, S and U and protecting Virginia residents health, safety and welfare consistent with the requirements of Virginia laws governing building codes.

The DOE and PNNL have repeatedly found that the IECC's (and ASHRAE's) higher efficiency standards from 2009-2021 would result in large savings of energy and money. The evolution of the IECC, since 2006, was justified by changes in technology, building techniques, energy savings and energy costs, all of which have been reviewed by the IECC, DOE, and PNNL.

As discussed in the Reason Statement, Virginia warehouse builders managed to successfully and profitably construct new structures under Virginia's building code, which, prior to the 2021 cycle, had implemented all the IECC's updates after 2006. Building warehouses was a "booming" business under full compliance with IECC's commercial envelope standards, which had been adopted in full by the Board prior to the last cycle.

The scanty cost claims that were presented in support of the Section 402.1.6 and Appendix CD (then called Appendix CB) described two hypothetical warehouses (presumably in Group F) and focused on buildings that are not heated above 60 F or cooled. There was no information about (a) any of costs or benefits for the many other types of buildings covered by Appendix CD, (b) the energy and energy cost savings that would result from the higher efficiency standards in either the 2021 or 2018 IECC, (c) any justifications for the many other changes embedded in Appendix CD, (d) how the so-called complications of construction had been successfully and profitably complied with for well over a decade, (e) why ASHRAE standards should be rolled back, (f) impacts on climate and other forms of air pollution, or any other issue relevant to the rollback to 8 pages of 2006 standards. Weakening building code standards to help two isolated examples or buildings that do not heat above 60°F or cool with air conditioning would hurt future building users of the other 120+ types of buildings in Groups F, S and U, most of which have very different heating and cooling profiles, involving much greater energy use for heating and/or cooling. Once the standards are weakened, builders will be pressured to match efficiency reductions by competitors – a result that building codes are supposed to prevent. That is not consistent with either the public's health, safety and welfare or the IECC's energy conservation standards.

Virginia law requires that these provisions of the code be restored to those of the latest IECC at least for buildings that are designed and equipped for heating and cooling. At a minimum, C402.1.6 and Appendix CD should be limited to buildings that are not designed or equipped to be heated above 60F or cooled other than with fans or natural ventilation as proposed herein.

Home(/) > CRE_other_regions(https://virginiabusiness.com/Category/News/Regions/Cre_other_regions/) > Industrial boom

Industrial boom

Virginia continues to see more warehouses and distribution centers

Richard ... (https://virginiabusiness.com/author/) // July 27, 2018 // 5

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(mailto:?subject=Industrial boom&body=When Emser Tile began seeking a location for an East Coast distribution center, the Los Angeles-based company wanted two things: proximity to a port and the ability to quickly service... You can read the content in details following link https%3A%2F%2Fvirginiabusiness.com%2Findustrial-boom%2F)

om/pin/create/button/? .2Fvirginiabusiness.com%2Findustrial- https://virginiabusiness.com/files/1/2019/10/Emser- ion=Industrial%20boom)

When Emser Tile began seeking a location for an East Coast distribution center, the Los Angeles-based company wanted two things: proximity to a port and the ability to quickly service a growing customer base.

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Prince William Chamber names interim CEO 10/3/2026 (https://virginiabusiness.com/prince-william-chamber-names-interim-ceo/)

In November 2017, Emser Tile opened a 407,000-square-foot distribution center at the CenterPoint Intermodal Center in Suffolk, which now employs more than 50 workers. It plans to add another 50 to 100 workers as business expands. The center, which has the capacity to expand to 850,000 square feet, ships products up and down the Eastern Seaboard as well as to the Midwest.

"It's ramping up," says Barbara Haaksma, Emser Tile's vice president of marketing. Combining Virginia's "favorable business climate" with the nearby Port of Virginia and its rail and interstate shipping access, "really made our decision pretty easy once it came down to pinpointing locations." Virginia's industrial market is booming. Nationally and in Virginia, the growth of e-commerce is driving much of the momentum as online customers order more stuff that needs to be stored and delivered. In the race to shorten delivery times, retailers — both traditional and online — want distribution centers close to population centers.



CV International, Capes tap new executives
4/3/2026

(<https://virginiabusiness.com/cv-international-capes-tap-new-executives/>)



TowneBank appoints new CIO
3/3/2026

(<https://virginiabusiness.com/townebank-appoints-new-cio/>)

Virginia's central location on the Eastern Seaboard makes it competitive as a site for these centers along with improvements to Richmond's port and the Port of Virginia in Hampton Roads. With more distribution and warehouse centers going up, industry analysts say, industrial vacancies are at historic lows in some parts of Virginia, and rents are trending up.

"We've had several years of record-low vacancies and a steady demand from tenants, so landlords, they've got a tremendous amount of confidence right now to move forward with spec development," says Matt Anderson, a senior vice president and partner at CBRE's Richmond office.

While Hampton and Southwest Virginia also are benefiting from the trend, the Richmond region has seen the largest amount of new construction and deal announcements from distribution and logistics operations statewide in the last couple years.



"Our industrial market is as healthy as it's ever been," says Graham Stoneburner, a senior associate in Cushman & Wakefield|Thalhimer's Richmond office. "E-commerce has really driven the need for more warehouse space and distribution space."

In fact, Richmond's industrial warehouse market is currently undergoing a "golden age" in the distribution sector, according to a recent report from CBRE. It noted that during the first quarter, Richmond set post-recession highs in total construction, at 2.6 million square feet, as well as speculative construction at 918,438 square feet of high-bay warehouse and flex product. The current pipeline is expected to expand the high-bay inventory by more than 2.7 million square feet, a 13 percent increase.

For example, Newport Beach, Calif.-based Panattoni Development Co. is building 1 million square feet of speculative warehouse space on 62 acres near the Port of Virginia's Richmond Marine Terminal along Interstate 95.

Regions
(<https://virginiabusiness.com/>)



"That's the largest spec warehouse to go up in the commonwealth ever," says Anderson, Panattoni's leasing broker. So far, he says, potential tenants looking at the site represent a variety of industries. The only thing they have in common is that they're all "bulk warehouse users who need a large footprint in a good location."

Demand for larger centers

Ever since Amazon began locating the first of its four warehouses and distribution facilities in the Richmond region in 2012, Anderson says: "We've seen this steady demand for these larger regional distribution centers. ... We had always been more of a 20,000- to 50,000-square-foot-sized tenant industrial market." But now, he says, there's growing demand for properties in the 200,000-square-foot to 1-million-square-foot range.

Consequently, "You've got a tremendous pipeline of seasoned industrial developers who are bringing quality product to Richmond that we haven't seen in years."

Richmond-based Hourigan Development is building 1.5 million square feet of high-bay warehouse buildings called Deepwater Industrial Park on the 110-acre Alleghany Warehouse Co. site near Philip Morris USA's Richmond Manufacturing Center on Interstate 95.

Richmond developer Devon USA, which last year built a 328,000-square-foot spec warehouse that became Amazon's Hanover County distribution center, is now working on a \$20 million, 321,000-square-foot spec warehouse at the James River Logistics Center in Chesterfield County.

Additionally, rents are going up on warehouse spaces with less than 100,000 square feet, Anderson says, because there's less supply in that size range. "I think that's going to create rent growth that will be healthy for the overall economy and gives more confidence to the larger institutional developers. It creates a more competitive landscape for the tenants who are here."

In Southwest Virginia, a number of developers have industrial projects sprinkled up and down the Interstate 81 corridor from Blacksburg to Front Royal. "It's a little more spread out, but it's very active out there," says David Williams, president and CEO at the Richmond office of global commercial real estate company Colliers International.

For example, health-drink manufacturer Humm Kombucha is building a \$10 million, 100,000-square-foot brewery in Roanoke to make and distribute its refrigerated probiotic fermented tea beverage to retailers along the East Coast.

In Hampton Roads, the Port of Virginia has been working on \$700 million in expansion projects to increase its cargo-handling capacity by 40 percent. That expansion has sparked projects such as a 284,580-square-foot spec warehouse built last year by Panattoni at Suffolk's Virginia Regional Commerce Park. Welspun USA, the American arm of an Indian bath and bedding textiles maker, leased 200,000 square feet of the multitenant warehouse in October, just a few months after it was completed.

Nevertheless, the industrial real estate market in Hampton Roads has been stagnant compared with the development boom seen in Richmond, says Bill Throne, first vice president of industrial properties at Cushman & Wakefield|Thalhimer's Hampton Roads office. A lot of the containers coming into the port's Norfolk and Portsmouth terminals are immediately shipped out to other locations, he says, so there's not as much need for additional warehousing space in the area, even though it's almost all occupied.

"There's not a lot of space out there. We're under 5 percent vacancy," Throne says. "We're really lacking in both absorption and deal velocity. If you look historically, we're doing OK. We're not doing better than we have over the last eight or 10 years, and we're not doing worse."

Boost from economy

As for Richmond's industrial real estate market, Stoneburner expects continued growth in construction and leasing as long as the economy remains vibrant and consumer spending

continues accelerating.

“We’re in a good economy right now, and as businesses continue to grow and need to expand their footprint, they need to buy more things, ship more things. ... And as people buy and sell more and as businesses grow, you’re going to see the industrial market continue to grow.”

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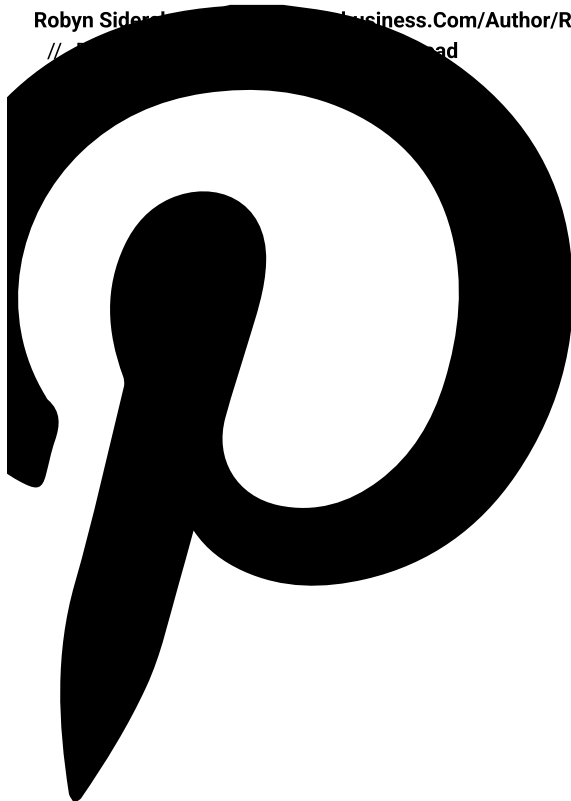
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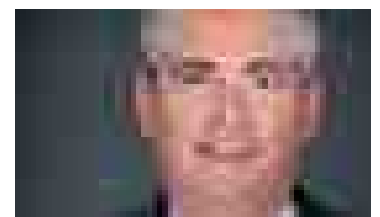
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Poston, vice president of Cushman & Wakefield | Thalhimer's Hampton Roads industrial group, says demand has never been greater for **industrial real estate** (<https://virginiabusiness.com/blog/tag/industrial-real-estate/>), creating a tight market with low vacancy.

"The amount of speculative development of industrial space taking place right now is unprecedented," says Jason El Koubi, interim president and CEO of the Virginia **Economic Development** (<https://virginiabusiness.com/blog/tag/economic-development/>) Partnership. "Some of this space will go to manufacturing, but much of the demand is being driven by **warehousing** (<https://virginiabusiness.com/blog/tag/warehousing/>) and distribution needs."



One leading factor behind this drive is companies attempting to keep up with e-commerce giant Amazon.com Inc. in getting products to consumers quickly.

Amazon is constantly pushing the envelope, shortening delivery windows from what was once five days to same-day delivery, says Marc Wulfraat, founder and president of Canadian **logistics** (<https://virginiabusiness.com/blog/tag/logistics/>) firm MWPVL International Inc.

"That speed to market is a competitive advantage," he says, "but what it requires is that you have more buildings that are closer to urban metro markets."

And adding more buildings and sites is easier said than done, particularly around in-demand markets and locations with ready access to interstates and shipping routes.

"The big difference is we have a lot of institutional developers in the market tying up sites left and right in order to accommodate the demand that they're seeing," says Poston, adding that "all of that developer demand is just really creating a frenzy."

Running out of land

In Chesterfield County, every piece of property zoned for distribution centers, warehouses or manufacturing facilities is either under contract or in negotiations, says the county's director of economic development, Garrett Hart.

"It's the most active market I've seen in my 40-year career," Hart says. "I'm spending my days trying to look for property to get more property zoned and in place and ready to go."

But it's not just Chesterfield where industrial sites are scarce and development is booming. Across the commonwealth, the demand for more warehousing and distribution space is causing developers to scramble.

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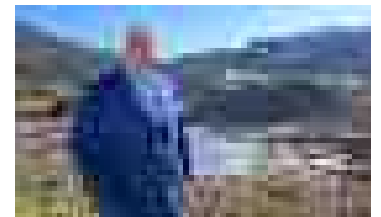
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Geoff Poston with Cushman & Wakefield | Thalhimer says demand for industrial **real estate** (<https://virginiabusiness.com/blog/tag/real-estate/>) has never been greater. Photo by Mark Rhodes

"Where I think the demand is different today is there is a shortage, especially in Virginia, of zoned, approved sites that are ready to go," says Mark Hourigan, founder and CEO of Richmond-based construction and development firm Hourigan Development.

In the past several months, hundreds of jobs and millions of dollars in capital investment in warehouses and distribution centers have been announced in Virginia.

Goochland County-based Performance Food Group Co., a Fortune 500 food products distributor, will invest \$80.2 million in a new facility in Hanover County. In the first quarter, it will

break ground in Ashland on a 325,000-square-foot **warehouse** (<https://virginiabusiness.com/blog/tag/warehouse/>), scheduled to be built over 18 months.

Hanover County Director of Economic Development Linwood Thomas says big economic development announcements like that keep coming.

"What will happen over the next 24 to 36 months is about an additional 6 million square feet of new industrial space, warehouse, logistics [and] industrial supply [space]" will be built in the county, he says, which will increase Hanover's current industrial inventory by more than 40%.

Meanwhile, Amazon has facilities popping up all over the state. In Suffolk's Northgate Commerce Park, Amazon is building a nearly \$230 million, 3.8 million-square-foot, five-story robotics fulfillment center. It's also constructing a fulfillment center in Henrico County near Richmond Raceway and an import processing center in Chesapeake. Amazon has at least 15 facilities in Virginia, with more coming.

Lang Williams, Colliers International's Norfolk-based senior vice president, works with a lot of developers and companies seeking space.

He says the past 18 months have been "without precedent" in the Norfolk region. "We've really kind of caught up with the rest of the country in terms of just massive demand for all logistics and warehousing space."

The difference now, Williams adds, is that there are two and three companies "practically fist-fighting for space."

"Normally we don't have that problem. Normally, we're pursuing and trying to make a deal. Now, the tenants are scrambling to find a space, no matter the cost, wherever they can get it, because they don't have any options around," he says.

Over the past several years, Virginia localities have been eliminated from consideration for several economic development projects involving warehouses or distribution centers due to a lack of site readiness.

"These sites were unable to meet the project's start-up schedule due to time required to fulfill a number of demands," including due diligence, permitting and utilities and road infrastructure, El Koubi says.

The lack of available, ready sites for warehouse and **distribution center** (<https://viriniabusiness.com/blog/tag/distribution-center/>) projects is a statewide problem, he adds, “but more pronounced along the Interstate 95 and 81 corridors as well as Hampton Roads, where demand is higher.”

In the Fredericksburg region, less available land means building farther away from I-95, though localities have done a good job pivoting, says Todd Gillingham, vice president of marketing and operations for the Fredericksburg Regional Alliance at the University of Mary Washington.

While alternative distribution routes are available, the lack of available sites “will soon become an obstacle for the Fredericksburg region and much of Virginia,” Gillingham says. “I know there have been quite a few projects we lost out on because there wasn’t available existing industrial space.”

Meeting demand

Joe Marchetti III, Hourigan’s president of development, says one of the macro trends he and Mark Hourigan picked up on years ago was the shift to e-commerce.

But the pandemic accelerated everything, he says.

“That’s why the pace feels frenetic,” Marchetti says.

“I think cities like Richmond are becoming the next desired destination for these logistic companies,” Hourigan says. “When you can get to 40% of the U.S. population from a single day’s drive from the Richmond area, it makes it very desirable. The interstate system, the port system or rail system just add to the really high desirability of our marketplace.”

Clients want to build warehouses and distribution centers as quickly as possible, says Hourigan Development CEO Mark Hourigan, seen at the Richmond construction site for a Lowe’s distribution center expected to open in September. Photo by Rick DeBerry

One site Hourigan is working on is for home goods retailer Lowe’s at the Deepwater **Industrial Park** (<https://viriniabusiness.com/blog/tag/industrial-park/>) in South Richmond. In 2018, Hourigan bought 110 acres of industrial-zoned land, right along Interstate 95.

It’s there Hourigan is building a 1.2-million-square-foot Lowe’s bulk distribution center. It was initially going to be 560,000 square feet, but early in construction, Lowe’s doubled the order. The project is expected to be finished in September.

“One of the big things that we have seen with a lot of end users and tenants is that readiness is that important,” Marchetti says. “What that really means to a lot of them is how soon can the building be occupiable and begin moving product into it.”

“As these markets evolve and things are happening, the decision windows are shorter and shorter and tighter and tighter,” Hourigan says. “If [a developer] is not fairly well down the path, not only [with] your site development, but your utilities, your zoning and maybe even a spec building, then [companies] will move on to the next site that is further along [with] development. It requires [the developer] to invest upfront, to be able to respond in a time frame that some of these companies are looking for.

“The average time from when a user starts looking for their space and when they want to occupy is six to nine months. They are ready to go,” Hourigan says. “If you have the right site, and you proceed with a product in high demand, you’ve got a pretty good shot you’re going to land something.”

Taylor Chess, president of development for Fairfax-based Peterson Cos., echoes Hourigan and Marchetti.

“COVID has created a lot of chaos, and chaos creates incredible change,” he says. “[COVID] has accelerated so many aspects of business that were going to be happening over the next 10 years, but it’s accelerated that into a really tight timeframe.”

Peterson Cos. started investing in industrial land for data centers, warehouses and distribution centers about eight years ago.

“We were fortunate that we had acquired 275 acres on I-95 in Stafford County to do a major industrial park,” Chess says. Some of that land, in Northern Virginia Gateway, will be used for an Amazon cross-dock fulfillment center that will serve as an East Coast supply chain hub, scheduled to open in the second half of this year.

“We’re lucky we have another 180 acres to develop,” Chess says.

The company has also invested in another 150 acres in Winchester, and Chess says Peterson is looking at “multiple other key logistics sites for additional industrial development.”

Building faster

Peterson Cos. is running into the same issue as Hourigan with timelines, however.

“When you talk to the end user of ... the buildings, they want to talk about buildings [being delivered] tomorrow. They don’t want to talk about building ... in two to three years. If you’re two to three years out on a project, they’re not interested in talking,” Chess says.

“Most of the people we talked to want something before the end of 2022. Some people are even looking for mid-2022. If you’re telling them that you can’t have something available for them until 2023 or 2024, they say, ‘I can’t talk about that.’”

Says Poston with Thalhimer: “I think the key thing now, the big driver for people now, is timing. Everybody wants it sooner and sooner.”

But sooner isn’t always possible, especially if there is less land available.

“There’s only but so much land to develop, and quite a few of those projects are about to break ground or launch,” says Williams.

That said, it’s difficult to guess what the landscape will look like in two or three years, he says, “but everything comes in cycles. So, in terms of industrial development in brokerage right now, we’re trying to ride the train while it’s going fast. You never know what’s going to happen around the corner.”

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EC-C402.5.2-24

IECC: C402.5.2

Proponents: DeAnthony Pierce, City of Roanoke, representing Virginia Building & Code Officials Association
(deanthony.pierce@roanokeva.gov)

2024 International Energy Conservation Code [CE Project]

Revise as follows:

C402.5.2 Minimum skylight fenestration area. Skylights shall be provided in *enclosed spaces* greater than 2,500 square feet (232 m²) in floor area, directly under a roof with not less than 75 percent of the ceiling area with a ceiling height greater than 15 feet (4572 mm), and used as an office, lobby, atrium, concourse, corridor, storage space, gymnasium/exercise center, convention center, automotive service area, space where manufacturing occurs, nonrefrigerated warehouse, retail store, distribution/sorting area, transportation depot or workshop. The total *toplit daylight zone* shall be not less than half the floor area and shall comply with one of the following:

1. A minimum skylight area to toplit *daylight zone* of not less than 3 percent where all skylights have a VT of not less than 0.40, or VT_{annual} of not less than 0.26, as determined in accordance with Section C303.1.3.
2. A minimum skylight effective aperture, determined in accordance with Equation 4-3, of:
 - 2.1. Not less than 1 percent using a skylight's VT rating; or
 - 2.2. Not less than 0.66 percent using a Tubular Daylight Device's VT_{annual} rating.

$$\text{Skylight Effective Aperture} = \frac{0.85 \times \text{Skylight Area} \times \text{Skylight VT} \times \text{WF}}{\text{Toplit Zone}}$$

Equation 4-3

where:

Skylight area = Total fenestration area of skylights.

Skylight VT = Area-weighted average visible transmittance of skylights.

WF = Area-weighted average well factor, where well factor is 0.9 if light well depth is less than 2 feet (610 mm), or 0.7 if light well depth is 2 feet (610 mm) or greater, or 1.0 for Tubular Daylighting Devices with VT_{annual} ratings.

Light well depth = Measure vertically from the underside of the lowest point of the skylight glazing to the ceiling plane under the skylight.

Exceptions: Skylights above *daylight zones* of *enclosed spaces* are not required in:

1. Buildings in *Climate Zones* 6 through 8.
2. Spaces where the designed *general lighting* power densities are less than 0.5 W/ft² (5.4 W/m²).
3. Areas where it is documented that existing structures or natural objects block direct beam sunlight on not less than half of the roof over the enclosed area for more than 1,500 daytime hours per year between 8 a.m. and 4 p.m.
4. Spaces where the *daylight zone* under rooftop monitors is greater than 50 percent of the *enclosed space* floor area.
5. Spaces where the total area minus the area of *sidelit daylight zones* is less than 2,500 square feet (232 m²), and where the lighting is controlled in accordance with Section C405.2.3.
6. Spaces designed as storm shelters complying with ICC 500.
7. Data centers, or any room or space where the primary function is to house server cabinets.

Reason Statement: This proposal is meant to address the intent of the Energy Conservation Code, by acknowledging the addition of skylights in data halls, as increasing the cooling requirements of those spaces, which are normally designed to stay cool, and typically do not have people within those spaces. This proposal also acknowledges longstanding industry construction of datacenters, and would reduce any confusion regarding skylight requirements.

Cost Impact: The code change proposal will decrease the cost

The code change proposal will decrease the cost of construction and cooling, since it will not require data centers to be re-designed with skylights included.

These building are typically engineered and designed with air-handlers covering the majority of the roof to cool data hall spaces, or rooms that house servers. Skylights will add additional cooling cost to these spaces, as they are primarily designed to remove heat generated by the server and computer equipment, which is counter to Energy Conservation.

EC-C403.7.4.1-24

VECC: C403.7.4.1

Proponents: Joseph Willis, representing Prince William County (jwillis@pwcgov.org); Eric Mays, representing Prince William County (emays@pwcgov.org); Donna Rubino, Prince William County, representing Prince William County Building (drubino@pwcgov.org)

2021 Virginia Energy Code

Revise as follows:

C403.7.4.1 Nontransient dwelling units. Nontransient dwelling units shall be provided with outdoor air energy recovery ventilation systems with an *enthalpy recovery ratio* of not less than 50 percent at cooling design condition and not less than 60 percent at heating design condition.

Exceptions:

1. Nontransient dwelling units in Climate Zone 3C.
2. Nontransient dwelling units with not more than 500 square feet (46 m^2) of *conditioned floor area* in Climate Zones 0, 1, 2, 3, 4C and 5C.
3. *Enthalpy recovery ratio* requirements at heating design condition in Climate Zones 0, 1 and 2.
4. *Enthalpy recovery ratio* requirements at cooling design condition in Climate Zones 4, 5, 6, 7 and 8.
5. Individual nontransient dwelling units in group R-2 or R-3 occupancy where not required by Table C403.7.4.2(1).

Reason Statement: Individual HVAC systems for condos and apartments tend to range from 2-3 tons cooling capacity. The required ventilation air is typically 5% or less of the supply airflow. The mechanical code permits options to achieve this through inexpensive means (connect to the return air side of the air handler or mechanical exhaust).

Prior to the 2015 Mechanical Code, natural ventilation was permitted through operable windows. Since then, only mechanical ventilation is permitted for this application.

An enthalpy recovery ratio for an ERV of 50%, means that 50% of the energy difference between the outside air and the return air is recovered and used to precondition the supply air. I'm assuming that the enthalpy recovery ratio at cooling design will be less than 50% for these types of units, so I use Exception 4. (Is that what the exception means? It's not clear.)

Cost Impact: The code change proposal will decrease the cost

Requiring these systems to use individual energy recovery is an added expense (~\$600 - \$1000 per unit) that doesn't seem necessary at these low airflows. There are better options available when using energy recovery for outdoor air, such as large dedicated outdoor air units with energy recovery to provide fresh air to multiple units or corridors.

REC-R402.1.2(3)-24

IRC: TABLE N1102.1.2 (R402.1.2), TABLE N1102.1.3 (R402.1.3)

Proponents: Jason Vandever, North American Insulation Manufacturers Association (NAIMA), representing NAIMA
(jvandever@naima.org)

2024 International Residential Code

Revise as follows:

TABLE N1102.1.2 (R402.1.2) MAXIMUM ASSEMBLY *U*-FACTORS^a AND FENESTRATION REQUIREMENTS

Portions of table not shown remain unchanged.

CLIMATE ZONE	3	4 EXCEPT MARINE	5 AND MARINE 4
ATTIC ROOFLINE <i>U</i> -FACTOR	0.038	0.032	0.032

For SI: 1 foot = 304.8 mm.

- Nonfenestration *U*-factors and *F*-factors shall be obtained from measurement, calculation, an approved source or Appendix NF where such appendix is adopted or approved.
- Mass walls shall be in accordance with Section N1102.2.6. Where more than half the insulation is on the interior, the mass wall *U*-factors shall not exceed 0.17 in Climate Zones 0 and 1, 0.14 in Climate Zone 2, 0.12 in Climate Zone 3, 0.087 in Climate Zone 4 except Marine, 0.065 in Climate Zone 5 and Marine 4, and 0.057 in Climate Zones 6 through 8.
- In Warm Humid locations as defined by Figure N1101.7 and Table N1101.7, the *basement wall U*-factor shall not exceed 0.360.
- A maximum *U*-factor of 0.30 shall apply in Marine Climate Zone 4 and Climate Zones 5 through 8 to vertical fenestration products installed in buildings located either:
 - Above 4,000 feet in elevation above sea level, or
 - In windborne debris regions where protection of openings is required by Section R301.2.1.2.
- F*-factors for slabs shall correspond to the *R*-values of Table N1102.1.3 and the installation conditions of Section N1102.2.10.1.

TABLE N1102.1.3 (R402.1.3) INSULATION MINIMUM *R*-VALUES AND FENESTRATION REQUIREMENTS BY COMPONENT^a

Portions of table not shown remain unchanged.

CLIMATE ZONE	3	4 EXCEPT MARINE	5 AND MARINE 4
ATTIC ROOFLINE <i>R</i> -VALUE	30	38	38

For SI: 1 foot = 304.8 mm. NR = Not Required, ci = Continuous Insulation.

- R*-values are minimums. *U*-factors and SHGC are maximums. Where insulation is installed in a cavity that is less than the label or design thickness of the insulation, the installed *R*-value of the insulation shall be not less than the *R*-value specified in the table.
- “5ci or 13” means R-5 continuous insulation (ci) on the interior or exterior surface of the wall or R-13 cavity insulation on the interior side of the wall. “10ci or 13” means R-10 continuous insulation (ci) on the interior or exterior surface of the wall or R-13 cavity insulation on the interior side of the wall. “15ci or 19 or 13&5ci” means R-15 continuous insulation (ci) on the interior or exterior surface of the wall; or R-19 cavity insulation on the interior side of the wall; or R-13 cavity insulation on the interior of the wall in addition to R-5 continuous insulation on the interior or exterior surface of the wall.
- Slab insulation shall be installed in accordance with Section N1102.2.10.1.
- Basement wall insulation shall not be required in Warm Humid locations as defined by Figure N1101.7 and Table N1101.7.

- e. The first value is cavity insulation; the second value is continuous insulation. Therefore, as an example, “13&5” means R-13 cavity insulation plus R-5 continuous insulation.
- f. Mass walls shall be in accordance with Section N1102.2.6. The second *R*-value applies where more than half of the insulation is on the interior of the mass wall.
- g. A maximum *U*-factor of 0.30 shall apply in Marine Climate Zone 4 and Climate Zones 5 through 8 to vertical fenestration products installed in buildings located either:
 - 1. Above 4,000 feet in elevation.
 - 2. In windborne debris regions where protection of openings is required by Section R301.2.1.2.
- h. “30 or 19+7.5ci or 20ci” means R-30 cavity insulation alone or R-19 cavity insulation with R-7.5 continuous insulation or R-20 continuous insulation alone.

Reason Statement: This proposal provides more compliance alternatives for insulating ceilings/roofs, while also maintaining equivalence with the current prescriptive requirements. During the development of the 2024 IECC, new rows in the prescriptive U-factor and R-value tables were added for "insulation entirely above roof deck". We support this change, and we assume that it will be included in the base document update for Virginia's 2024 IECC adoption. The proposal above adds another row to the prescriptive insulation tables that we believe will promote good construction practices and provide an equivalent level of energy savings. In the 2027 IECC, proposal RE30-24 added new rows for "attic roofline U-factor" and "attic roofline R-value". The U-factors were selected to align with the 2024 IECC addition of "insulation entirely above roof deck" and the appropriate R-values were selected after calculation of typical roof assemblies- to align the thermal resistance with the U-factors. The U-factors and R-values in the RE30-24 proposal were unanimously approved at the subgroup and unanimously approved at the Residential Consensus Committee with a vote of 35-0. Note: The U-factors and R-values proposed above are calculated to be equivalent to an R-49 ceiling insulation requirement, which reflects the reduction in ceiling insulation in the 2024 IECC. If Virginia maintains its current ceiling R-value requirement of R-60, we can re-calculate these values to maintain equivalence.

Cost Impact: The code change proposal will not increase or decrease the cost This proposal is an option and will neither increase or decrease costs.

Attached Files

- RE30-24_1751383997.pdf
<https://va.cdpassess.com/proposal/1337/1902/files/download/926/>

M403.3.1.1-24

IMC®: TABLE 403.3.1.1

Proponents: Dennis Hart, Fairfax County, representing VPMIA/VBCOA (dennis.hart@fairfaxcounty.gov)

2024 International Mechanical Code

Revise as follows:

TABLE 403.3.1.1 MINIMUM VENTILATION RATES

Portions of table not shown remain unchanged.

OCCUPANCY CLASSIFICATION	OCCUPANT DENSITY #/1000 FT ² ^a	PEOPLE OUTDOOR AIRFLOW RATE IN BREATHING ZONE, R_p CFM/PERSON	AREA OUTDOOR AIRFLOW RATE IN BREATHING ZONE, R_a CFM/FT ² ^a	EXHAUST AIRFLOW RATE CFM/FT ² ^a
Retail stores, sales floors and showroom floors				
Dressing rooms	—	—	—	0.25

For SI: 1 cubic foot per minute = 0.0004719 m³/s, 1 ton = 908 kg, 1 cubic foot per minute per square foot = 0.00508 m³/(s × m²), °C = [(°F) – 32]/1.8, 1 square foot = 0.0929 m².

- Based on net occupiable floor area.
- Mechanical exhaust required and the recirculation of air from such spaces is prohibited. Recirculation of air that is contained completely within such spaces shall not be prohibited (see Section 403.2.1, Item 3).
- Spaces unheated or maintained below 50°F are not covered by these requirements unless the occupancy is continuous.
- Ventilation systems in enclosed parking garages shall comply with Section 404.
- Rates are per water closet, urinal or adult changing station. The higher rate shall be provided where the exhaust system is designed to operate intermittently. The lower rate shall be permitted only where the exhaust system is designed to operate continuously while occupied.
- Rates are per room unless otherwise indicated. The higher rate shall be provided where the exhaust system is designed to operate intermittently. The lower rate shall be permitted only where the exhaust system is designed to operate continuously while occupied.
- Mechanical exhaust is required and recirculation from such spaces is prohibited. For occupancies other than science laboratories, where there is a wheel-type energy recovery ventilation (ERV) unit in the exhaust system design, the volume of air leaked from the exhaust airstream into the outdoor airstream within the ERV shall be less than 10 percent of the outdoor air volume. Recirculation of air that is contained completely within such spaces shall not be prohibited (see Section 403.2.1, Items 2 and 4).
- For nail salons, each manicure and pedicure station shall be provided with a source capture system capable of exhausting not less than 50 cfm per station. Exhaust inlets shall be located in accordance with Section 502.20. Where one or more required source capture systems operate continuously during occupancy, the exhaust rate from such systems shall be permitted to be applied to the exhaust flow rate required by Table 403.3.1.1 for the nail salon.
- Outpatient facilities to which the rates apply are freestanding birth centers, urgent care centers, neighborhood clinics and physicians' offices, Class 1 imaging facilities, outpatient psychiatric facilities, outpatient rehabilitation facilities and outpatient dental facilities.
- The requirements of this table provide for acceptable IAQ. The requirements of this table do not address the airborne transmission of airborne viruses, bacteria and other infectious contagions.
- These rates are intended only for outpatient dental clinics where the amount of nitrous oxide is limited. They are not intended for dental operatories in institutional buildings where nitrous oxide is piped.
- The occupiable floor area in warehouses shall not include the floor area of self-storage units, floor areas under rack storage or designated palletized storage floor areas.

Reason Statement: This proposal removes the “Dressing Rooms” exhaust requirement listed under retail occupancies in the IMC ventilation table. The current 0.25 cfm/ft² exhaust rate originates from ASHRAE 62.1-2010, Table 6-4, which referenced “Locker/Dressing Rooms” intended for use in facilities like gyms, factories, or similar spaces where personal hygiene and odor control are concerns.

Retail dressing rooms, also called fitting rooms, do not share these characteristics. They are not associated with lockers or showers and pose minimal ventilation concerns. ASHRAE has since clarified through interpretation that the requirement was never intended to apply to retail fitting rooms. This is supported by later versions of ASHRAE 62.1, where “dressing rooms” are no longer listed.

The continued inclusion of dressing rooms under retail in the IMC has led to confusion and over-ventilation. This proposal aligns the code with ASHRAE’s clarified intent and current standards by removing this outdated and misapplied exhaust requirement.

A copy of the interpretation by ASHRAE can be found at the following link -

https://www.ashrae.org/File%20Library/Technical%20Resources/Standards%20and%20Guidelines/Standards%20Intepretations/IC_62-1-2010-5.pdf

Cost Impact: The code change proposal will decrease the cost By not requiring additional exhaust in a typically dressing room in a retail setting, the cost for construction will decrease.

**INTERPRETATION IC 62.1-2010-5 OF
ANSI/ASHRAE STANDARD 62.1-2010
VENTILATION FOR ACCEPTABLE INDOOR AIR QUALITY**

Approved: January 26, 2013

Request from: Brenden Guffin (bguffin@psfmech.com), PSF Mechanical, Inc., 9322 14th Avenue South, Seattle, WA 98108.

Reference: This request for interpretation refers to the requirements presented in ANSI/ASHRAE Standard 62.1-2010, Section 6 and Table 6-4, regarding Minimum Exhaust Rates for Locker/Dressing Rooms.

Background: ASHRAE Standard 62.1, Table 6-4 states that “Locker/dressing rooms” require 0.25 cfm/ft² of exhaust air. Beginning with the 2009 International Mechanical Code version and continuing into the 2012 International Mechanical Code version, the exhaust air requirement of 0.25 cfm/ft² is applied to Dressing rooms within Retail Occupancies in Chapter 4, Table 403.3.

My interpretation is that the ASHRAE Standard 62.1 Committee members intended the exhaust requirement to apply only to “dressing rooms” which are associated with “locker rooms” such as that which may be found in sports facilities, gymnasiums, fitness centers, employee changing rooms in factories, and the like. It is not intended to apply to “dressing rooms” which are not associated with locker rooms.

Interpretation: Retail dressing rooms are not associated with locker rooms, so the 0.25 cfm/ft² exhaust requirement for “Locker/dressing rooms” in Table 6-4 of Standard 62.1 does not apply.

Question: Is this interpretation correct?

Answer: Yes

Comments: Table 6-4 includes entries for Locker Rooms and for Locker/Dressing Rooms. It is not clear how one would distinguish between these two categories. Given that the exhaust rate is twice as high for Locker Rooms as it is for Locker/Dressing Rooms, one can take the Locker/Dressing Room category to be applicable to a space with lower odor intensity. We can also conclude that neither of these categories was aimed at retail “fitting rooms” as there are no lockers associated with typical retail space dressing rooms.

The standard intentionally leaves decisions about appropriate space type selection to the design team with concurrence from any authority having jurisdiction.

M504.4-24

IMC®: 504.4

Proponents: Dennis Hart, Fairfax County, representing VPMIA/VBCOA (dennis.hart@fairfaxcounty.gov)

2024 International Mechanical Code

Revise as follows:

504.4 Exhaust installation. Dryer exhaust ducts for clothes dryers shall terminate on the outside of the ~~building-building.~~ and shall be equipped with a backdraft damper. Exhaust duct terminations shall be equipped with a backdraft damper. Screens shall not be installed at the duct termination. Ducts shall not be connected or installed with sheet metal screws or other fasteners that will obstruct the exhaust flow. Clothes dryer exhaust ducts shall not be connected to a vent connector, vent or *chimney*. Clothes dryer exhaust ducts shall not extend into or through ducts or *plenums*. Clothes dryer exhaust ducts shall be sealed in accordance with Section 603.9.

Reason Statement: The purpose of a backdraft damper is to minimize air infiltration and prevent rodents and pests from entering the duct system. To effectively serve this purpose, the damper must be located at the duct termination. If it is installed elsewhere along the duct run, air leakage and pest intrusion can still occur between the termination and the damper, defeating its intended function.

In the field, some contractors have attempted to install collapsible inline backdraft dampers within the duct. These installations violate Section 504.4.2 of the International Mechanical Code (IMC), which requires that the exhaust duct remain undiminished in size. Inline dampers reduce the effective diameter of the duct and restrict airflow, resulting in noncompliant and less effective systems.

While the International Residential Code (IRC) clearly states that backdraft dampers are to be installed at the duct termination for dryer exhausts, the IMC lacks similar clarity for general mechanical ventilation systems. This gap in guidance has contributed to inconsistent and often incorrect installations.

This proposal provides necessary clarification by specifying that backdraft dampers must be located at the termination point, ensuring proper function, consistent enforcement, and alignment with best practices found in the IRC.

Cost Impact: The code change proposal will not increase or decrease the cost This proposal only clarifys the proper location of the backdraft damper. There is no added cost.

M506.3.2.5-24

IMC®: 506.3.2.5, 506.3.2.5.1 Light test., 506.3.2.5.2 Water spray test.

Proponents: Dennis Hart, Fairfax County, representing VPMIA/VBCOA (dennis.hart@fairfaxcounty.gov)

2024 International Mechanical Code

Revise as follows:

506.3.2.5 Grease Duct Test. ~~A field test shall be performed prior~~ Prior to the use or concealment of any portion of a grease duct system, ~~a leakage test shall be performed.~~ Grease ducts shall be considered to be concealed where installed in shafts or covered by coatings or wraps that prevent the grease ducts from being visually inspected on all sides. The permit holder shall be responsible to provide the necessary *equipment* and perform the grease duct leakage test. A light test shall be performed to determine that all welded and brazed joints are liquid tight.

~~A light test shall be performed by passing a lamp having not less than 1600 lumens through the entire section of ductwork to be tested. The lamp shall be open so as to emit light equally in all directions perpendicular to the duct walls.~~ A light test shall be performed

for the entire grease duct system, including the hood-to-duct connection. The grease duct system shall be permitted to be tested in sections, provided that every joint is tested. For *listed* factory-built grease ducts, this test shall be limited to duct joints assembled in the field and shall exclude factory welds. ~~The test shall be performed in accordance with either Section 506.3.2.5.1 or 506.3.2.5.2.~~

Delete without substitution:

506.3.2.5.1 Light test. N/A. ~~A duct test shall be performed by passing a lamp, having not less than 1600 lumens, through the entire section of ductwork to be tested. The lamp shall be open so as to emit light equally in all directions perpendicular to the duct walls. A successful test shall be where the light from the lamp is not visible at any point on the exterior of the duct.~~

506.3.2.5.2 Water spray test. N/A. ~~A duct test shall be performed by simulating a cleaning operation of the interior of the duct. A water pump capable of a flowing outlet pressure of not less than 1,200 psi (8274 kPa) shall be used, along with any necessary hoses and spray nozzles, to apply high-pressure water to the inside surfaces of the duct. A successful test shall be where there is no evidence of cleaning water at any point on the exterior of the duct.~~

Reason Statement: This proposal does two things – it changes the lamp requirement of 100 watts to 1600 lumens and it removes the option to perform a water spray test for a grease duct leakage test.

Since the phase-out of incandescent lamps and the widespread adoption of LED technology, the lighting industry has shifted from measuring brightness in watts to using lumens as the standard metric. Watts indicate energy consumption, not light output, and are no longer a reliable way to gauge brightness with modern lighting. Lumens measure the actual amount of visible light produced by a lamp.

For reference, a 100-watt incandescent bulb typically produces around 1600 lumens, which is now the benchmark used to compare LED lamp brightness.

The 2024 IMC introduces an option to conduct grease duct leakage testing using a water spray method. While this may offer an alternative to traditional testing, it presents several practical and safety concerns when used in both new or existing spaces. If leaks are present, water may escape the ductwork, creating hazards such as contact with temporary electrical wiring, slip risks on floors, and potential damage to finished or in-progress construction. Additionally, introducing water into the duct system can promote corrosion, especially if not properly dried or maintained afterward.

From an inspection standpoint, verifying the effectiveness of a water spray test is highly challenging. It is unclear how an inspector can ensure that the spray adequately contacts all welds or penetrates micro-leaks, particularly given water's surface tension properties. This calls into question the reliability and practicality of the method for field verification.

Cost Impact: The code change proposal will decrease the cost. The cost of an LED lamp is less than the cost of a rig to water spray test the duct.

M507.1-24

IMC®: 507.1

Proponents: Dennis Hart, Fairfax County, representing VPMIA/VBCOA (dennis.hart@fairfaxcounty.gov)

2024 International Mechanical Code

Revise as follows:

507.1 General. Commercial kitchen exhaust hoods shall comply with the requirements of this section. Hoods shall be Type I or II and shall be designed to capture and confine cooking vapors and residues. A Type I hood shall be installed at or above appliances in accordance with Section 507.2. A Type II hood shall be installed at or above *appliances* in accordance with Section 507.3. Where any cooking *appliance* under a single hood requires a Type I hood, a Type I hood shall be installed. Where a Type II hood is required, a Type I or Type II hood shall be installed.

Exceptions:

1. ~~Factory-built commercial cooking recirculating systems~~ exhaust hoods that are listed and *labeled* in accordance with UL 710 B, and installed in accordance with Section 304.1, shall not be required to comply with Sections 507.1.5, 507.1.6, 507.2.3, 507.2.5, 507.2.8, 507.2.10, and 507.3.1 and 507.3.3. ~~Spaces in which such systems are located shall be considered to be kitchens and shall be ventilated in accordance with Table 403.3.1.1. For the purpose of determining the floor area required to be ventilated, each individual appliance shall be considered as occupying not less than 100 square feet (9.3 m²).~~
2. A hood shall not be required at or above any of the following:
 2. 1. Factory-built commercial cooking recirculating systems *listed* and *labeled* in accordance with UL 710B, and installed in accordance with Section 304.1. Spaces in which such systems are located shall be considered to be kitchens and shall be ventilated in accordance with Table 403.3.1.1. For the purpose of determining the floor area required to be ventilated, each individual *appliance* shall be considered as occupying not less than 100 square feet (9.3 m²).
 - 2.2. Cooking *appliances* equipped with integral down-draft exhaust systems are *listed* and *labeled* for the application in accordance with NFPA 96.
 - 2.3. Smoker ovens with the integral exhaust systems are *listed* and tested for the application.
3. ~~2.4~~ Ovens *listed* and *labeled* for use with wood fuel in accordance with UL 2162 and vented in accordance with the manufacturer's instructions.
4. ~~2.5~~ An electric cooking *appliance* *listed* and *labeled* in accordance with UL 197 for reduced grease emissions.
5. ~~2.6~~ Commercial electric dishwashers incorporating a self-contained condensing system *listed* and *labeled* in accordance with UL 921.
6. ~~2.7~~ Where the heat and moisture loads from dishwashers and *appliances* that produce heat or moisture and do not produce grease or smoke as a result of the cooking process are incorporated into the HVAC system design or into the design of a separate removal system. Spaces containing such cooking *appliances* that do not require Type II hoods shall be provided with exhaust at a rate of 0.70 cfm per square foot [0.00356 m³/(s × m²)]. For the purpose of determining the floor area required to be exhausted, each individual *appliance* that is not required to be installed under a Type II hood shall be considered as occupying not less than 100 square feet (9.3 m²). Such additional square footage shall be provided with exhaust at a rate of 0.70 cfm per square foot [0.00356 m³/(s × m²)].

Reason Statement: This proposal is an editorial cleanup of code change proposals during the 2024 ICC code development cycle. It was always intended that exception 1 would remain as an exception for exhaust hoods listed labeled to UL 710, and not recirculating systems listed and labeled to UL 710B. The exception for the requirement of a type I hood in item 2 addresses UL 710B recirculating systems. This proposal corrects an oversight during the code development process and ensures that there is a path in the code to use a hood listed to UL 710. In addition, the numbering has been corrected to accurately depict the intent of the proposal. There is identical

language that has been moved to the consent agenda for the 2027 ICC code development cycle.

Cost Impact: The code change proposal will not increase or decrease the cost This proposal is editorial in nature of codes that were approved during the 2024 ICC code development cycle. It does not add new requirements, only maintains the existing requirements in the 2021 mechanical code.

M508.2-24

IMC®: 508.2

Proponents: Dennis Hart, Fairfax County, representing VPMIA/VBCOA (dennis.hart@fairfaxcounty.gov)

2024 International Mechanical Code

Revise as follows:

508.2 Compensating hoods. Manufacturers of compensating hoods shall provide a label indicating the minimum exhaust flow, the maximum makeup airflow or both that provides capture and containment of the exhaust ~~effluent~~. Makeup air introduced directly into the exhaust hood cavity shall not be greater than 10 percent of the hood exhaust airflow rate.

Exception: Compensating hoods with *makeup air* supplied only from the front face discharge and side face discharge openings shall not be required to be *labeled* with the maximum makeup airflow.

Reason Statement: Virginia removed the kitchen hood section of VECC C403.7.5 in its entirety from the 2018 VECC due to a conflict between the maximum exhaust flow rate defined by the energy code being less than the minimum flow rate required for grease and smoke removal for unlisted hoods in the mechanical code. Although pertaining only to compensating hoods, the sentence “Replacement air introduced directly into the exhaust hood cavity shall not be greater than 10 percent of the hood exhaust airflow rate” was also deleted as part of that amendment.

The sentence “Replacement air introduced directly into the exhaust hood cavity shall not be greater than 10 percent of the hood exhaust airflow rate” was originally added to the 2015 IECC as a result of improved kitchen hood testing standards that indicated thermal plume spillover outside the hood for supplies internal hood supply air rates of greater than 10 percent that would not be detected by the standard UL710 testing.

Since this sentence is intended to increase smoke and grease capture of commercial hoods, it should be added back in to either the VECC or the VMC.

Cost Impact: The code change proposal will not increase or decrease the cost There is no additional cost because it was never intended to allow greater than 10 percent makeup air to be directly introduced into the hood cavity.

M607.6.2.2-24

VMC: 607.6.2.2; VCC: 717.6.2.2

Proponents: Dennis Hart, Fairfax County, representing VPMIA/VBCOA (dennis.hart@fairfaxcounty.gov)

2021 Virginia Mechanical Code

Delete without substitution:

607.6.2.2 Equipment shutdown. Where ceiling radiation dampers are listed as static dampers, the HVAC *equipment* shall be effectively shut down to stop the airflow prior to the damper closing using one of the following methods:

1. A duct detector installed in the return duct.
2. An area smoke detector interlocked with the HVAC *equipment*.
3. A listed heat sensor installed in the return duct.

2021 Virginia Construction Code

Delete without substitution:

717.6.2.2 Equipment shutdown. Where ceiling radiation dampers are listed as static dampers, the HVAC *equipment* shall be effectively shut down to stop the airflow prior to the damper closing using one of the following methods:

1. A duct detector installed in the return duct.
2. An area smoke detector interlocked with the HVAC *equipment*.
3. A listed heat sensor installed in the return duct.

Reason Statement: This code section was a previous Virginia amendment to the International Mechanical Code. Previously, radiation dampers listed as static dampers were not addressed in the code. During the 2021 code update cycle, the IMC addressed this topic in sections 607.6.2.1, 607.6.2.1.1 and 607.6.2.1.2. When Virginia adopted the 2021 IMC with amendments, the Virginia code section and the sections in the IMC were never correlated and both code sections remained. This proposal deletes the Virginia amendment.

Cost Impact: The code change proposal will not increase or decrease the cost. This proposal will not increase or decrease the cost of construction.

M1103.1-24

IMC®: TABLE 1103.1, 1104.4.1, 1104.4.2, 1109.2.5

Proponents: Dennis Hart, Fairfax County, representing VPMIA/VBCOA (dennis.hart@fairfaxcounty.gov)

2024 International Mechanical Code

Revise as follows:

TABLE 1103.1 REFRIGERANT CLASSIFICATION, AMOUNT AND OEL

Portions of table not shown remain unchanged.

CHEMICAL REFRIGERANT	FORMULA	CHEMICAL NAME OF BLEND	REFRIGERANT SAFETY GROUP CLASSIFICATION	AMOUNT OF REFRIGERANT PER OCCUPIED SPACE			(F) DEGREES OF HAZARD ^a
				RCL	LFL	OEL	

For SI: 1 pound = 0.454 kg, 1 cubic foot = 0.0283 m³.

- Degrees of hazard are for health, fire, and reactivity, respectively, in accordance with NFPA 704.
- Reduction to 1-0-0 is allowed if analysis satisfactory to the code official shows that the maximum concentration for a rupture or full loss of refrigerant charge would not exceed the IDLH, considering both the refrigerant quantity and room volume.
- Class I ozone depleting substance; prohibited for new installations.
- Occupational Exposure Limit based on the OSHA PEL, ACGIH TLV-TWA, the TERA WEEL or consistent value on a time-weighted average (TWA) basis (unless noted C for ceiling) for an 8 hr/d and 40 hr/wk.

1104.4.1 Noncommunicating spaces. ~~Where For Group A1 and B1 refrigerants, where the~~ refrigerant-containing parts of a system are located in one or more spaces that do not communicate through permanent openings or HVAC ducts, the volume of the smallest, enclosed occupied space shall be used to determine the permissible quantity of refrigerant in the system.

~~For all other refrigerant classifications, where the refrigerant-containing parts of a system are located in one or more spaces that do not communicate through permanent openings or HVAC ducts, the volume of the smallest, enclosed occupied or unoccupied space shall be used to determine the permissible quantity of refrigerant in the system~~

1104.4.2 Communicating spaces. ~~Where For Group A1 and B1 refrigerants, where an~~ evaporator or condenser is located in an air duct system, the volume of the smallest, enclosed occupied space served by the duct system shall be used to determine the maximum allowable quantity of refrigerant in the system.

~~For all other refrigerant classifications, where an evaporator or condenser is located in an air duct system, the volume of the smallest, enclosed occupied or unoccupied space served by the duct system shall be used to determine the maximum allowable quantity of refrigerant in the system~~

Exception: If airflow to any enclosed space cannot be reduced below one-quarter of its maximum, the entire space served by the air duct system shall be used to determine the maximum allowable quantity of refrigerant in the system.

1109.2.5 Refrigerant pipe shafts. Refrigerant piping that penetrates two or more floor/ceiling assemblies shall be enclosed in a fire-resistance-rated shaft enclosure. The fire-resistance-rated shaft enclosure shall comply with Section 713 of the *International Building Code*.

Exceptions:

- Refrigeration systems using R-718 refrigerant (water).
- Piping in a direct refrigeration system ~~using Group A1 refrigerant~~ where the refrigerant quantity does not exceed the limits of Table 1103.1 for the smallest occupied space through which the piping passes.
- Piping located on the exterior of the *building* where vented to the outdoors.

Reason Statement: For decades typical human comfort cooling was based on A1 refrigerants which were nonflammable. The only

concern for volume calculations was asphyxiation. With the introduction of A2L refrigerant there is a flammability component introduced that wasn't a concern with A1 refrigerant. Exceeding the RCL in an unoccupied space such as an elevator machine room, could create an ignition issue.

Cost Impact: The code change proposal will not increase or decrease the cost This calculation is performed during the design phase and should not affect the overall cost of the project.

M1103.1(1)-24

IMC®: TABLE 1103.1

Proponents: Dennis Hart, Fairfax County, representing VPMIA/VBCOA (dennis.hart@fairfaxcounty.gov); Thomas Deary, representing AHRI (tdeary@ahrinet.org).

2024 International Mechanical Code

Revise as follows:

TABLE 1103.1 REFRIGERANT CLASSIFICATION, AMOUNT AND OEL

Portions of table not shown remain unchanged.

CHEMICAL REFRIGERANT	FORMULA	CHEMICAL NAME OF BLEND	REFRIGERANT SAFETY GROUP CLASSIFICATION	AMOUNT OF REFRIGERANT PER OCCUPIED SPACE					(F) DEGREES OF HAZARD ^a	
				RCL		LFL		OEL		
R-444A	zeotrope	R-32/152a/1234ze(E) (12.0/5.0/83.0)	A2L	5+ 5.0	21,000	8+ 80	19.9	82,000	924+ 319.4	850
R-444B	zeotrope	R-32/152a/1234ze(E) (41.5/10.0/48.5)	A2L	4.3	23,000	69 70	17.3	93,000	277+ 278.1	930
R-445A	zeotrope	R-744/134a/1234ze(E) (6.0/9.0/85.0)	A2L	4+ 5.4	16,000	67 87	2+ 21.6	63,000	347.4	930
R-446A	zeotrope	R-32/1234ze(E)/600 (68.0/29.0/3.0)	A2L	2+ 3.7	16,000 23,000	99 59	13+ 14.8	62,000 93,000	217+ 237.7	960
R-447A	zeotrope	R-32/125/1234ze(E) (68.0/3.5/28.5)	A2L	2+ 5.2	16,000 32,000	42 83	10+ 20.6	65,000 128,000	309+ 331.4	960
R-447B	zeotrope	R-32/125/1234ze(E) (68.0/8.0/24.0)	A2L	2+ 4.8	16,000 30,000	42 78	20+ 19.5	121,000	312.7	970
R-451A	zeotrope	R-1234yf/134a (89.8/10.2)	A2L	5+ 5.3	18,000	81	20+ 21.3	70,000 74,000	326+ 341.6	530
R-451B	zeotrope	R-1234yf/134a (88.8/11.2)	A2L	5.0	18,000	81	20+ 21.3	70,000 74,000	326+ 341.6	530
R-454A	zeotrope	R-32/1234yf (35.0/65.0)	A2L	3+ 4.4	16,000 21,000	62 70	18+ 17.5	63,000 84,000	299+ 281.4	690
R-454B	zeotrope	R-32/1234yf (68.9/31.1)	A2L	3+ 4.6	19,000 29,000	49 74	22+ 18.5	77,000 115,000	352+ 296.8	850
R-454C	zeotrope	R-32/1234yf (21.5/78.5)	A2L	4+ 4.6	19,000	7+ 73	10+ 18.2	62,000 77,000	209+ 291.7	620
R-455A	zeotrope	R-744/32/1234yf (3.0/21.5/75.5)	A2L	4+ 6.8	22,000 30,000	79 108	26.9	118,000	432.1	650

For SI: 1 pound = 0.454 kg, 1 cubic foot = 0.0283 m³.

- Degrees of hazard are for health, fire, and reactivity, respectively, in accordance with NFPA 704.
- Reduction to 1-0-0 is allowed if analysis satisfactory to the code official shows that the maximum concentration for a rupture or full loss of refrigerant charge would not exceed the IDLH, considering both the refrigerant quantity and room volume.
- Class I ozone depleting substance; prohibited for new installations.
- Occupational Exposure Limit based on the OSHA PEL, ACGIH TLV-TWA, the TERA WEEL or consistent value on a time-weighted average (TWA) basis (unless noted C for ceiling) for an 8 hr/d and 40 hr/wk.

Reason Statement: This proposal updates Table 1103.1 in the 2024 IMC to correct errors in Refrigerant Concentration Limits (RCLs) and Lower Flammability Limits (LFLs) that were introduced from ASHRAE Standard 34-2022. These incorrect values may lead to code enforcement conflicts and create safety concerns by allowing larger refrigerant charges or improper detector settings for A2L refrigerants. As A2L refrigerants are now widely used due to the EPA's 700 GWP limit effective January 1, 2025, it is critical that the IMC reflect accurate data. The proposed changes align the IMC with updated ASHRAE standards and help ensure safe and code-compliant installations.

A proposal to update these values was approved at the CAH2 for the 2027 IMC. There is an ICC Critical Amendment that is pending to correct the values in the 2024 IMC. Please see the link to the pending ICC Critical Amendment below.

https://www.iccsafe.org/wp-content/uploads/ICC-TSG-000001_Toto_ASHRAE_2024-IMC_PublicSubmittal.pdf

Cost Impact: The code change proposal will not increase or decrease the cost This proposal is editorial in nature and will not increase or decrease the cost of construction.

Attached Files

- Refrigerant Table Update.docx
<https://va.cdpaccess.com/proposal/1476/2142/files/download/955/>

Wednesday, February 19, 2025



ICC Interim Critical Amendment (ICA)

This is the starting point to request an interim code amendment to an existing code outside of the normal code development cycle. You can refer to [ICC's CP-28 Section 2.3](#).

This online form takes you through the process to submit an interim critical amendment request.

Critical Nature

By definition the proposed amendment is required outside of the normal code development cycle because it is an issue of a critical nature and is an immediate threat to health and safety that warrants a timelier response than allowed by the Code Development Process schedule.

The proposed change:

- Corrects an error or omission overlooked during the regular code cycle
- Mitigates a previously unknown hazard

Scale of the problem/risk

- Local (single state)
- Local (multiple states / regions)
- National
- Global

Submitter Information

This section collects required information for the submitter seeking an ICA.

- Name

Emily Toto
- Email
- Phone Number
- Who are you representing?

ASHRAE

Represented Entity

You stated that you are representing an entity other than yourself. The following information identified with an "*" is required to process your request for an ICA.

Are you legal a representative for that entity?

No

Represented Entity's Address

180 Technology Pkwy NW
Peachtree Corners, GA, 30092

Represented Entity's Email

standards.section@ashrae.org

Represented Entity's Phone Number

(404) 636-8400

Requested Amendment Information

The following information is required to process the request for an ICA.

I-Code(s) Impacted

IMC (International Mechanical Code)

Sections of the selected I-Code Impacted

Table 1103.1

Suggested New Language

Please see attached pdf

Justification for the change.

Please be as succinct as possible describing why the ICA needed now and cannot be processed during the normal code development process.

Justification

The 2024 edition of the International Mechanical Code (IMC) was updated to include reference to the 2022 edition of ASHRAE Standard 34. Additionally, Table 1103.1 was also updated to align with the latest information, at that time, from ASHRAE Standard 34. As part of this effort, values for Refrigerant Concentration Limits (RCLs) and Lower Flammability Limits (LFLs) were also included in this table, as were new refrigerants from the 2022 edition of ASHRAE Standard 34.

Unfortunately, the 2022 edition of ASHRAE Standard 34 contained errors for a number of these newly incorporated refrigerant properties. As such, updates to Table 1103.1 are needed to resolve potential safety concerns that may now arise from the use of incorrect RCLs and LFLs for Safety Group A2L refrigerant blends that were adopted into the 2024 edition of the IMC. Given the ongoing transition towards Safety Group A2L refrigerants, which are classified as having "Lower Flammability" per ASHRAE Standard 34, the need for these changes is critical.

ASHRAE Standard 15, ASHRAE Standard 15.2, and UL/CSA 60335-2-40 all rely on the correct values listed in ASHRAE Standard 34. The IMC requires mechanical equipment to be installed in accordance with the manufacturer's instructions. The installation instructions are based on UL/CSA 60335-2-40. This will result in a conflict with the values listed in the IMC resulting in confusion with the Code Official regarding enforcement. This adds to the need for these critical changes.

Errors in some of the refrigerant properties for A2L refrigerant blends were unintentionally propagated in ASHRAE Standard 34. Code change proposals submitted to ICC for consideration by the IMC Code Change Committee were believed to contain accurate refrigerant property information, based on published values in the 2022 edition of ASHRAE Standard 34. Once these errors were discovered, corrective action was taken by SSPC34, as demonstrated by the publication of Addendum a to the 2022 edition of ASHRAE Standard 34. Regrettably, these errors were not discovered and corrected in time for the 2024 edition of the IMC, which included updates based on the 2022 edition of ASHRAE Standard 34. A proposal to update the refrigerant properties in Table 1103.1 has been submitted by ASHRAE for the 2027 IMC. The Code Change Committee recommended approval of the changes to update this table. However, this does not rectify the values that currently exist in the 2024 edition of this code.

References to the refrigerant quantities in Table 1103.1, based on either RCL or LFL, are used repeatedly throughout Chapter 11 of the IMC, such as for classifying low-probability systems (e.g., Section 1103.3.1), determining when components need to be located outdoors or in machinery rooms (Section 1104.2), charge limits for Institutional Occupancies (e.g., Section 1104.2.1), A2L machinery room detector activation levels (e.g., Table 1106.4.2), exceptions for refrigerant pipe shafts (e.g., Section 1109.2.5), and

for refrigerant test gas concentrations for factory test procedures (e.g., Section 1110.4). They are also used throughout safety standards, such as ASHRAE Standard 15, as a basis for leak mitigation actions. As such, it is imperative that these values are correct.

Some of the errors identified by this ICA include larger RCLs or LFLs in Table 1103.1. These errors may lead to Code Officials erroneously approving larger refrigerant charge sizes for air conditioning and refrigeration (ACR) systems than would be allowed by safety standards, such as ASHRAE Standard 15 and UL/CSA 60335-2-40. This could result in the erosion of safety factors designed to prevent flammable concentrations of refrigerant from forming in a space. This could also result, for example, in the use of improper settings for refrigerant detection levels in machinery rooms, impeding the effective use of ventilation as a life saving measure. Going forward, the corrections proposed by this ICA to Table 1103.1 would help prevent the use of incorrect values of RCL and LFL that could lead to unsafe installations of ACR systems using Group A2L refrigerants.

Additionally, the EPA’s Technology Transition Rule imposed a 700 GWP limit for most new air conditioning system installations, starting January 1, 2025. As such, air conditioning equipment manufacturers have now shifted to the use of A2L refrigerants in new systems. Given the passing of this deadline, and with states now adopting or using the 2024 edition of the IMC, the changes provided by this ICA are urgently required. As the values of RCL and LFL are key to safety mitigations used in next generation ACR system installations, this ICA will help to ensure a safe and effective refrigerant transition.

Finally, a similar proposal (TIA 003-24) was submitted to and unanimously approved by the UMC Technical Committee of IAPMO for both Technical Merit and Emergency Nature and issued by the IAPMO Standards Council on November 06, 2024.

Date Required

Identify the date that this ICA is required by to avoid the issues noted in your justification. Please be sure to explain in your justification above why this date is required. Some ICA's are not needed currently but are needed before next expected publish date of the normal development cycle. If it is needed now, please just select today's date.

Date

Wednesday, February 19, 2025

Supporting Documents



Written Endorsement

You need to have the written endorsement of two (2) members from the relevant code development committees that are responsible for the affected code sections.

If you have those available now, please provide them now. If you do not have those now, you can submit those later via email to codeapps@iccsafe.org.

If you do not have contact information for the relevant committee members the ICC staff will send your ICA request to them to see if any are interested in endorsing the proposed ICA. We will contact you after we hear from the committee members as to their position on the ICA submitted. Additionally, your contact information will be provided to the relevant committee members so they can reach out directly to you with any questions.

Written Endorsement Method

I do not have contact information for the relevant committees and wish for the ICC staff to submit this ICA to the committee members on my behalf.

Signature (I authorize the ICC Staff to submit this ICA request packet to the relevant committee's members asking for endorsement support of the proposed changes.)



ICA Submission ID

#ICA-TSG-000001

Interim Critical Amendment (ICA) to the 2024 International Mechanical Code (IMC)

Reference Code Section: 2024 IMC Table 1103.1

Submitter Name: Emily Toto
Company: ASHRAE
Phone Number: (678) 539-1194
Date: February 19, 2025

Proposed language for ICA:

Revise Table 1103.1 as follows:

TABLE 1103.1-REFRIGERANT CLASSIFICATION, AMOUNT AND OEL-continued										
CHEMICAL REFRIGERANT	FORMULAS	CHEMICAL NAME OF BLENDS	REFRIGERANT SAFETY GROUP CLASSIFICATION	AMOUNT OF REFRIGERANT PER OCCUPIED SPACE						
				RCL			LFL			OEL
				Lb/MCf	ppm	g/m ³	Lb/MCf	ppm	g/m ³	ppm
R-444A	zeotrope	R-32/152a/1234ze(E) (12.0/5.0/83.0)	A2L	~~5.45.0~~	21,000	~~8180~~	19.9	82,000	~~324.8319.4~~	850
R-444B	zeotrope	R-32/152a/1234ze(E) (41.5/10.0/48.5)	A2L	4.3	23,000	~~6970~~	17.3	93,000	~~277.3278.1~~	930
R-445A	zeotrope	R-744/134a/1234ze (E) (6.0/9.0/85.0)	A2L	~~4.25.4~~	16,000	~~6787~~	~~2.721.6~~	63,000	347.4	930
R-446A	zeotrope	R-32/1234ze(E)/600 (68.0/29.0/3.0)	A2L	~~2.53.7~~	~~16,00023,000~~	~~3959~~	~~13.514.8~~	~~62,00093,000~~	~~217.4237.7~~	960
R-447A	zeotrope	R-32/125/1234ze(E) (68.0/3.5/28.5)	A2L	~~2.65.2~~	~~16,00032,000~~	~~4283~~	~~18.920.6~~	~~65,000128,000~~	~~303.5331.4~~	960
R-447B	zeotrope	R-32/125/1234ze(E) (68.0/8.0/24.0)	A2L	~~2.64.8~~	~~16,00030,000~~	~~4278~~	~~20.619.5~~	121,000	312.7	970
R-451A	zeotrope	R-1234yf/134a (89.8/10.2)	A2L	~~5.05.3~~	18,000	81	~~20.321.3~~	~~70,00074,000~~	~~326.6341~~	530
R-451B	zeotrope	R-1234yf/134a (88.8/11.2)	A2L	5.0	18,000	81	~~20.321.3~~	~~70,00074,000~~	~~326.6341.6~~	530
R-454A	zeotrope	R-32/1234yf (35.0/65.0)	A2L	~~3.24.4~~	~~16,00021,000~~	~~5270~~	~~18.317.5~~	~~63,00084,000~~	~~293.9281.4~~	690
R-454B	zeotrope	R-32/1234yf (68.9/31.1)	A2L	~~3.14.6~~	~~19,00029,000~~	~~4974~~	~~22.018.5~~	~~77,000115,000~~	~~352.6296.8~~	850
R-454C	zeotrope	R-32/1234yf (21.5/78.5)	A2L	~~4.44.6~~	19,000	~~7173~~	~~18.018.2~~	~~62,00077,000~~	~~289.5291.7~~	620
R-455A	zeotrope	R-744/32/1234yf (3.0/21.5/75.5)	A2L	~~4.96.8~~	~~22,00030,000~~	~~79108~~	26.9	118,000	432.1	650

(portions of table not shown remain unchanged)

Substantiation

The 2024 edition of the International Mechanical Code (IMC) was updated to include reference to the 2022 edition of ASHRAE Standard 34. Additionally, Table 1103.1 was also updated to align with the latest information, at that time, from ASHRAE Standard 34. As part of this effort, values for Refrigerant Concentration Limits (RCLs) and Lower Flammability Limits (LFLs) were also included in this table, as were new refrigerants from the 2022 edition of ASHRAE Standard 34.

Unfortunately, the 2022 edition of ASHRAE Standard 34 contained errors for a number of these newly incorporated refrigerant properties. As such, updates to Table 1103.1 are needed to resolve potential safety concerns that may now arise from the use of incorrect RCLs and LFLs for Safety Group A2L refrigerant blends that were adopted into the 2024 edition of the IMC. Given the ongoing transition towards Safety Group A2L refrigerants, which are classified as having “Lower Flammability” per ASHRAE Standard 34, the need for these changes is critical.

ASHRAE Standard 15, ASHRAE Standard 15.2, and UL/CSA 60335-2-40 all rely on the correct values listed in ASHRAE Standard 34. The IMC requires mechanical equipment to be installed in accordance with the manufacturer's instructions. The installation instructions are based on UL/CSA 60335-2-40. This will result in a conflict with the values listed in the IMC resulting in confusion with the Code Official regarding enforcement. This adds to the need for these critical changes.

Critical Nature

In accordance with ICC's CP#28-05 – Code Development procedures, this proposal qualifies as an Interim Critical Amendment (ICA) by meeting factors **a** and **c** of **Section 2.3.2.3**.

a) The proposed ICA corrects an error or an omission that was overlooked during the regular code development process.

&

c) The proposed ICA mitigates a previously unknown hazard.

Errors in some of the refrigerant properties for A2L refrigerant blends were unintentionally propagated in ASHRAE Standard 34. Code change proposals submitted to ICC for consideration by the IMC Code Change Committee were believed to contain accurate refrigerant property information, based on published values in the 2022 edition of ASHRAE Standard 34. Once these errors were discovered, corrective action was taken by SSPC34, as demonstrated by the publication of Addendum a to the 2022 edition of ASHRAE Standard 34. Regrettably, these errors were not discovered and corrected in time for the 2024 edition of the IMC, which included updates based on the 2022 edition of ASHRAE Standard 34. A proposal to update the refrigerant properties in Table 1103.1 has been submitted by ASHRAE for the 2027 IMC. The Code Change Committee recommended approval of the changes to update this table. However, this does not rectify the values that currently exist in the 2024 edition of this code.

References to the refrigerant quantities in Table 1103.1, based on either RCL or LFL, are used repeatedly throughout Chapter 11 of the IMC, such as for classifying low-probability systems (e.g., Section 1103.3.1), determining when components need to be located outdoors or in machinery rooms (Section 1104.2), charge limits for Institutional Occupancies (e.g., Section 1104.2.1), A2L machinery room detector activation levels (e.g., Table 1106.4.2), exceptions for refrigerant pipe shafts (e.g., Section 1109.2.5), and for refrigerant test gas concentrations for factory test procedures (e.g., Section 1110.4). They are also used throughout safety standards, such as ASHRAE Standard 15, as a basis for leak mitigation actions. As such, it is imperative that these values are correct.

Some of the errors identified by this ICA include larger RCLs or LFLs in Table 1103.1. These errors may lead to Code Officials erroneously approving larger refrigerant charge sizes for air conditioning and refrigeration (ACR) systems than would be allowed by safety standards, such as ASHRAE Standard 15 and UL/CSA 60335-2-40. This could result in the erosion of safety factors designed to prevent flammable concentrations of refrigerant from forming in a space. This could also result, for example, in the use of improper settings for refrigerant detection levels in machinery rooms, impeding the effective use of ventilation as a life saving measure. Going forward, the corrections proposed by this ICA to Table 1103.1 would help prevent the use of incorrect values of RCL and LFL that could lead to unsafe installations of ACR systems using Group A2L refrigerants.

Additionally, the EPA's Technology Transition Rule imposed a 700 GWP limit for most new air conditioning system installations, starting January 1, 2025. As such, air conditioning equipment manufacturers have now shifted to the use of A2L refrigerants in new systems. Given the passing of this deadline, and with states now adopting or using the 2024 edition of the IMC, the changes provided by this ICA are urgently required. As the values of RCL and LFL are key to safety mitigations used in next generation ACR system installations, this ICA will help to ensure a safe and effective refrigerant transition.

Finally, a similar proposal (TIA 003-24) was submitted to and unanimously approved by the UMC Technical Committee of IAPMO for both *Technical Merit* and *Emergency Nature* and issued by the IAPMO Standards Council on November 06, 2024.

Submitter signature: 

Date: 2/19/2025

M1109.2.5-24

IMC®: 1109.2.5 Refrigerant pipe shafts., 1109.3.2 Shaft ventilation.

Proponents: Greg Johnson, Johnson & Associates Consulting Services, representing self (gjohnsonconsulting@gmail.com)

2024 International Mechanical Code

Revise as follows:

1109.2.5 Refrigerant pipe shafts. N/A. Refrigerant piping that penetrates two or more floor/ceiling assemblies shall be enclosed in a fire-resistance-rated shaft enclosure. The fire-resistance-rated shaft enclosure shall comply with Section 713 of the *International Building Code*.

Exceptions:

1. *Refrigeration* systems using R-718 refrigerant (water).
2. Piping in a direct refrigeration system using ~~Group A1~~ refrigerant where the refrigerant quantity does not exceed the limits of Table 1103.1 for the smallest occupied space through which the piping passes.
3. Piping located on the exterior of the *building* where vented to the outdoors.

1109.3.2 Shaft ventilation. N/A. ~~Refrigerant~~ Required refrigerant pipe shafts with systems using Group A2L or B2L refrigerant shall be naturally or mechanically ventilated. Refrigerant pipe shafts with one or more systems using any Group A2, A3, B2 or B3 refrigerant shall be continuously mechanically ventilated and shall include a refrigerant detector. The shaft ventilation exhaust outlet shall comply with Section 501.3.1. Naturally ventilated shafts shall have a pipe, duct or conduit not less than 4 inches (102 mm) in diameter that connects to the lowest point of the shaft and extends to the outdoors. The pipe, duct or conduit shall be level or pitched downward to the outdoors. Mechanically ventilated shafts shall have a minimum airflow velocity in accordance with Table 1109.3.2. The mechanical ventilation shall be continuously operated or activated by a refrigerant detector. Systems utilizing a refrigerant detector shall activate the mechanical ventilation at a maximum refrigerant concentration of 25 percent of the lower flammable limit of the refrigerant. The detector, or a sampling tube that draws air to the detector, shall be located in an area where refrigerant from a leak will concentrate. The shaft shall not be required to be ventilated for double-wall refrigerant pipe where the interstitial space of the double-wall pipe is vented to the outdoors.

Reason Statement: The proposed change to Sec 1109.2.5 is identical to IMC code change M75-24 which is on the consent agenda for the 2027 IMC. The limitation of Exc. 2 of IMC Sec. 1109.2.5 to Group A1 refrigerants was - as documented by the original proponent, Julius Ballanco - a mistake that happened when a draft document from an ASHRAE 15 work group was submitted as part of a very large code change (M99-18) in the 2018 IMC development year.

ASHRAE 15 has never limited the exception (Sec. 9.12.1.5.1, shaft alternative in ASHRAE terminology) to only Group 1 refrigerants; doing so would compromise the purpose of ASHRAE Standard 34, Table 4-1I (IMC Table 1103.1, Refrigerant Classification, Amount and OEL), which provides safe release limits for all refrigerants. The proposed change to IMC Sec. 1109.3.2 clarifies that only where a shaft is required (because safe release limits could be exceeded) should ventilation and drainage be required. This would permit A2L refrigerant piping below safe release limits to be run in a shaft for convenience without ventilation and drainage, just as if it were run through some other building cavity.

Cost Impact: The code change proposal will decrease the cost Designer clients have told me that the cost of ventilated and drained shafts for A2L piping in a 300 unit apartment building is around \$300K.

M-FG310.2-24

IFGC: 310.2, 310.2.1, 310.2.2, 310.2.3, 310.2.4, 310.2.5, 310.3, 403.4.5

Proponents: Dennis Hart, Fairfax County, representing VPMIA/VBCOA (dennis.hart@fairfaxcounty.gov)

2024 International Fuel Gas Code

Delete without substitution:

310.2 CSST. This section applies to corrugated stainless steel tubing (CSST) that is not listed with an arc-resistant jacket or coating system in accordance with ANSI LC 1/CSA 6.26. CSST gas *pip*ing systems and *pip*ing systems containing one or more segments of CSST shall be electrically continuous and bonded to the electrical service grounding electrode system or, where provided, the lightning protection grounding electrode system.

310.2.1 Point of connection. The bonding jumper shall connect to a metallic pipe, pipe fitting or CSST fitting.

310.2.2 Size and material of jumper. The bonding jumper shall be not smaller than 6 AWG copper wire or equivalent.

310.2.3 Bonding jumper length. The length of the bonding jumper between the connection to a gas *pip*ing system and the connection to a grounding electrode system shall not exceed 75 feet (22 860 mm). Any additional grounding electrodes installed to meet this requirement shall be bonded to the electrical service grounding electrode system or, where provided, the lightning protection grounding electrode system.

310.2.4 Bonding connections. Bonding connections shall be in accordance with NFPA 70.

310.2.5 Connection devices. Devices used for making the bonding connections shall be *listed* for the application in accordance with UL 467.

Revise as follows:

310.3 Arc-resistant CSST. Corrugated stainless steel tubing (CSST) that is listed with an arc-resistant jacket or coating system shall be *listed* as arc resistant in accordance with ANSI LC 1/CSA 6.26. ~~Arc-resistant-jacketed CSST 6.26. Arc-resistant-jacketed CSST Arc-resistant-jacketed CSST~~ shall be electrically continuous and bonded to an effective ground fault current path. ~~Where any CSST used in a pip~~ing system does not have an arc-resistant jacket or coating system, the bonding requirements of Section 310.2 shall apply. Arc-resistant-jacketed CSST shall be considered to be bonded where it is connected to one or more *appliances* that are connected to the equipment grounding conductor of the circuit that supplies that ~~appliance(s): appliance(s).~~ ~~Where arc-resistant CSST is installed in a piping system without an appliance with an equipment grounding conductor, or where the system contains any non-arc-resistant CSST, the piping system shall be bonded in accordance with the manufacturer's installation instructions and ANSI LC1/CSA 6.26 Annex C.~~

403.4.5 Corrugated stainless steel tubing. Corrugated stainless steel tubing shall be *listed* in accordance with ANSI LC 1/CSA 6.26 and shall be arc-resistant in accordance with 5.16 of LC 1/CSA 6.26.

Exception: ~~Corrugated stainless steel tubing installed below grade outside of the building in compliance with 404.11 or beneath the building in compliance with 404.14 shall not be required to be arc-resistant.~~

Reason Statement: This proposal eliminates the use of non-arc-resistant jacketed corrugated stainless steel tubing (CSST) and permits only arc-resistant jacketed CSST to be installed. Arc-resistant CSST has been shown to significantly reduce the risk of fire caused by arcing from nearby electrical faults or lightning strikes, a known hazard associated with non-arc resistant jacketed CSST.

Non-arc-resistant CSST has a long history of performance concerns related to lightning-related damage and has been the subject of

numerous manufacturer warnings, insurance claims, and litigation. In response, manufacturers developed arc-resistant CSST with enhanced protection. Allowing non-arc-resistant CSST to remain in the code increases risk and perpetuates the need for additional safety measures, such as prescriptive bonding.

By limiting installations to arc-resistant CSST only, this proposal also removes the need for prescriptive bonding requirements from the code. Instead, bonding requirements are to be determined and specified by the manufacturer as part of their listed installation instructions. This approach aligns with how other listed and tested gas piping products are regulated, simplifying enforcement and ensuring that bonding practices are consistent with product-specific requirements.

This change reflects industry best practices, reduces complexity in the field, improves safety, and enhances code clarity by removing outdated and risk-prone options from the code.

Cost Impact: The code change proposal will not increase or decrease the cost. While the cost per foot of arc-resistant CSST is higher than that of non-arc-resistant CSST, the overall expense may be offset by the elimination of additional bonding requirements.

M-FG407.2-24

IFGC: 407.2

Proponents: Dennis Hart, Fairfax County, representing VPMIA/VBCOA (dennis.hart@fairfaxcounty.gov)

2024 International Fuel Gas Code

Revise as follows:

407.2 Design and installation. *Piping* shall be supported with metal pipe hooks, metal pipe straps, metal bands, metal brackets, metal hangers or building structural components, suitable for the size of *piping*, of adequate strength and quality, and located at intervals so as to prevent or damp out excessive vibration. *Piping* shall be anchored to prevent undue strains on connected *appliances* and shall not be supported by other *piping*. Pipe hangers and supports shall conform to the requirements of MSS SP-58 and shall be spaced in accordance with Section 415. Supports, hangers and anchors shall be installed so as not to interfere with the free expansion and contraction of the *piping* between anchors. The components of the supporting *equipment* shall be designed and installed so that they will not be disengaged by movement of the supported *piping*.

Reason Statement: Gas piping should never be supported with plastic hangers or support. In a fire situation, these supports can melt causing gas pipe to break which can cause a catastrophic incident.

Cost Impact: The code change proposal will not increase or decrease the cost There is no additional cost because the 2021 VUSBC already requires metal supports.

RE3702.14-24

VRC: E3702.14

Proponents: Kyle Kratzer, Fairfax County, representing Fairfax County Land Development Services (kyle.kratzer@fairfaxcounty.gov)

2021 Virginia Residential Code

Revise as follows:

E3702.14 Branch-circuit requirement—summary. The requirements for circuits having two or more outlets, or receptacles, other than the receptacle circuits of Sections E3703.2, E3703.3 and E3703.4, are summarized in Table E3702.14. Branch circuits in *dwelling units* shall supply only loads within that *dwelling unit* or loads associated only with that *dwelling unit*. Branch circuits installed for the purpose of lighting, central alarm, signal, communications or other purposes for public or common areas of a two-family dwelling shall not be supplied from equipment that supplies an individual *dwelling unit*. (210.24 and 210.25)

Exception: Branch-circuits in a two-family dwelling that is constructed in accordance with Exception 3 of Section R302.3.

Reason Statement: This change clarifies that branch-circuits can be shared between a dwelling unit and its accessory dwelling unit (ADU). This change does not alter the requirement that each occupant shall have ready access to all overcurrent devices protecting the conductors supplying their dwelling unit. The revision aligns with amendments from the previous code cycle intended to reduce barriers to the creation of accessory dwelling units. By adding this exception, the provision removes ambiguity and promotes consistent interpretation and enforcement across jurisdictions.

Cost Impact: The code change proposal will decrease the cost This change eliminates unnecessary separation requirements for dwelling units that can share common areas, means of egress, and utilities.

RE3705.6-24

IRC: TABLE E3705.6 (Table 240.6)

Proponents: Joseph Willis, Prince William County, representing Virginia Chapter IAEE (jwillis@pwcgov.org)

2024 International Residential Code

Revise as follows:

TABLE E3705.6 (Table 240.6) STANDARD AMPERE RATING FOR FUSES AND INVERSE TIME CIRCUIT BREAKERS

STANDARD AMPERE RATINGS				
10	15	20	25	30
35	40	45	50	60
70	80	90	100	110
125	150	175	200	225
250	300	350	400	---

Reason Statement: The purpose of this proposal is to align the table for standard fuse and inverse time circuit breaker sizes with 2023 NFPA 70 section 240.6 and to accommodate the allowance for 10 amp circuits as outlined the E3702.3 of the 2024 International Residential Code

Cost Impact: The code change proposal will decrease the cost

While the instances of a 10 amp circuit being used for a typical one or 2 family dwelling, by adding a 10 amp circuit breaker to list of standard fuses and inverse time circuit breakers the option is given to the installer to install that circuit breaker of that rating. Without this being expressly allowed in the list, the installer would be required to install a circuit of a standard size, or install a circuit of a standard size then install a fused disconnect in the circuit to appropriately protect the devices and wiring at 10 amps.

Estimate cost savings per instance: Approximately \$100-\$125 per instance

RM-FG2411.2-24

IRC: G2411.2 (310.2), G2411.2.1 (310.2.1), G2411.2.2 (310.2.2), G2411.2.3 (310.2.3), G2411.2.4 (310.2.4), G2411.2.5 (310.2.5), G2411.3 (310.3), G2414.4.4 (403.4.5)

Proponents: Dennis Hart, Fairfax County, representing VPMIA/VBCOA (dennis.hart@fairfaxcounty.gov)

2024 International Residential Code

Delete without substitution:

G2411.2 (310.2) CSST. This section applies to corrugated stainless steel tubing (CSST) that is not *listed* with an arc-resistant jacket or coating system in accordance with ANSI LC1/CSA 6.26. CSST *gas piping systems* and piping systems containing one or more segments of CSST shall be electrically continuous and bonded to the electrical service grounding electrode system or, where provided, the lightning protection grounding electrode system.

G2411.2.1 (310.2.1) Point of connection. The *bonding jumper* shall connect to a metallic pipe, pipe fitting or CSST fitting.

G2411.2.2 (310.2.2) Size and material of jumper. The *bonding jumper* shall be not smaller than 6 AWG copper wire or equivalent.

G2411.2.3 (310.2.3) Bonding jumper length. The length of the *bonding jumper* between the connection to a *gas piping system* and the connection to a grounding electrode system shall not exceed 75 feet (22 860 mm). Any additional grounding electrodes installed to meet this requirement shall be bonded to the electrical service grounding electrode system or, where provided, the lightning protection grounding electrode system.

G2411.2.4 (310.2.4) Bonding connections. Bonding connections shall be in accordance with NFPA 70.

G2411.2.5 (310.2.5) Connection devices. Devices used for making the bonding connections shall be *listed* for the application in accordance with UL 467.

Revise as follows:

G2411.3 (310.3) Arc-resistant CSST. Corrugated stainless steel tubing (CSST) that is listed with an arc-resistant jacket or coating system shall be listed as arc-resistant in accordance with ANSI LC1/CSA 6.26.6.26. Arc-resistant-jacketed CSST shall be electrically continuous and bonded to an effective ground fault current path. Where any CSST used in a piping system does not have an arc-resistant jacket or coating system, the bonding requirements of Section G2411.2 shall apply. Arc-resistant-jacketed CSST shall be considered to be bonded where it is connected to one or more *appliances* that are connected to the *equipment* grounding conductor of the circuit that supplies that *appliance(s)*. Where arc-resistant CSST is installed in a piping system without an appliance with an equipment grounding conductor, or where the system contains any non-arc-resistant CSST, the piping system shall be bonded in accordance with the manufacturer's installation instructions and ANSI LC1/CSA 6.26 Annex C.

G2414.4.4 (403.4.5) Corrugated stainless steel tubing. Corrugated stainless steel *tubing* shall be *listed* in accordance with ANSI LC1/CSA 6.26 and shall be arc-resistant in accordance with 5.16 of LC 1/CSA 6.26.

Exception: Corrugated stainless steel tubing installed below grade outside of the building in compliance with 404.11 or beneath the building in compliance with 404.14 shall not be required to be arc-resistant.

Reason Statement:

This proposal eliminates the use of non-arc-resistant jacketed corrugated stainless steel tubing (CSST) and permits only arc-resistant jacketed CSST to be installed. Arc-resistant CSST has been shown to significantly reduce the risk of fire caused by arcing from nearby electrical faults or lightning strikes, a known hazard associated with non-arc resistant jacketed CSST.

Non-arc-resistant CSST has a long history of performance concerns related to lightning-related damage and has been the subject of numerous manufacturer warnings, insurance claims, and litigation. In response, manufacturers developed arc-resistant CSST with enhanced protection. Allowing non-arc-resistant CSST to remain in the code increases risk and perpetuates the need for additional safety measures, such as prescriptive bonding.

By limiting installations to arc-resistant CSST only, this proposal also removes the need for prescriptive bonding requirements from the code. Instead, bonding requirements are to be determined and specified by the manufacturer as part of their listed installation instructions. This approach aligns with how other listed and tested gas piping products are regulated, simplifying enforcement and ensuring that bonding practices are consistent with product-specific requirements.

This change reflects industry best practices, reduces complexity in the field, improves safety, and enhances code clarity by removing outdated and risk-prone options from the code.

Cost Impact: The code change proposal will not increase or decrease the cost. While the cost per foot of arc-resistant CSST is higher than that of non-arc-resistant CSST, the overall expense may be offset by the elimination of additional bonding requirements.

RM-FG2415.7-24

IRC: G2415.7 (404.7); IFGC: 404.7

Proponents: Dennis Hart, Fairfax County, representing VPMIA/VBCOA (dennis.hart@fairfaxcounty.gov)

2024 International Residential Code

Revise as follows:

G2415.7 (404.7) Protection against physical damage. Where *piping* will be concealed within *light-frame construction* assemblies, the *piping* shall be protected against penetration by fasteners in accordance with Sections G2415.7.1 through G2415.7.3.

Exception: Black steel *piping* ~~with a wall thickness Schedule 40 or greater~~ and galvanized steel *piping* shall not be required to be protected.

2024 International Fuel Gas Code

Revise as follows:

404.7 Protection against physical damage. Where *piping* will be concealed within light-frame construction assemblies, the *piping* shall be protected against penetration by fasteners in accordance with Sections 404.7.1 through 404.7.3.

Exception: Black steel *piping* ~~and with a wall thickness Schedule 40 or greater~~ and galvanized steel *piping* shall not be required to be protected.

Reason Statement: With the code now permitting the use of Schedule 10 black steel pipe, it is essential to require protection against screw and nail penetrations for black steel piping that is not Schedule 40. Schedule 10 piping has a thinner wall thickness than Schedule 40. Additionally, Type L and K copper, which have a greater wall thickness than Schedule 10 black steel, are already required to be protected. Therefore, it is only logical that Schedule 10 black steel piping should also be protected.

Cost Impact: The code change proposal will not increase or decrease the cost Protection is still required for piping.

RM-FG2442.3-24

VRC: G2442.5 (618.5)

Proponents: Kyle Kratzer, Fairfax County, representing Fairfax County Land Development Services (kyle.kratzer@fairfaxcounty.gov)

2021 Virginia Residential Code

Revise as follows:

G2442.5 (618.5) Return-air limitation. Return air from one *dwelling unit* shall not be discharged into another *dwelling unit*.

Exception: Where a two-family dwelling is constructed in accordance with Exception 3 of Section R302.3, the return air shall be permitted to discharge into either *dwelling unit*.

Reason Statement:

This change clarifies that return air may be shared between a dwelling unit and its accessory dwelling unit (ADU). The revision aligns with amendments from the previous code cycle intended to reduce barriers to the creation of accessory dwelling units. By adding this exception, the provision removes ambiguity and promotes consistent interpretation and enforcement across jurisdictions.

Cost Impact: The code change proposal will decrease the cost This change eliminates unnecessary separation requirements for dwelling units that can share common areas, means of egress, and utilities.

RP2903.10.1-24

IRC: P2903.10.1

Proponents: Kyle Kratzer, Fairfax County, representing Fairfax County Land Development Services (kyle.kratzer@fairfaxcounty.gov)

2024 International Residential Code

Revise as follows:

P2903.10.1 Service valve. Each *dwelling unit* shall be provided with an accessible *main* shutoff valve near the entrance of the water service. The valve shall be of a full-open type having nominal restriction to flow, with provision for drainage such as a bleed orifice or installation of a separate drain valve. Additionally, the water service shall be valved at the curb or *lot line* in accordance with local requirements.

Exception: Where a two-family dwelling is constructed in accordance with Exception 3 of Section R302.3, a single individual service valve shall be permitted to serve both the dwelling unit and accessory dwelling unit, provided that access to the service valve is available to the occupants of both dwelling units.

Reason Statement: This change clarifies that a water service shutoff valve may be shared between a dwelling unit and its accessory dwelling unit (ADU). The revision aligns with amendments from the previous code cycle intended to reduce barriers to the creation of accessory dwelling units. By adding this exception, the provision removes ambiguity and promotes consistent interpretation and enforcement across jurisdictions.

Cost Impact: The code change proposal will decrease the cost This change eliminates unnecessary separation requirements for dwelling units that can share common areas, means of egress, and utilities.

EB102.2-24

VEBC: 102.2

Proponents: Allison Cook, Arlington, Virginia, representing VBCOA VEBC Committee (acook1@arlingtonva.us); Ron Clements, Chesterfield, representing Building Inspection Department (clementsro@chesterfield.gov)

2021 Virginia Existing Building Code

Revise as follows:

102.2 Scope. The provisions of this code shall govern the repair, alteration, change of occupancy, addition, relocation of, construction and *rehabilitation* activities in *existing buildings* and *structures*.

Reason Statement: This change in language is more accurate and aligns with the IEBC.

Cost Impact: The code change proposal will not increase or decrease the cost This language change is a clarification, it should not impact cost.

EB102.2.2-24

VEBC: 102.2.2, 304.3, , 307 (New), 307.1 (New), 307.2 (New), 705.3.3

Proponents: Allison Cook, Arlington, Virginia, representing VBCOA VEBC Committee (acook1@arlingtonva.us); Ron Clements, Chesterfield, representing Building Inspection Department (clementsro@chesterfield.gov); Mark Graver, City of Waynesboro, representing VBCOA - Region III (gravermj@ci.waynesboro.va.us)

2021 Virginia Existing Building Code

Revise as follows:

102.2.2 Reconstruction, alteration, or repair in Group R-5 occupancies. Compliance with this section shall be an acceptable alternative to compliance with this code at the discretion of the owner or owner's agent. The VCC may be used for the reconstruction, alteration, or repair of Group R-5 *buildings or structures* subject to the following criteria:

1. Any reconstruction, *alteration* or repair shall not adversely affect the performance of the *building or structure*, or cause the *building or structure* to become unsafe or lower existing levels of health and safety.
2. Parts of the *building or structure* not being reconstructed, altered, or repaired shall not be required to comply with the requirements of the VCC applicable to newly constructed *buildings or structures*.
3. The installation of material or equipment, or both, that is neither required nor prohibited shall only be required to comply with the provisions of the VCC relating to the safe installation of such material or equipment.
4. Material or equipment, or both, may be replaced in the same location with material or equipment of a similar kind or capacity.
5. In accordance with § 36-99.2 of the Code of Virginia, installation or replacement of glass shall comply with Section R308 or Chapter 24 of the VCC.
6. Compliance with Section 307.2 of this code is required as applicable.

Exceptions:

- 1: ~~7.~~ 7. This section shall not be construed to permit noncompliance with any Compliance with applicable flood load or flood-resistant construction requirements of the VCC is required.
- 2: ~~8.~~ Reconstructed decks, balconies, porches, and similar *structures* located 30 inches (762 mm) or more above grade shall meet the current code provisions for structural loading capacity, connections, and structural attachment. This requirement excludes the configuration and height of handrails and guardrails.
- 3: ~~9.~~ Repair or replacement of smoke alarms shall be with devices listed in accordance with UL217 and that are no more than 10 years from the date of manufacture. Battery-only powered devices shall be powered by a 10-year sealed battery.

304.3 Replacement window emergency Emergency escape and rescue openings. ~~Emergency escape and rescue openings shall be in compliance with Section 307. Where windows are required by the VGC or *International Residential Code* to provide emergency escape and rescue openings in Groups R-2 and R-3 occupancies and one-family and two-family dwellings and townhouses regulated by the *International Residential Code*, replacement windows shall be exempt from the requirements of Sections 1031.2.1 and 1031.3 of the VGC or Sections R310.1.1, R310.2.1, R310.2.3, R310.4.1, R310.4.2, R310.4.2.1, R310.4.2.2 and R310.4.3 of the *International Residential Code*, provided the replacement window meets the following conditions:~~

- 1: ~~The replacement window is the manufacturer's largest standard size window that will fit within the existing frame or existing rough opening. The replacement window shall be permitted to be of the same operating style as the existing window or a style that provides for an equal or greater window opening area than the existing window.~~
- 2: ~~The replacement of the window is not part of a *change of occupancy*.~~

Delete without substitution:

304.3.1 Operational constraints. ~~Where bars, grilles, grates, or similar devices are installed over emergency escape and rescue openings as permitted by Section 1031.2.1 of the VCC, smoke alarms shall also be provided in accordance with Section 907.2.11 of the VCC. In R-5 occupancies, bars, grilles, grates, or similar devices are permitted to be installed over emergency escape and rescue openings in accordance with section R310.4.4 of the VRC.~~

Add new text as follows:

307

Emergency Escape and Rescue Openings

307.1 Replacement window emergency escape and rescue openings. Where an emergency escape and rescue opening is required to be provided in Groups R-2 and R-3 occupancies by the VCC and for one-family and two-family dwellings and townhouses regulated by the VRC, replacement windows shall be exempt from the requirements of Sections 1031.2.1 and 1031.3 of the VCC or Sections R319.1.1, R319.2.1, R319.2.3, R319.4.1, R319.4.2, R319.4.2.1, R319.4.2.2 and R319.4.3 of the VRC, provided the replacement window meets the following conditions:

1. The replacement window is the manufacturer's largest standard size window that will fit within the existing frame or existing rough opening. The replacement window shall be permitted to be of the same operating style as the existing window or a style that provides for an equal or greater window opening area than the existing window.
2. The replacement of the window is not part of a *change of occupancy*.

307.1.2 Operational constraints. Where bars, grilles, grates, or similar devices are installed over emergency escape and rescue openings as permitted by Section 1031.2.1 of the VCC, smoke alarms shall also be provided in accordance with Section 907.2.11 of the VCC. In R-5 occupancies, bars, grilles, grates, or similar devices are permitted to be installed over emergency escape and rescue openings in accordance with section R319.4.4 of the VRC.

307.2 Alterations, Additions, and Change of Occupancy. Where an alteration, addition, or change of occupancy creates a new room or space or changes the occupancy of a room or space such that an emergency escape and rescue opening is required to be provided in Groups R-2 and R-3 occupancies by the VCC and for one-family and two-family dwellings and townhouses regulated by the VRC, then a new emergency escape and rescue opening shall be provided in accordance with the Section 1031 of the VCC or Section 319 of the VRC.

Exception: An existing operable window with clear opening area not less than 4 square feet (0.38 m²) and minimum opening height and width of 22 inches (559 mm) and 20 inches (508 mm), respectively, shall be accepted as an emergency escape and rescue opening.

Revise as follows:

705.3.3 Emergency escape and rescue openings. Emergency escape and rescue openings shall be in compliance with Section 307. An existing operable window with clear opening area not less than 4 square feet (0.38 m²) and minimum opening height and width of 22 inches (559 mm) and 20 inches (508 mm), respectively, shall be accepted as an emergency escape and rescue opening.

Reason Statement: As currently written, the VEBC only requires EEROs to be provided when there is a change of occupancy to a higher hazard. The VEBC does not require alterations or additions that create conditions requiring an EERO in new construction (such as creating a new bedroom) to provide an EERO for the new room or space. Nor does it require a change of occupancy that is within the same or lower hazard to provide EEROs. So, an A, E, or M space could change to R-2 without requiring EEROs in any newly created apartments.

This change looks to move the requirements for EEROs into chapter 3 for easier understanding and application of the code, while also providing a means to ensure newly created bedrooms have a minimum level safety through appropriate means of egress. It also maintains the existing exception to allow a smaller sized EERO if there is an existing window that will meet those requirements.

The "new" sections 307.1 and 307.1.2 are both exact copies of the existing code sections for replacement EEROs (sections 304.3 and 304.3.1) and it has only been relocated.

Cost Impact: The code change proposal will increase the cost

While there will likely be a minor increase in cost to add EEROs to some buildings or will limit designs to use existing windows and spaces, the requirement ensures a minimal level of safety is maintained in existing buildings.

EB103.9-24

VEBC: 103.9

Proponents: Allison Cook, Arlington, Virginia, representing VBCOA VEBC Committee (acook1@arlingtonva.us); Ron Clements, Chesterfield, representing Building Inspection Department (clementsro@chesterfield.gov)

2021 Virginia Existing Building Code

Revise as follows:

103.9 Construction documents. Construction documents shall be submitted with the application for a permit. The work proposed to be performed on an *existing building or structure* shall be classified on the construction documents as repairs, *alterations, change of occupancy, addition, historic building, or moved building*. *Alterations* shall further be classified as Level 1 or Level 2. Any required elevation certificate shall be prepared by a Virginia certified land surveyor or Virginia registered ~~design professional civil engineer licensed in Virginia~~.

Exception: Construction documents or classification of the work does not need to be submitted when the building official determines the proposed work does not require such documents, classification or identification.

Reason Statement: This is a simple language change to more closely align the code with the language in DPOR and other regulatory requirements such as FEMA.

In addition, there is not a "civil engineer" licensed by DPOR, it is only engineer, and the term should reflect "Registered Design Professional" (RDP).

Cost Impact: The code change proposal will not increase or decrease the cost This clarification in language does not change the existing requirement for the professional to be licensed by DPOR, it is simply a cleaning up of the language.

Proponents: Eric Mays, representing Prince William County (emays@pwcgov.org)

2021 Virginia Existing Building Code

Revise as follows:

CHANGE OF OCCUPANCY. Either of the following shall be considered a *change of occupancy* where the current VCC requires a greater degree of structural strength, fire protection, means of egress, ~~ventilation or ventilation~~, sanitation ~~or electrical requirements in a special occupancy described in Section 708.1 of the VEBC~~ than is existing in the current *building or structure*:

1. Any change in the occupancy classification of a *building or structure*.
2. Any change in the purpose of, or a change in the level of activity within, a *building or structure*.

Note: The use and occupancy classification of a *building or structure*, shall be determined in accordance with Chapter 3 of the VCC.

Reason Statement:

The Existing Building Code, Chapter 7 Change of Occupancy, Section 708 Electrical and Lighting, acknowledges the scope of electrical life safety requirements for special occupancies:

“708.1 Special occupancies.

Where a *building* undergoes a *change of occupancy* to one of the following special occupancies as described in NEPA 70, the electrical wiring and equipment of the *building* that contains the proposed occupancy shall comply with the applicable requirements of NEPA 70:

1. Hazardous locations.
2. Commercial garages, repair, and storage.
3. Aircraft hangars.
4. Gasoline dispensing and service stations.
5. Bulk storage plants.
6. Spray application, dipping, and coating processes.
7. Health care facilities.
8. Places of assembly.
9. Theaters, audience areas of motion picture and television studios, and similar locations.
10. Motion picture and television studios and similar locations.
11. Motion picture projectors.
12. Agricultural *buildings*.”

However, the Change of Occupancy definition does not currently include when the VCC requires a greater degree of electrical scope. Omitting electrical scope from the Change of Occupancy definition prevents the application of 708.1 Special Occupancies, which can create a potential life safety threat. Two real world examples are:

- A general office space (Business Use) is converted to a doctor's office with multiple patient care rooms (Business Use). Based on a Code analysis, the proposed doctor's office is compliant with all current VCC requirements except for the electrical scope. However, electrical scope is not included in the Change of Occupancy definition. The result is the Code is allowing an office to be converted to patient care room without the critical life safety provisions for redundant grounding. An electrical micro-shock from 10 milliamps to 100 milliamps can cause ventricular fibrillation and may be fatal.
- A general warehouse space (Storage Use) is converted to a major repair garage (Storage Use). If the proposed scope of work for the alteration/repair permit application for the major repair garage does not raise to the level of the Change of Occupancy definition, the critical electrical scope and safety requirements can be omitted. Thereby allowing the creation of a hazardous unsafe condition.

Adding "electrical scope" to the Change of Occupancy definition will prevent the creation of unsafe electrical conditions that can result in injury and the loss of life.

Cost Impact: The code change proposal will increase the cost The Virginia Existing Building Code is intended to provide the minimum life safety requirements for occupants. Omitting the electrical scope and safety requirements from the Change of Occupancy definition fails to provide for minimum life safety and puts occupants at risk of injury or death.

Public Comments (PCH) for: EB202-24

Discussion by Allison Cook

Oct 2, 2025 16:11 UTC

While VBCOA VEBC Committee supports the concept, but the current language is too broad. We recommend "electrical in a special occupancy described in Section 708.1" at the end of the list (instead of middle).

Comment by Eric Mays

Oct 28, 2025 19:15 UTC

A floor amendment was made during the Work Group meeting to incorporate VBCOA VEBC Committee's recommendation.

Proposal # 1367

EB202(1)-24

VEBC: SECTION 202

Proponents: Allison Cook, Arlington, Virginia, representing VBCOA VEBC Committee (acook1@arlingtonva.us); Ron Clements, Chesterfield, representing Building Inspection Department (clementsro@chesterfield.gov)

2021 Virginia Existing Building Code

Revise as follows:

CHANGE OF OCCUPANCY. Either ~~Any~~ of the following shall be considered a *change of occupancy* where the current VCC requires a greater degree of structural strength, fire protection, means of egress, ventilation or sanitation than is existing in the current *building* or *structure*:

1. Any change in the occupancy classification of a *building* or *structure*
- 2 Any change in the purpose of, or a change in the level of activity within, a *building* or *structure*.
3. A *change of use*.

Note: The use and occupancy classification of a *building* or *structure*, shall be determined in accordance with Chapter 3 of the VCC.

Reason Statement: The addition of "change of use" is to apply the existing definition to one of the options for the change of occupancy. While this has been a long standing practice in Virginia, including it in the definition of change of occupancy should help minimize confusing and differing application of the VEBC within Virginia.

Cost Impact: The code change proposal will not increase or decrease the cost There is not a cost impact, this is existing practice / application of the code. This change only seeks to provide a clarification, not change existing practices.

EB307-24

VEBC: 307 (New), 308 (New), 309 (New)

Proponents: Allison Cook, Arlington. Virginia, representing VBCOA VEBC Committee (acook1@arlingtonva.us); Ron Clements, Chesterfield, representing Building Inspection Department (clementsro@chesterfield.gov)

2021 Virginia Existing Building Code

Add new text as follows:

307 Electrical. (RESERVED)

308 Mechanical. (RESERVED)

309 Plumbing. (RESERVED)

Reason Statement: There are multiple existing code sections as well as some code change proposals that are more appropriate in Chapter 3 where it applies to all methods. These place holders are to help this code cycle as well as future provisions.

Cost Impact: The code change proposal will not increase or decrease the cost This is a proposal for formatting the code, it does not increase nor decrease costs.

EB401.1-24

VEBC: 401.1

Proponents: Allison Cook, Arlington, Virginia, representing VBCOA VEBC Committee (acook1@arlingtonva.us); Ron Clements, Chesterfield, representing Building Inspection Department (clementsro@chesterfield.gov)

2021 Virginia Existing Building Code

Revise as follows:

401.1 Scope. The applicable provisions of this chapter shall apply to ~~all construction and rehabilitation~~ *repairs, alterations, additions, change of occupancy, and rehabilitation to existing buildings*, including those identified as *historic buildings*.

Reason Statement: This change aligns with other Virginia code change proposals to use the same language throughout the scoping in the VEBC. Similar language is in the 2024 IEBC.

Cost Impact: The code change proposal will not increase or decrease the cost This is editorial in nature so it does not impact cost.

EB403.1-24

VEBC: 403.1, 404.1

Proponents: Allison Cook, Arlington, Virginia, representing VBCOA VEBC Committee (acook1@arlingtonva.us); Ron Clements, Chesterfield, representing Building Inspection Department (clementsro@chesterfield.gov)

2021 Virginia Existing Building Code

Revise as follows:

403.1 Additions. Accessibility provisions for new construction shall apply to *additions*. An *addition* that affects the accessibility to, or contains an area of, a *primary function* shall comply with the requirements in Section 404.3, as applicable. ~~An addition that decreases or has the effect of decreasing accessibility of a building, facility or element thereof, below the requirements for new construction at the time of the addition is prohibited. Accessibility requirements for sites, buildings, structures, facilities, elements and spaces are not required to exceed that required by the VCC for new construction at the time of the addition.~~

404.1 General. An *alteration* of an existing facility shall not impose a requirement for greater accessibility than that which would be required for new construction. ~~Alterations shall not reduce or have the effect of reducing accessibility of a facility or portion of a facility. An alteration that decreases or has the effect of decreasing accessibility of a building, facility or element thereof, below the requirements for new construction at the time of the alteration is prohibited. Accessibility requirements for sites, buildings, structures, facilities, elements and spaces are not required to exceed that required by the VCC for new construction at the time of the alteration.~~

Reason Statement: This closely matches language in the 2024 IEBC. The intent is to recognize that an existing building may exceed the accessibility requirements of the VCC and should be allowed to remove or alter accessible elements in that circumstance.

For example, an existing building may undergo a change of occupancy and alteration such that it only requires one means of egress, but the existing building has two ramps (two accessible means of egress). The code should allow one of the two accessible means of egress to be removed since it would not be required if built new today. However, as written, no reduction in accessibility is permitted.

Cost Impact: The code change proposal will not increase or decrease the cost This code change proposal isn't likely to decrease or increase costs, since removing existing accessible elements that exceed the code minimum is a design decision. It is intended to ensure that alterations and additions to existing buildings are not held to a higher requirement than a new building built today.

EB506.2-24

VEBC: 506.2

Proponents: Allison Cook, Arlington, Virginia, representing VBCOA VEBC Committee (acook1@arlingtonva.us); Ron Clements, Chesterfield, representing Building Inspection Department (clementsro@chesterfield.gov)

2021 Virginia Existing Building Code

Revise as follows:

506.2 Maximum flow and water closet replacement consumption. The maximum water ~~flow and~~ consumption ~~flow rates and~~ quantities for all replaced ~~water closets plumbing fixtures~~ shall ~~comply with the Virginia Plumbing Code or Virginia Residential Code as~~ applicable. ~~be 1.6 gallons (6 L) per flushing cycle.~~

Exception: ~~Blowout-design water closets 3.5 gallons (13 L) per flushing cycle.~~

Reason Statement: This proposal was part of the ICC 2027 code change process and will appear in the 2027 IEBC.

This only applies to replacement fixture. The VPC and VRC provides consumption flow rates and quantities for a number of plumbing fixtures. This requirement should cover all fixtures with consumption and flow rates requirements, not just water closets.

In addition, it isn't possible to obtain new fixtures today that do not meet these flow consumptions.

Cost Impact: The code change proposal will not increase or decrease the cost This clarifies the pointer to the VPC and VRC for all plumbing fixtures instead of just water closets.

EB702.2-24

VEBC: 702.1, 702.2 (New), 702.3

Proponents: Allison Cook, Arlington, Virginia, representing Arlington, Virginia (acook1@arlingtonva.us); Ron Clements, Chesterfield, representing Building Inspection Department (clementsro@chesterfield.gov)

2021 Virginia Existing Building Code

702.1 Compliance with the building code. Where a *building* undergoes a *change of occupancy* to one of the special use or occupancy categories described in Chapter 4 of the VCC, the *building* shall comply with all of the requirements of Chapter 4 of the VCC applicable to the special use or occupancy.

Add new text as follows:

702.2 Alterations or additions. Alterations or additions to buildings that convert the building to types, or create building features, within the scope of Chapter 4 of the VCC shall conform to the applicable requirements for the work as classified in this code and as modified by this chapter.

Revise as follows:

702.2 702.3 Incidental uses. Where a portion of a *building* undergoes a *change of occupancy* to one of the incidental uses listed in Table 509 of the VCC, the incidental use shall comply with the applicable requirements of Section 509 of the VCC.

Reason Statement: Existing section 702.1 is intended to apply to occupancies in VCC Chapter 4 that are occupancies, not building types or building features such as high rise or malls that require some alteration or addition to create the building type or feature. The addition of new Section 702.3 is to address circumstances where there is an addition or alteration that creates a building type or feature addressed in Ch. 4 of the VCC and direct the code user to the applicable provisions of the VEBC for the class of work, which will then get to you Ch. 4 of the VCC as applicable.

This has not been the interpretation in all Virginia jurisdictions. So, the intent is to provide clarification and consistency.

One example of this would be an existing auditorium that does not have a stage, adding the stage would be a building feature. Another example is a vertical addition (adding floors or an occupied roof to an existing building) which creates a high-rise building.

Cost Impact: The code change proposal will not increase or decrease the cost This is being interpreted differently across Northern Virginia, with many already requiring code modification related to compliance with VCC Chapter 4 for high-rise buildings. This code change may cause some jurisdictions to be more restrictive and others to be less restrictive.

EB706.2-24

VEBC: TABLE 706.2

Proponents: Allison Cook, Arlington. Virginia, representing VBCOA VEBC Committee (acook1@arlingtonva.us); Ron Clements, Chesterfield, representing Building Inspection Department (clementsro@chesterfield.gov)

2021 Virginia Existing Building Code

Revise as follows:

TABLE 706.2 HEIGHTS AND AREAS HAZARD CATEGORIES

RELATIVE HAZARD	OCCUPANCY CLASSIFICATIONS
1 (Highest Hazard)	H
2	A-1, A-2, A-3, A-4, I, R-1, R-2 ^a , R-4
3	E, F-1, S-1, M
4 (Lowest Hazard)	B, F-2, S-2, A-5, R-3, R-5, U

a. A building or portion of a building undergoing a change of occupancy classification to a Group R-2 occupancy shall be classified as category 3 where the building is protected throughout with an automatic sprinkler system in accordance Section 903.3.1.1 of the International Building Code.

Reason Statement: This proposal was part of the ICC 2027 code change process and will appear in the 2027 IEBC.

For a Group E, F-1, M, or S-1 to Group R-2 change of occupancy classification, this proposed code change will reduce requirements to evaluate the existing building height, building area, and construction type where either: (1) the existing building is protected throughout by an NFPA 13-compliant automatic sprinkler system, or (2) a full-building NFPA 13 automatic sprinkler system is installed as part of the project.

Because a full-building NFPA 13 automatic sprinkler system provides significant life safety benefits to residential occupants, it is appropriate to allow greater non-conformity with new construction limits on building height and building area compared to the requirements for the same change of occupancy classification in a building with only a partial sprinkler system.

This change does **not** apply to NFPA 13R systems.

Cost Impact: The code change proposal will decrease the cost This would make it more affordable for adaptive re-use from E, F-1, S-1, and M uses to be converted to R-2 use.

EB801.2-24

VEBC: 801.2

Proponents: Allison Cook, Arlington, Virginia, representing Arlington, Virginia (acook1@arlingtonva.us); Ron Clements, Chesterfield, representing Building Inspection Department (clementsro@chesterfield.gov)

2021 Virginia Existing Building Code

Revise as follows:

801.2 Creation or extension of nonconformity. An *addition* shall not create or extend any nonconformity in the *existing building* to which the *addition* is being made with regard to accessibility, structural strength, fire safety, means of egress, or the capacity of mechanical, plumbing, or electrical systems. Alterations to the *existing building* or *structure* shall be made so that the *existing building* or *structure*, together with the addition, are no less conforming to the provisions of the VCC than the existing building or *structure* was prior to the addition.

Exceptions:

- 1.Existing buildings that are less than four stories above or less than four stories below grade plane are required to comply with Section 3002.4 of the VCC when the addition causes the building to be more than four stories above or more than four stories below grade plane.
- 2.Existing buildings that are four or more stories above, or four or more stories below grade plane and do not have elevators sized to accommodate an ambulance stretcher, compliance with Section 3002.4 of the VCC is required only for the addition for fire department emergency access to all floors of the addition where two or more stories are added.

Reason Statement: The Existing Building Code was written with horizontal additions in mind, it does not account for vertical additions. As a result of adaptive reuse, Northern Virginia is seeing more and more additions to add floors and / or an occupied roof to existing buildings.

This code change is to provide consistency in the interpretation of "create" or "extend" a nonconformity when it comes to vertical additions and when an ambulance stretcher elevator is required. It also helps to ensure that additions will not be cost prohibitive or technically infeasible while maintaining minimum life safety standards.

Cost Impact: The code change proposal will decrease the cost This code change proposal allows existing buildings that already exceed four or more stories above or below grade to not have to "retrofit" an ambulance stretcher elevator where the existing shaft cannot accommodate it. That is a cost savings.

EB805.2.1.1-24

VEBC: 805.2.1.1

Proponents: Allison Cook, Arlington, Virginia, representing VBCOA VEBC Committee (acook1@arlingtonva.us)

2021 Virginia Existing Building Code

Revise as follows:

805.2.1.1 Building envelope. New *building* envelope assemblies that are part of the addition shall comply with Sections R402.1, R402.2, R402.3.1 through R402.3.5, and R402.4 of the VECC.

~~Exception:~~ Exceptions:

1. The building envelope of the addition shall be permitted to comply through a Total UA analysis, as determined in Section R402.1.5 of the VECC, where the *existing building* and the addition, and any alterations that are part of the project, is less than or equal to the Total UA generated for the *existing building*.

2. Building envelope of the addition tightness shall be considered acceptable when the items listed in Table N1102.5.1.1 (R402.5.1.1) of the VRC, applicable to the method of construction, are field verified with visual inspection(s). Where required by the building official, an approved party, independent from the installer, shall inspect the air barrier.

Reason Statement: Existing buildings are unlikely to be able to pass a blower door test due to the nature of the changing standards increasing building envelope tightness. This helps housing affordability because it does not require potentially costly retrofit requirements to the existing building to meet the blower door test for an addition. The language for visual inspections come from the 2015 VRC with sections updated to the 2024 IRC.

Cost Impact: The code change proposal will decrease the cost. This code change allows for a visual inspection of the addition to ensure compliance with the energy code requirements while not requiring costly retrofits to the existing building that would be needed to pass a blower door test.

EB901.1-24

VEBC: 901.1

Proponents: Allison Cook, Arlington, Virginia, representing VBCOA VEBC Committee (acook1@arlingtonva.us); Ron Clements, Chesterfield, representing Building Inspection Department (clementsro@chesterfield.gov)

2021 Virginia Existing Building Code

Revise as follows:

901.1 Scope. ~~It is the intent of this chapter to provide means for the preservation~~The repair, alteration, addition, change of occupancy, rehabilitation and relocation of historic buildings shall comply with this chapter. The provisions of this code relating to construction involving *historic buildings* shall not be mandatory unless such construction constitutes a life safety hazard. Accessibility shall be provided in accordance with Section 405.

Reason Statement: This proposal was part of the ICC 2027 code change process and will appear in the 2027 IEBC, with the addition of the word "rehabilitation" to align with the proposed change to scoping language for the VEBC generally.

Cost Impact: The code change proposal will not increase or decrease the cost This is editorial in nature

Public Comments (PCH) for: EB901.1-24

Discussion by Mark Graver

Oct 16, 2025 15:55 UTC

It seems to me that an intent based on preservation is integral to the chapter, as it sets the tone. What reasons were discussed for removing the preservation language from the scope in the 2027 IEBC? Will the preservation language be placed elsewhere in the general provisions for historic buildings?

Proposal # 1455

PM104.4-24

VPMC: 104.4

Proponents: DHCD Staff, representing DHCD (sbco@dhcd.virginia.gov)

2021 Virginia Property Maintenance Code

Revise as follows:

104.4 Local enforcing agency. In jurisdictions enforcing this code, the local governing body shall designate the agency within the local government responsible for such enforcement and appoint a *code official*. The local governing body may also utilize technical assistants to assist the *code official* in the enforcement of this code. A permanently appointed *code official* shall not be removed from office except for cause after having been afforded a full opportunity to be heard on specific and relevant charges by and before the appointing authority. DHCD shall be notified by the appointing authority within 30 days of the appointment or release of a permanent or acting *code official*. ~~and DHCD shall be notified by the *code official* or their designee within 60 days after retaining or terminating of the separation of a~~ technical assistant.

Note: *Code officials* and technical assistants are subject to sanctions in accordance with the VCS.

Reason Statement: The requirement for localities/Property Maintenance Officials to notify DHCD when they hire a new technical assistant is no longer necessary, as actions required for new technical assistants (creating a DHCD registration system profile and requesting a Learning Center account) can and should be completed by the new employee. There is no special action required on the part of DHCD.

It remains important for localities to notify DHCD when a technical assistant leaves a locality so that the DHCD profile can be updated accordingly. The word "termination" is changed to "separation" to be inclusive or more inclusive of any situation where the employee leaves the locality, including resignation, termination, or retirement. "or their designee" is added to recognize that this notification does not need to come from the Property Maintenance Official directly.

Cost Impact: The code change proposal will not increase or decrease the cost The proposal will not increase or decrease cost.

PM105.2-24

VPMC: 105.2

Proponents: Matthew Mertz, Fairfax County Department of Code Compliance, representing Fairfax County, Property Maintenance Official, Department of Code Compliance (matthew.mertz@fairfaxcounty.gov)

2021 Virginia Property Maintenance Code

Revise as follows:

105.2 Notices, reports and orders. Upon findings by the *code official* that violations of this code exist, the *code official* shall issue a correction notice or notice of violation to the *owner, tenant* or the person responsible for the maintenance of the *structure*; or, a notice of *unsafe structure* in accordance with Section 106 when a *building* or *structure* is determined by the *code official* to be an *unsafe structure*. Work done to correct violations of this code subject to the permit, inspection and approval provisions of the VCC shall not be construed as authorization to extend the time limits established for compliance with this ~~code~~. ~~The notice shall be issued by either delivering a copy by mail to the last known address of the responsible party, by delivering the notice in person, by leaving it in the possession of any person in charge of the premises, by electronic service, or by posting the notice in a conspicuous place if the person in charge of the premises cannot be found.~~ When the *owner* is not the responsible party to whom the notice of violation or correction notice is issued, a copy of the notice shall also be delivered to the *owner*.

Reason Statement: Currently, the VPMC doesn't provide instruction on notice of violation service methods. This proposal would add text to the 2024 VPMC to make it read very similar to the applicable text of VCC Section 115.2 [when factoring in 2024 code cycle proposal # B115.2(2)-24 that already obtained a consensus approval from the first combined workgroup], as far as text that speaks to service of a notice. It's noted that this proposal (# PM105.2-24) originally proposed aligning text most closely with the applicable text of the SFPC regarding service of notices. However, after consultation with a concerned stakeholder, it was agreed that since both the VCC and VPMC are part of the USBC, whereas the SFPC is not, it makes sense to more closely align the applicable text of the VPMC to the VCC. That said, this revised proposed text for Section 105.2 of the proposed 2024 VPMC is still similar in substance to the applicable text of the 2021 SFPC, an excerpt of which is attached. There were various stakeholders who spoke to this proposal at the first combined workgroup meeting. I only recall one stakeholder specifically stating that they were opposed (non-consensus). With these revisions, the concerned stakeholder is no longer opposed. An additional stakeholder, who didn't necessarily voice opposition to the original proposal but spoke to it, was also consulted and indicated that he has no issue with this revised version.

Cost Impact: The code change proposal will not increase or decrease the cost There is no anticipated impact on costs.

Attached Files

- 2021 SFPC exercpt Chapter 1 including Section 111.2.pdf
<https://va.cdpaccess.com/proposal/1310/1872/files/download/924/>

10. All equipment, materials, processes, or operations that are in violation of the provisions and intent of this code.

110.2 Maintenance. The owner shall be responsible for the safe and proper maintenance of any structure, premises, or lot. In all structures, the fire protection equipment, means of egress, alarms, devices, and safeguards shall be maintained in a safe and proper operating condition as required by the SFPC and applicable referenced standards.

110.3 Occupant responsibility. If a building occupant creates conditions in violation of this code by virtue of storage, handling, and use of substances, materials, devices, and appliances, such occupant shall be held responsible for the abatement of such hazardous conditions.

110.4 Unsafe structures. All structures that are or shall hereafter become unsafe or deficient in adequate exit facilities, that constitute a fire hazard, are otherwise dangerous to human life or the public welfare, or by reason of illegal or improper use, occupancy, or maintenance or that have sustained structural damage by reason of fire, explosion, or natural disaster shall be deemed unsafe structures. A vacant structure or portion of a structure unguarded or open at door or window shall be deemed a fire hazard and unsafe within the meaning of this code. Unsafe structures in violation of the applicable building code shall be reported to the building official or building maintenance official who shall take appropriate action under the provisions of the USBC to secure abatement. Subsequently, the fire official may request the legal counsel of the local governing body to institute the appropriate proceedings for an injunction against the continued use and occupancy of the structure until such time as conditions have been remedied.

110.5 Evacuation. When, in the fire official's opinion, there is actual and potential danger to the occupants or those in the proximity of any structure or premises because of unsafe structural conditions; inadequacy of any means of egress, the presence of explosives, explosive fumes, or vapors; or the presence of toxic fumes, gases, or materials, the fire official may order the immediate evacuation of the structure or premises. All notified occupants shall immediately leave the structure or premises, and no person shall enter until authorized by the fire official.

110.6 Unlawful continuance. Any person who refuses to leave, interferes with the evacuation of other occupants, or continues any operation after having been given an evacuation order shall be in violation of this code.

Exception: Any person performing work directed by the fire official to be performed to remove an alleged violation or unsafe condition.

SECTION 111 VIOLATIONS

111.1 Notice. When the fire official discovers an alleged violation of a provision of the SFPC or other codes or ordinances under the fire official's jurisdiction, the fire official shall prepare a written notice citing the section allegedly violated, describing the condition deemed unsafe, and specifying time limitations for the required abatements to be made to render the structure or premises safe and secure.

111.1.1 Right of appeal. Notices of violation issued under Section 111.1 shall indicate the right of appeal by referencing the appeals section of this code.

Exceptions:

1. Summons issued in lieu of a notice of violation in accordance with Section 111.5 of this code.
2. Documents reflecting uncorrected violations in subsequent inspections to verify compliance.

111.2 Service. The written notice of violation of this code shall be served upon the owner, a duly authorized agent, or the occupant or other person responsible for the conditions under violation. Such notice shall be served either by delivering a copy of same to such persons by mail to the last known post office address; by delivering in person; by delivering it to and leaving it in the possession of any person in charge of the premises; in the case such person is not found upon the premises, by affixing a copy thereof in a conspicuous place at the entrance door or avenue of access; or by transmitting to a valid electronic mailbox. Such procedure shall be deemed the equivalent of personal notice. When the owner is not the responsible party to whom the notice of violation or correction notice is issued, a copy of the notice shall also be delivered to the owner or owner's agent.

10. All equipment, materials, processes, or operations that are in violation of the provisions and intent of this code.

110.2 Maintenance. The owner shall be responsible for the safe and proper maintenance of any structure, premises, or lot. In all structures, the fire protection equipment, means of egress, alarms, devices, and safeguards shall be maintained in a safe and proper operating condition as required by the SFPC and applicable referenced standards.

110.3 Occupant responsibility. If a building occupant creates conditions in violation of this code by virtue of storage, handling, and use of substances, materials, devices, and appliances, such occupant shall be held responsible for the abatement of such hazardous conditions.

110.4 Unsafe structures. All structures that are or shall hereafter become unsafe or deficient in adequate exit facilities, that constitute a fire hazard, are otherwise dangerous to human life or the public welfare, or by reason of illegal or improper use, occupancy, or maintenance or that have sustained structural damage by reason of fire, explosion, or natural disaster shall be deemed unsafe structures. A vacant structure or portion of a structure unguarded or open at door or window shall be deemed a fire hazard and unsafe within the meaning of this code. Unsafe structures in violation of the applicable building code shall be reported to the building official or building maintenance official who shall take appropriate action under the provisions of the USBC to secure abatement. Subsequently, the fire official may request the legal counsel of the local governing body to institute the appropriate proceedings for an injunction against the continued use and occupancy of the structure until such time as conditions have been remedied.

110.5 Evacuation. When, in the fire official's opinion, there is actual and potential danger to the occupants or those in the proximity of any structure or premises because of unsafe structural conditions; inadequacy of any means of egress, the presence of explosives, explosive fumes, or vapors; or the presence of toxic fumes, gases, or materials, the fire official may order the immediate evacuation of the structure or premises. All notified occupants shall immediately leave the structure or premises, and no person shall enter until authorized by the fire official.

110.6 Unlawful continuance. Any person who refuses to leave, interferes with the evacuation of other occupants, or continues any operation after having been given an evacuation order shall be in violation of this code.

Exception: Any person performing work directed by the fire official to be performed to remove an alleged violation or unsafe condition.

SECTION 111 VIOLATIONS

111.1 Notice. When the fire official discovers an alleged violation of a provision of the SFPC or other codes or ordinances under the fire official's jurisdiction, the fire official shall prepare a written notice citing the section allegedly violated, describing the condition deemed unsafe, and specifying time limitations for the required abatements to be made to render the structure or premises safe and secure.

111.1.1 Right of appeal. Notices of violation issued under Section 111.1 shall indicate the right of appeal by referencing the appeals section of this code.

Exceptions:

1. Summons issued in lieu of a notice of violation in accordance with Section 111.5 of this code.
2. Documents reflecting uncorrected violations in subsequent inspections to verify compliance.

111.2 Service. The written notice of violation of this code shall be served upon the owner, a duly authorized agent, or the occupant or other person responsible for the conditions under violation. Such notice shall be served either by delivering a copy of same to such persons by mail to the last known post office address; by delivering in person; by delivering it to and leaving it in the possession of any person in charge of the premises; in the case such person is not found upon the premises, by affixing a copy thereof in a conspicuous place at the entrance door or avenue of access; or by transmitting to a valid electronic mailbox. Such procedure shall be deemed the equivalent of personal notice. When the owner is not the responsible party to whom the notice of violation or correction notice is issued, a copy of the notice shall also be delivered to the owner or owner's agent.

PM106.8-24

VPMC: 106.8

Proponents: Michele Throckmorton, City of Chesapeake, representing City of Chesapeake, Virginia
(mdthrockmorton@cityofchesapeake.net)

2021 Virginia Property Maintenance Code

Revise as follows:

106.8 Emergency repairs and demolition. To the extent permitted by the locality, the *code official* may authorize emergency repairs or demolition to unsafe *structures* when it is determined that there is an imminent danger of any portion of the *unsafe structure* collapsing or falling and when life is endangered. Emergency repairs or demolition may also be authorized where there is a code violation resulting in the immediate serious and imminent threat to the life and safety of the occupants. The *code official* shall be permitted to authorize the necessary work to make the *structure* temporarily safe whether or not legal action to compel compliance has been instituted. In addition, whenever an *owner* of an *unsafe structure* fails to comply with a notice to demolish under non-emergency conditions issued under Section 106.3 in the time period stipulated, the *code official* shall be permitted to cause the structure to be demolished. In accordance with §§ 15.2-906 and 15.2-1115 of the Code of Virginia, the legal counsel of the locality may be requested to institute appropriate action against the property *owner* to recover the costs associated with any such emergency repairs, emergency demolition or non-emergency demolition and every such charge that remains unpaid shall constitute a lien against the property on which the emergency repairs or demolition were made and shall be enforceable in the same manner as provided in Articles 3 (§ 58.1-3940 et seq.) and 4 (§ 58.1-3965 et seq.) of Chapter 39 of Title 58.1 of the Code of Virginia.

Note: *Code officials* and local governing bodies should be aware that other statutes and court decisions may impact on matters relating to demolition, in particular whether newspaper publication is required if the *owner* cannot be located and whether the demolition order must be delayed until the *owner* has been given the opportunity for a hearing. In addition, *historic building* demolition may be prevented by authority granted to local historic review boards in accordance with § 15.2-2306 of the Code of Virginia unless determined necessary by the *code official*.

Reason Statement: This amendment clarifies the language in the code regarding emergency demolitions and emergency repairs. The previous code did not clearly indicate that emergency demolition is an available remedy in situations where a catastrophic weather event, geological incident, or man-made disaster causes damage so severe that the structure becomes unsafe and cannot be made secure through emergency repairs alone.

Cost Impact: The code change proposal will not increase or decrease the cost Clarification to the language should not increase or decrease the cost.

PM107.5-24

VPMC: 107.5

Proponents: Eric Mays, representing Prince William County (emays@pwcgov.org)

2021 Virginia Property Maintenance Code

Revise as follows:

107.5 Right of appeal; filing of appeal application. Any person aggrieved by the local enforcing agency's application of this code or the refusal to grant a modification to the provisions of this code may appeal to the LBBCA. The applicant shall submit a written request for appeal to the LBBCA within 14 calendar days of the receipt of the decision being appealed. When the local governing body has established a fee for the filing of an appeal, the building department shall establish a written policy for the process and methods of payments. The written request for appeal is not considered to be complete and filed until the fee is paid. The application shall contain the name and address of the *owner* of the *building* or *structure* and, in addition, the name and address of the person appealing, when the applicant is not the owner. A copy of the *code official's* decision shall be submitted along with the application for appeal and maintained as part of the record. The application shall be marked by the LBBCA to indicate the date received. Failure to submit an application for appeal within the time limit established by this section shall constitute acceptance of a *code official's* decision.

Reason Statement: The Code Change Proposal is to clarify the requirements related to the timely filing of an appeal. The Virginia Construction Code requires appeals to be submitted within 30 days of the code official's decision and to be heard by the local appeals board within 30 days. The State Technical Review Board recently held a preliminary hearing to determine if an appeal was submitted in a timely manner. The appeal application fee was not paid until approximately 3 months after the filing of the written request to appeal; thereby delaying the appeal process. The current Code does not address any linkage between the appeal application and the payment of an appeal application fee. For consistency, the Code Change Proposal address the VCC, VRC, VMC and SFPC.

DHCD Staff Note: This code change proposal was initially submitted as part of proposal B119.5(1)-24. DHCD Staff split proposal B119.5(1)-24 into three separate proposals:

B119.5(1)-24: VCC portion of original proposal

FP112.1-24: SFPC portion of original proposal

PM107.5-24: VPMC portion of original proposal (this proposal)

Cost Impact: The code change proposal will not increase or decrease the cost The code change provides an administrative clarification and does not impact cost.

PM202-24

VPMC: SECTION 202

Proponents: Ron Clements, Chesterfield, representing Building Inspection Department (clementsro@chesterfield.gov)

2021 Virginia Property Maintenance Code

Revise as follows:

UNSAFE STRUCTURE. An existing structure determined by the code official to be dangerous to the health, safety and welfare of the occupants of the structure or the public because of, but not limited to, any of the following conditions:

1. The structure contains *unsafe equipment*;
2. The structure is so damaged, decayed, dilapidated, structurally unsafe or of such faulty construction or unstable foundation that partial or complete collapse is likely;
3. The structure is vacant and unsecured or open;
4. The degree to which the structure is in disrepair or lacks maintenance, ventilation, illumination, sanitary or heating facilities or other essential equipment;
5. The required plumbing and sanitary facilities are inoperable.

Reason Statement: The definitions of unsafe and unfit for human occupancy were combined into the singled definition of unsafe structure during the 2021 VA code cycle. When the definitions were consolidated “vacant” was accidentally left out of the consolidated definition in item #3. This corrects that error.

Cost Impact: The code change proposal will not increase or decrease the cost This is correcting an editorial oversight from the prior code cycle.

PM302.5-24

VPMC: 302.5

Proponents: Matthew Mertz, Fairfax County Department of Code Compliance, representing Fairfax County, Property Maintenance Official, Department of Code Compliance (matthew.mertz@fairfaxcounty.gov)

2021 Virginia Property Maintenance Code

Revise as follows:

302.5 Rodent harborage. All ~~structures~~ *Structures* shall be kept free from rodent harborage and *infestation*. ~~Structures in which rodents are found~~ *Rodents found in structures* shall be promptly exterminated by *approved* processes that will not be injurious to human health. After extermination, proper precautions shall be taken to prevent reinfestation.

Reason Statement: Continue deleting unnecessary instance of the word "All" as has been done in previous code cycles. Re-word to clarify that it's the rodents, not the structures, that must be exterminated.

Cost Impact: The code change proposal will not increase or decrease the cost There is no anticipated impact on costs.

PM303.2-24

VPMC: 303.2, 303.2.1 (New), 303.2.2 (New)

Proponents: Ron Clements, Chesterfield, representing Building Inspection Department (clementsro@chesterfield.gov)

2021 Virginia Property Maintenance Code

Revise as follows:

303.2 Enclosures. Swimming pool, hot tub, and spa ~~barriers-enclosures~~ shall be *maintained* in accordance with the *applicable building code provisions of Sections 303.2.1 and 303.2.2* ~~or ordinance under which such barriers were constructed.~~

Add new text as follows:

303.2.1 Barriers. Swimming pool, hot tub and spa barriers shall be maintained in accordance with the applicable building code or ordinance under which such barriers were constructed.

303.2.2 Safety covers. Swimming pool power safety covers, and spa or hot tub lockable safety covers shall be maintained in accordance with the applicable building code under which such safety covers were installed.

Reason Statement: This section of the VPMC was revised for Virginia prior to the addition of safety covers to the ISPSC as an acceptable means of providing enclosure for pools, spas and hot tubs. Safety cover, power safety cover, and barrier are each specifically defined in the ISPSC so safety covers are not interchangeable with barriers from a definition and code application perspective. This proposal adds safety covers to the requirements to maintain the elements of the pool enclosure.

Cost Impact: The code change proposal will increase the cost

Per Google AI- The cost of maintaining a swimming pool safety cover varies, but you can expect to spend between \$150 to \$200 annually for professional maintenance. Minor repairs can range from \$100 to \$1000.

PM309.1-24

VPMC: 309.1

Proponents: Matthew Mertz, Fairfax County Department of Code Compliance, representing representing Fairfax County, Property Maintenance Official, Department of Code Compliance (matthew.mertz@fairfaxcounty.gov)

2021 Virginia Property Maintenance Code

Revise as follows:

309.1 Infestation. ~~All structures~~ Structures shall be kept free from insect and rodent *infestation*. ~~Structures in which insects or rodents are found~~ Insect or rodent infestations found in structures shall be promptly exterminated by *approved* processes that will not be injurious to human health. After extermination, proper precautions shall be taken to prevent reinfestation.

Reason Statement: Continue deleting unnecessary instances of the word "All" as has been done in previous code cycles. Re-word to clarify that it is the infestations, not the structures, that must be exterminated.

Cost Impact: The code change proposal will not increase or decrease the cost There is no anticipated impact on costs.

PM602.2(2)-24

VPMC: 602.2, 602.3, 602.4; VCC: 104.1, 2801.1.1, 2801.1.2

Proponents: Gregg Fields, representing the City of Alexandria (Gregg.Fields@alexandriava.gov), Earl Weaver, representing VBCOA (Earl.Weaver@rva.gov), Delegate Elizabeth Bennett-Parker, House District 5 (DelEBennett-Parker@house.virginia.gov)

2021 Virginia Property Maintenance Code

Revise as follows:

602.2 Heat supply. Every *owner* and *operator* of a Group R-2 apartment *building* or other residential *building* who rents, leases, or lets one or more *dwelling unit*, rooming unit, dormitory, or guestroom on terms, either expressed or implied, to furnish heat to the *occupants* thereof shall supply heat during the period from October 15 to ~~May 1~~ April 15 to maintain a temperature of not less than 68°F (20°C) in all habitable rooms, bathrooms, and toilet rooms. The *code official* may also consider modifications as provided in Section 104.5.2 when requested for unusual circumstances or may issue notice approving *building owners* to convert shared heating and cooling piping HVAC systems ~~14 calendar days~~ before or after the established dates when extended periods of unusual temperatures merit modifying these dates.

Exception: When the outdoor temperature is below the winter outdoor design temperature for the locality, maintenance of the minimum room temperature shall not be required provided that the heating system is operating at its full design capacity. The winter outdoor design temperature for the locality shall be as indicated in Appendix D of the IPC: the applicable building code.

602.3 Occupiable work spaces. Indoor occupiable work spaces shall be supplied with heat during the period from October ~~1~~ 15 to ~~May~~ April 15 to maintain a minimum temperature of 65°F (18°C) during the period the spaces are occupied.

Exceptions:

1. Processing, storage, and operation areas that require cooling or special temperature conditions.
2. Areas in which persons are primarily engaged in vigorous physical activities.

602.4 Cooling supply. Every *owner* and *operator* of a Group R-2 apartment *building* who rents, leases, or lets one or more *dwelling units*, rooming units, or guestrooms on terms, either expressed or implied, to furnish cooling to the *occupants* thereof shall supply cooling during the period from May ~~15~~ 1 to October 1 to maintain a temperature of not more than 77°F (25°F) (25°C) in all habitable rooms. The *code official* may also consider modifications as provided in Section 104.5.2 when requested for unusual circumstances or may issue notice approving *building owners* to convert shared heating and cooling piping HVAC systems ~~14 calendar days~~ before or after the established dates when extended periods of unusual temperatures merit modifying these dates.

Exceptions: When the outdoor temperature is higher than the summer design temperature for the locality, maintenance of the room temperature shall not be required provided that the cooling system is operating at its full design capacity. The summer outdoor design temperature for the locality shall be as indicated in the ~~IECC~~ applicable building code.

2021 Virginia Construction Code

Revise as follows:

104.1 Scope of enforcement. This section establishes the requirements for enforcement of the USBC in accordance with § 36-105 of the Code of Virginia. Enforcement of the provisions of the USBC for *construction* and rehabilitation shall be the responsibility of the *local building department*. Whenever a county or municipality does not have such a building department, the *local governing body* shall enter into an agreement with the *local governing body* of another county or municipality or with some other agency, or a state agency approved by DHCD for such enforcement. For the purposes of this section, towns with a population of less than 3,500 may elect to administer and enforce the USBC; however, where the town does not elect to administer and enforce the code, the county in which the town is situated shall administer and enforce the code for the town. In the event such town is situated in two or more counties, those counties shall administer and enforce the USBC for that portion of the town situated within their respective boundaries.

However, upon a finding by the *local building department*, following a complaint by a tenant of a residential dwelling unit that is the subject of such complaint, that there may be a violation of the unsafe *structures* provisions of Part III of the *Virginia Uniform Statewide Building Code*, also known as the “ *Virginia Property Maintenance Code* ,” or the “ *VPMC* ,” the *local building department* shall enforce such provisions.

If the *local building department* receives a complaint that a violation of the VPMC exists that is an immediate and imminent threat to the health or safety of the owner, tenant, or occupants of any *building* or *structure*, or the owner, occupant, or tenant of any nearby *building* or *structure*, and the owner, occupant, or tenant of the building or structure that is the subject of the complaint has refused to allow the local building official or his agent to have access to the subject *building* or *structure*, the local building official or his agent may make an affidavit under oath before a magistrate or a court of competent jurisdiction and request that the magistrate or court grant the local building official or his agent an inspection warrant to enable the building official or his agent to enter the subject building or structure for the purpose of determining whether violations of the VPMC exist. After issuing a warrant under this section, the magistrate or judge shall file the affidavit in the manner prescribed by § 19.2-54 of the Code of Virginia. After executing the warrant, the local building official or his agents shall return the warrant to the clerk of the circuit court of the city or county wherein the inspection was made. The local building official or his agent shall make a reasonable effort to obtain consent from the *owner*, occupant, or tenant of the subject *building* or *structure* prior to seeking the issuance of an inspection warrant under this section.

The *local governing body* shall, however, inspect and enforce the provisions of the VPMC for elevators, escalators, and related conveyances, except for elevators in single-family and two-family homes and townhouses. Such inspection and enforcement shall be carried out by an agency or department designated by the *local governing body*. The local governing body shall also enforce the provisions of the VPMC regarding heat supply and cooling supply if the local governing body has elected not to enforce the VPMC, pursuant to subdivision C of Section 36-105 of the Code of Virginia.

Delete without substitution:

~~**2801.1.1 Required heating in dwelling units.** Heating facilities shall be required in every dwelling unit or portion thereof which is to be rented, leased or let on terms, either expressed or implied, to furnish heat to the occupants thereof. The heating facilities shall be capable of maintaining the room temperature at 65°F (18°C) during the period from October 15 to May 1 during the hours between 6:30 a.m. and 10:30 p.m. of each day and not less than 60°F (16°C) during other hours when measured at a point 3 feet (914 mm) above the floor and 3 feet (914 mm) from the exterior walls. The capability of the heating system shall be based on the outside design temperature required for the *locality* by this code.~~

~~**2801.1.2 Required heating in nonresidential structures.** Heating facilities shall be required in every enclosed occupied space in nonresidential structures. The heating facilities shall be capable of producing sufficient heat during the period from October 1 to May 15 to maintain a temperature of not less than 65°F (18°C) during all working hours. The required room temperature shall be measured at a point 3 feet (914 mm) above the floor and 3 feet (914 mm) from the exterior walls.~~

~~Processing, storage and operation areas that require cooling or special temperature conditions and areas in which persons are primarily engaged in vigorous physical activities are exempt from these requirements.~~

Reason Statement: The Department of Housing and Development convened a stakeholder advisory group to evaluate temperature regulations in the Uniform Statewide Building Code (USBC), particularly the Virginia Property Maintenance Code (VPMC) provisions related to the temperatures required and the dates the temperatures are required to be maintained in tenant occupied dwelling units. The primary issue at hand is the transition from heating to cooling in the spring. There are increasing concerns that hotter weather is arriving earlier and building owners are not able to switch over to cooling soon enough. The problems appear to be common in older buildings. While newer buildings typically have systems that can quickly and easily switch from heating to cooling, older buildings with two-pipe and four-pipe systems are not able to quickly or easily switch between heating and cooling making it difficult for building owners to meet the minimum requirements and maintain comfortable temperatures for residents. This proposal was developed based on discussions and feedback during a meeting of the Heating and Cooling Study Group and was submitted in cdpVA on behalf of the members of the study group that support the proposal.

Summary of changes in the proposal:

- Moves the end of the heating period back two weeks from May 1st to April 15th and the beginning of the cooling period back from

May 15th to May 1st. Many stakeholders have commented that localities are experiencing warmer outdoor temperatures in late April and early May than in previous years and indoor temperatures in residential units are becoming unmanageable due to lack of cooling.

- Eliminates the set transitional period of 14 days, giving code officials the flexibility, utilizing the existing USBC code modification process, to approve building owners to convert shared heating and piping HVAC systems as needed for both heating and cooling supply. This added flexibility eliminates the challenges of a "one size fits all" approach that has not shown to work due to Virginia's diverse climates and geography.
- Marries the requirements for heating of occupiable workspaces to the same heating periods as residential units.
- Adds language to Chapter 1 of Part I of the USBC that clarify that the building official has the authority to enforce the (VPMC) requirements related to heating and cooling in rental units, regardless of whether or not the locality has chosen to enforce the VPMC.
- The references in the exceptions to "Appendix D of the IPC" and to the "IECC", related to the winter and summer outdoor design temperatures, were replaced with "the applicable building code" recognizing varying design conditions and equipment that may have been installed in existing buildings at the time of construction based on what the code required at that time.
- Removes unenforceable language in Chapter 28 of the Virginia Construction Code related to heating requirements in dwelling units and nonresidential structures. The intent of these requirements is covered by the changes proposed to Section 104.1

Cost Impact: The code change proposal will not increase or decrease the cost The code change proposal will not increase or decrease the cost of construction.

PM606.1-24

VPMC: 606.1

Proponents: Shahriar Amiri, representing Arlington County, VA (samiri@arlingtonva.us)

2021 Virginia Property Maintenance Code

Revise as follows:

606.1 General. Elevators, dumbwaiters, platform lifts, wheelchair lifts, moving walks and escalators shall be *maintained* in compliance with ASME A17.1 and ASME A18.1. An annual periodic inspection is required of all elevators, lifts, walks and escalators. A locality shall be permitted to require a 6-month periodic inspection. Periodic tests are required of all elevators, lifts, walks and escalators at the intervals listed in ASME A17.1 Appendix N and ASME A18.1 Appendix D. Periodic tests shall be witnessed by the *code official*. The *code official* may provide for such inspections and test witnessing by an *approved* agency or through agreement with other local certified elevator inspectors. An *approved* agency includes any individual, partnership or corporation who has met the certification requirements established in the VCS. The most current certificate of inspection shall be on display at all times within the elevator or attached to the escalator, be available for public inspection in the office of the *building operator*, or be posted in a publicly conspicuous location *approved* by the *code official*. Where not displayed in the elevator or attached to the escalator, there shall be a notice of where the certificate of inspection is available for inspection.

Reason Statement: Platform lifts, wheelchair lifts and moving walkways are already included within the scope of the Virginia inspection code and the Virginia Uniform Statewide Building Code (which adopts the International Building Code and other safety standards). The rationale for their inclusion centers primarily on ensuring public safety, standardized operation, and clear legal liability, which aligns with federal accessibility mandates like the Americans with Disabilities Act (ADA). The primary justifications for their inclusion are accessibility for individuals with disabilities and safety through standardized installation and maintenance.

Integrating platform and wheelchair lifts into the Virginia inspection code serves a dual purpose: ensuring equitable access for all citizens as required by law, while implementing rigorous safety standards and mandatory inspections to protect users and maintenance personnel alike.

Inclusion of moving walkways in the inspection code is essential for ensuring that, while providing convenience and efficiency, are held to the same high safety standards as other forms of mechanical vertical transportation in public and commercial spaces within Virginia.

Cost Impact: The code change proposal will increase the cost

While this proposal may increase the cost of annual inspections for moving walks, wheel chair lifts and escalators, most private buildings only have elevators and in rare conditions wheelchair lifts for ADA compliance. Escalators and moving walks are generally found in covered mall building and regional airport authorities that already conduct annual inspections because of potential liability.