

# AGENDA

## DHCD WORKGROUP TWO (WG2) MEETING 2015 Code Change Cycle

July 20, 2016 at 9:30 a.m.

Virginia Housing Center

### 1. Submitted Proposals

Virginia Construction Code	Page Number
C-103.3(2) Change of occupancy (Lab sub-workgroup)	3
C-117.1 Moved buildings and structures.	19
CB-202(2) Definitions.	22
CB-303.1.1.1 Small buildings and tenant spaces.	26
CB-304.1.1 Day support and day treatment facilities.	29
CB-901.3 Modifications.	30
CB-1008.1.6 Landings at doors.	31
CB-1023.5 Penetrations	33
CB-1407.10.4 Full-scale test.	35
CB-2308.4.1.1 Header and girder spans. (table)	37
(CR-R602.7 Header and girder spans.) (table)	42
CB-2603.5.5 Vertical and lateral fire propagation.	47
CE-R402.1.1 Insulation and fenestration.	50
CE-R402.4.1.2 Air sealing.	53
CE-R403.2.2 Sealing.	55
Statewide Fire Prevention Code	Page Number
F-703.1 Maintenance	57
F-703.4 Testing.	59
F-1030.1 General.	62
F-2311.7 Repair garages for vehicles fueled by lighter than air.	64
F-3103.2 Approval required.	66
F-5003.3.1.4 Responsibility for cleanup.	68

(Agenda continued on next page)

Virginia Maintenance Code	Page Number
M-202(1) Definitions. (heat supply)	71
M-202(2) Definitions. (heat supply)	74
M-507.1 General.	77
Virginia Rehabilitation Code	Page Number
R-101.5 Use of terminology and notes,.	78
R-102.2(2) Scope.	80
R-202(1) Definitions. (alterations)	82
R-202(2) Definitions. (existing buildings)	83
R-202(3) Definitions. (change of occupancy)	85
R-202(4) Definitions. (work area)	90
R-301.1 General.	97
R-301.1.1 Prescriptive compliance method.	101
R-301.1.2 Work area compliance method.	113
R-303.1 Reroofing.	114
R-505.1.1 Special provisions.	122
R-808.3 Residential occupancies.	123
R-903.1 Existing shafts and vertical openings.	124
R-904.2 Fire alarm and detection systems.	125

## 2. Additional Discussion

Billboard reconstruction (Chip Dicks)

## 3. Adjournment

# C-103.3(2) cdpVA-15

**Proponent :** College Laboratory Sub-workgroup (of DHCD's Workgroup Two) DHCD Staff Contact: Vernon.Hodge@dhcd.virginia.gov

## 2012 Virginia Construction Code

**103.3 Change of occupancy.** No change of occupancy shall be made in any structure when the current USBC requires a greater degree of accessibility, structural strength, fire protection, means of egress, ventilation or sanitation. When such a greater degree is required, the owner or the owner's agent shall comply with the following:

1. When involving Group I-2 or I-3, written application shall be made to the local building department for a new certificate of occupancy and the new certificate of occupancy shall be obtained prior to the new use of the structure. When impractical to achieve compliance with this code for the new occupancy classification, the building official shall consider modifications upon application and as provided for in Section 106.3. In addition, the applicable accessibility provisions of Section 1012.8 of Part II of the *Virginia Uniform Statewide Building Code*, also known as the "*Virginia Rehabilitation Code*," or the "VRC" shall be met.

**Exception:** This section shall not be construed to permit noncompliance with any applicable flood load or flood-resistant construction requirements of this code.

2. In other than Group I-2 or I-3, the provisions of the VRC for change of occupancy shall be met.

**103.3.1 Group B teaching and research laboratories.** Where the use of new or different hazardous materials or a change in the amount of hazardous materials in existing Group B teaching and research laboratories in educational occupancies above the 12th grade would constitute a change of occupancy, Section 302.6 of the VRC 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.

## SECTION 202 DEFINITIONS

**CHEMICAL FUME HOOD.** A ventilated enclosure designed to contain and exhaust fumes, gases, vapors, mists and particulate matter generated within the hood.

**LABORATORY SUITE.** A fire-rated enclosed testing and research laboratory area or areas, 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 427.3.

**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.

# 2015 International Building Code

## (As Part of the 2015 Virginia Construction Code)

**[F] 414.2 Control areas.** *Control areas* shall comply with Sections 414.2.1 through 414.2.5 and the *International Fire Code*.

**Exception:** Higher education teaching and research laboratories shall be permitted to comply with Section 427.

### **SECTION 427 HIGHER EDUCATION LABORATORIES**

**427.1 Scope.** Teaching and research laboratories in Group B occupancies used for educational purposes above the 12th grade complying with the requirements of this section shall be permitted to comply with Tables 427.3, 427.4(1), or 427.4(2) without requiring classification as a Group H occupancy. Except as specified in this section, such laboratories shall comply with all applicable provisions of this code. In addition, as set out in Section 5001.7 of the SFPC, approval under this section is contingent upon operational requirements in the SFPC being complied with and maintained.

**427.2 Application.** The provisions of this section shall be applied as exceptions or additions to applicable requirements of this code.

**427.3 Laboratory suite construction.** Where laboratory suites are provided, they shall be constructed in accordance with this section. The number of laboratory suites and percentage of maximum allowable quantities of hazardous materials in laboratory suites shall be in accordance with Table 427.3.

**427.3.1 Separation from other non-laboratory areas.** Laboratory suites shall be separated from other portions of the building in accordance with the most restrictive of either Table 427.3 with fire barriers constructed in accordance with Section 707 and horizontal assemblies constructed in accordance with Section 711 or Section 508.4.

**Exception:** Where an individual laboratory suite occupies more than one story, the fire resistance rating of intermediate floors contained within the laboratory suite shall comply with the requirements of this code.

**427.3.2 Separation from other laboratory suites.** Laboratory suites shall be separated from other laboratory suites in accordance with Table 427.3.

**427.3.3 Floor assembly fire resistance.** The floor assembly supporting the laboratory suite and the construction supporting the floor of the laboratory suite shall have a fire resistance rating of not less than 2 hours.

**Exception:** The floor assembly of the laboratory suite and the construction supporting the floor of the laboratory suite are allowed to be 1-hour fire resistance rated in buildings of Types IIA, IIIA and VB construction, provided that the building is 3 or fewer stories.

**427.3.4 Maximum number.** The maximum number of laboratory suites per floor shall be in accordance with Table 427.3. Where a building contains both laboratory suites complying with Section 427.3 and control areas complying with Section 414.2, the total

number of laboratory suites and control areas shall not exceed the maximum number of laboratory suites in accordance with Table 427.3.

**427.3.5 Means of egress.** Means of egress shall be in accordance with Chapter 10.

**427.3.6 Standby or emergency power.** Standby or emergency power shall be provided in accordance with Section 414.5.2 where laboratory suites are located above the sixth story above grade plane or located in a story below grade plane.

**427.3.7 Ventilation.** Ventilation shall be in accordance with Chapter 7 of NFPA 45, and the International Mechanical Code. For the purposes of this section the text of Section 7.10.3 of NFPA 45 shall be changed to read, "The design and installation of ducts from chemical fume hoods shall be in accordance with NFPA 91."

**427.3.8 Liquid tight floor.** Portions of the laboratory suite where hazardous materials are present shall be provided with a liquid tight floor.

**427.3.9 Automatic fire sprinkler systems.** Buildings shall be equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1.

**427.3.10 Automatic fire alarm and detection system.** Laboratory suites shall be equipped throughout with an automatic fire detection system in accordance with Section 907.2. The building shall be equipped throughout with an automatic fire alarm system in accordance with Section 907.2.

**427.3.11 Percentage of maximum allowable quantity in each laboratory suite.** The percentage of maximum allowable quantities in each laboratory suite shall be in accordance with Table 427.3.

**TABLE 427.3**  
**DESIGN AND NUMBER OF LABORATORY SUITES PER FLOOR**

<u>Floor Level</u>		<u>Percentage of the Maximum Allowable Quantity per Lab Suite<sup>a</sup></u>	<u>Number of Lab Suites per Floor</u>	<u>Fire-Resistance Rating for Fire Barriers in Hours<sup>b</sup></u>
<u>Above Grade Plane</u>	<u>21+</u>	<u>10</u>	<u>1</u>	<u>2<sup>c</sup></u>
	<u>16-20</u>	<u>25</u>	<u>1</u>	<u>2<sup>c</sup></u>
	<u>11-15</u>	<u>50</u>	<u>1</u>	<u>2<sup>c</sup></u>
	<u>7-10</u>	<u>50</u>	<u>2</u>	<u>2<sup>c</sup></u>
	<u>4-6</u>	<u>75</u>	<u>4</u>	<u>2<sup>c</sup></u>
	<u>3</u>	<u>100</u>	<u>6</u>	<u>1</u>
	<u>1-2</u>	<u>100</u>	<u>8</u>	<u>1</u>
<u>Below Grade Plane</u>	<u>1</u> <u>2</u> <u>Lower than 2</u>	<u>75</u> <u>50</u> <u>Not Allowed</u>	<u>4</u> <u>2</u> <u>Not Allowed</u>	<u>1</u> <u>1</u> <u>Not Allowed</u>

a. Percentage shall be of the maximum allowable quantity per control area shown in Tables 307.1(1) and 307.1(2), with all increases allowed in the notes to those tables.

b. Fire barriers shall include walls, floors and ceilings necessary to provide separation

from other portions of the building.

c. Vertical fire barriers separating laboratory suites from other spaces on the same floor may be one hour rated.

**427.4 Teaching and research laboratories utilizing control areas.** Group B teaching and research laboratories in educational occupancies above the 12th grade utilizing control areas are permitted to increase amounts of hazardous materials stipulated in 414.2 without the laboratories being classified as Group H. The percentage of maximum allowable quantities of hazardous materials per control area and the number of control areas permitted at each floor level within a building shall be permitted to comply with Table 427.4(1) in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or shall be permitted to comply with Table 427.4(2) in buildings not equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1. In addition, as set out in Section 5001.7 of the SFPC, approval under this section is contingent upon operational requirements in the SFPC being complied with and maintained.

**TABLE 427.4(1)  
DESIGN AND NUMBER OF CONTROL AREAS IN BUILDINGS EQUIPPED THROUGHOUT WITH AN AUTOMATIC SPRINKLER SYSTEM IN ACCORDANCE WITH SECTION 903.3.1.1 WITH GROUP B TEACHING AND RESEARCH LABORATORIES IN EDUCATIONAL OCCUPANCIES ABOVE THE 12TH GRADE**

<u>Floor Level</u>		<u>Percentage of the Maximum Allowable Quantity per Control Area<sup>a</sup></u>	<u>Number of Control Areas per Floor</u>	<u>Fire-Resistance Rating for Fire Barriers and Horizontal Assemblies in Hours<sup>b</sup></u>
<u>Above Grade Plane</u>	<u>Higher than 20</u>	<u>5</u>	<u>1</u>	<u>2<sup>c</sup></u>
	<u>11-20</u>	<u>10</u>	<u>1</u>	<u>2<sup>c</sup></u>
	<u>7-10</u>	<u>25</u>	<u>2</u>	<u>2<sup>c</sup></u>
	<u>4-6</u>	<u>50</u>	<u>2</u>	<u>2<sup>c</sup></u>
	<u>3</u>	<u>75</u>	<u>3</u>	<u>2<sup>c</sup></u>
	<u>1-2</u>	<u>100</u>	<u>4</u>	<u>1</u> <u>1</u>
<u>Below Grade Plane</u>	<u>1</u> <u>2</u> <u>Lower than 2</u>	<u>75</u> <u>50</u> <u>Not Allowed</u>	<u>3</u> <u>2</u> <u>Not Allowed</u>	<u>1</u> <u>1</u> <u>Not Allowed</u>

a. Percentage shall be of the maximum allowable quantity per control area shown in Tables 307.1(1) and 307.1(2), with all increases allowed in the notes to those tables.

b. Separation shall fire barriers and horizontal assemblies as necessary to provide separation from other portions of the building.

c. Fire barriers separating control areas from other spaces on the same floor may be one hour rated.

**TABLE 427.4(2)  
DESIGN AND NUMBER OF CONTROL AREAS IN BUILDINGS NOT EQUIPPED THROUGHOUT WITH AN AUTOMATIC SPRINKLER SYSTEM IN ACCORDANCE WITH**

**SECTION 903.3.1.1 WITH GROUP B TEACHING AND RESEARCH LABORATORIES IN EDUCATIONAL OCCUPANCIES ABOVE THE 12TH GRADE**

<u>Floor Level</u>		<u>Percentage of the Maximum Allowable Quantity per Control Area<sup>a</sup></u>	<u>Number of Control Areas per Floor</u>	<u>Fire-Resistance Rating for Fire Barriers and Horizontal Assemblies in Hours<sup>b</sup></u>
<u>Above Grade Plane</u>	<u>Higher than 9</u>	<u>5</u>	<u>1</u>	<u>2<sup>c</sup></u>
	<u>7-9</u>	<u>10</u>	<u>2</u>	<u>2<sup>c</sup></u>
	<u>4-6</u>	<u>25</u>	<u>2</u>	<u>2<sup>c</sup></u>
	<u>3</u>	<u>75</u>	<u>2</u>	<u>1</u>
	<u>1-2</u>	<u>100</u>	<u>4</u>	<u>1</u>
<u>Below Grade Plane</u>	<u>1</u> <u>2</u> <u>Lower than 2</u>	<u>75</u> <u>50</u> <u>Not Allowed</u>	<u>3</u> <u>2</u> <u>Not Allowed</u>	<u>1</u> <u>1</u> <u>Not Allowed</u>

a. Percentage shall be of the maximum allowable quantity per control area shown in Tables 307.1(1) and 307.1(2), excluding all increases allowed in the notes to those tables.

b. Separation shall shall fire barriers and horizontal assemblies as necessary to provide separation from other portions of the building.

c. Fire barriers separating control areas from other spaces on the same floor may be one hour rated.

**427.4.1 Separation requirements.** Control areas shall be separated from each other and from other non-control areas by fire barriers constructed in accordance with Section 707 or horizontal assemblies constructed in accordance with Section 711, or both.

**427.4.2 Fire-resistance-rating requirements.** The required fire-resistance rating for fire barriers shall be in accordance with Table 427.4(1) in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or in accordance with Table 427.4(2) in buildings not equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1. The floor assembly of the control area and the construction supporting the floor of the control area shall have a fire-resistance rating in accordance with Table 427.4(1) in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or in accordance with Table 427.4(2) in buildings not equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.

**Exception:** The floor assembly of the control area and the construction supporting the floor of the control area are allowed to be 1-hour fire resistance rated in buildings of Types IIA, IIIA and VA construction, provided that the building is 3 or fewer stories.

**427.4.3 Standby or emergency power.** Standby or emergency power shall be provided where control areas are located above the sixth floor level above grade plane or located in a floor level below grade plane.

**427.4.4 Restricted materials in storage and use.** Where approved by the building

official, the storage and use of the following hazardous materials prohibited by 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. Organic Peroxides - UD
2. Pyrophorics
3. Class 4 Oxidizers

No additional quantity increases shall be allowed. All such materials shall be stored and used in accordance with Section 5001.7 of the SFPC.

**427.4.5 Automatic fire detection.** An automatic fire detection system shall be provided in accordance with Section 907.

**427.4.6 Ventilation.** Ventilation shall be in accordance with the International Mechanical Code.

**[F] 907.2.2 Group B.** An automatic fire alarm and detection system shall be provided in Group B occupancies where an increase in hazardous materials is allowed in accordance with Section 427. A manual fire alarm system shall be installed in Group B occupancies where one of the following conditions exists:

1. The combined Group B *occupant load* of all floors is 500 or more.
2. The Group B *occupant load* is more than 100 persons above or below the lowest *level of exit discharge*.
3. The *fire area* contains an ambulatory care facility.

**Exception:** Manual fire alarm boxes are not required where the building is equipped throughout with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1 and the occupant notification appliances will activate throughout the notification zones upon sprinkler water flow.

## **CHAPTER 35 REFERENCED STANDARDS**

NFPA 45-15 Standard on Fire Protection for Laboratories Using Chemicals

## **2015 International Existing Building Code**

**(As Part of the 2015 Virginia Rehabilitation Code)**

**302.6 Change of occupancy in existing Group B teaching and research laboratories.** Where the use of new or different hazardous materials or a change in the amount of hazardous materials in existing Group B testing and research laboratories in educational occupancies above the 12th grade 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, as set out in Section 5001.7 of the SFPC, approval under this section is contingent upon operational requirements in the SFPC being complied with and maintained.

**302.6.1 Hazardous materials in existing Group B teaching and research 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 302.6.1(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 GROUP B**  
**TEACHING AND RESEARCH LABORATORIES IN EDUCATIONAL OCCUPANCIES**  
**ABOVE THE 12TH GRADE**

<u>Floor Level</u>		<u>Percentage of the Maximum Allowable Quantity per Control Area<sup>a</sup></u>	<u>Number of Control Areas per Floor</u>	<u>Fire-Resistance Rating for Fire Barriers and Horizontal Assemblies in Hours<sup>b</sup></u>
<u>Above Grade Plane</u>	<u>Higher than</u>	<u>5</u>	<u>1</u>	<u>2<sup>c</sup></u>
	<u>20</u>	<u>10</u>	<u>1</u>	<u>2<sup>c</sup></u>
	<u>11-20</u>	<u>25</u>	<u>2</u>	<u>2<sup>c</sup></u>
	<u>7-10</u>	<u>50</u>	<u>2</u>	<u>2<sup>c</sup></u>
	<u>4-6</u>	<u>75</u>	<u>3</u>	<u>2<sup>c</sup></u>
	<u>3</u>	<u>100</u>	<u>4</u>	<u>1</u>
<u>Below Grade Plane</u>	<u>1-2</u>			<u>1</u>
	<u>1</u>	<u>75</u>	<u>3</u>	<u>1</u>
	<u>2</u>	<u>50</u>	<u>2</u>	<u>1</u>
	<u>Lower than 2</u>	<u>Not Allowed</u>	<u>Not Allowed</u>	<u>Not Allowed</u>

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 shall fire barriers and horizontal assemblies as necessary to provide separation from other portions of the building.

c. Fire barriers separating control areas from other spaces on the same floor may be one hour rated.

**TABLE 302.6.1(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 GROUP B TEACHING AND RESEARCH LABORATORIES IN EDUCATIONAL OCCUPANCIES ABOVE THE 12TH GRADE**

<u>Floor Level</u>		<u>Percentage of the Maximum Allowable Quantity per Control Area<sup>a</sup></u>	<u>Number of Control Areas per Floor</u>	<u>Fire-Resistance Rating for Fire Barriers and Horizontal Assemblies in Hours<sup>b</sup></u>
<u>Above Grade Plane</u>	<u>Higher than 9</u>	<u>5</u>	<u>1</u>	<u>2<sup>c</sup></u>
	<u>7-9</u>	<u>10</u>	<u>2</u>	<u>2<sup>c</sup></u>
	<u>4-6</u>	<u>25</u>	<u>2</u>	<u>2<sup>c</sup></u>
	<u>3</u>	<u>75</u>	<u>2</u>	<u>1</u>
	<u>1-2</u>	<u>100</u>	<u>4</u>	<u>1</u>
<u>Below Grade Plane</u>	<u>1</u> <u>2</u> <u>Lower than 2</u>	<u>75</u> <u>50</u> <u>Not Allowed</u>	<u>3</u> <u>2</u> <u>Not Allowed</u>	<u>1</u> <u>1</u> <u>Not Allowed</u>

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, excluding all increases allowed in the notes to those tables.

b. Separation shall shall fire barriers and horizontal assemblies as necessary to provide separation from other portions of the building.

c. Fire barriers separating control areas from other spaces on the same floor may be one hour rated.

**302.6.1.1 Separation requirements.** Control areas shall be separated from each other and from other non-control areas by fire barriers constructed in accordance with Section 707 of the VCC or horizontal assemblies constructed in accordance with Section 711 of the VCC, or both.

**302.6.1.2 Fire-resistance-rating requirements.** The required fire-resistance rating for fire barriers shall be in accordance with Table 302.6.1(1) in existing buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 of the VCC or in accordance with Table 302.6.1(2) in existing buildings not equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 of the VCC. The floor assembly of the control area and the construction supporting the floor of the control area shall have a fire-resistance rating in accordance with Table 302.6.1(1) in existing buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 of the VCC or in accordance with Table 302.6.1(2) in existing buildings not equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 of the VCC.

**Exceptions:**

1. The floor assembly of the control area and the construction supporting the floor of the control area are allowed to be 1-hour fire resistance rated in buildings of Types IIB, IIIB and VB construction, provided that the building is 3 or fewer stories.

2. In existing buildings that were constructed prior to the initial edition of the USBC and that comply with the semi-fireproof or fireproof construction classification under the state fire and public building regulations in effect prior to March 31, 1986, the existing floor assemblies and supporting construction for control areas shall be deemed to meet the requirements of this section. 302.6.1.3 Automatic fire alarm and detection systems. An automatic fire detection system shall be provided in the control area in accordance with Section 907 of the VCC. An automatic fire alarm system shall be provided throughout the building in accordance with Section 907 of the VCC.

## **CHAPTER 16 REFERENCED STANDARDS**

NFPA 45-15 Standard on Fire Protection for Laboratories Using Chemicals

## **2015 International Fire Code**

**(As Part of the 2015 Virginia Statewide Fire Prevention Code)**

**CHEMICAL FUME HOOD.** A ventilated enclosure designed to contain and exhaust fumes, gases, vapors, mists and particulate matter generated within the hood.

**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 3804.

**SPECIAL EXPERT.** An individual who has demonstrated qualifications in a specific area, outside the practice of architecture or engineering, through education, training and experience.

**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.

**5001.7 Operational requirements for Group B teaching and research laboratories.** Group B teaching and research laboratories in educational occupancies above the 12th grade utilizing the alternative compliance requirements of Section 427 of the VCC or Section 302.6 of the VRC shall comply with this section and other applicable requirements of this code. In the case of conflicts between the requirements of Section 427 of the VCC or Section 302.6 of the VRC and provisions of this code other than those set out in this section, Section 427 of the VCC or Section 302.6 of the VRC, as applicable, shall govern.

**5001.7.1 Chemical safety reviews.** Operating and emergency procedures planning and documentation shall be as set out in Sections 5001.3.3.11 through 5001.3.3.17. Such documentation shall be prepared by laboratory safety personnel or special experts, and shall be made available in the workplace for reference and review by employees. Copies of such documentation shall be furnished to the fire code official for review upon request.

**5001.7.2 Hazardous materials handling.** Receiving, transporting on site, unpacking and dispensing of hazardous materials shall be carried out by persons trained in proper handling of such materials and shall be performed in accordance with Chapters 50 through 67, as applicable.

**5001.7.3 Hazard identification signage.** Warning signs for other than building components shall be provided in accordance with Section 5003.5.

**5001.7.4 Maintenance of equipment, machinery and processes.** Maintenance of equipment, machinery and processes used with hazardous materials shall comply with Section 5003.2.6.

**5001.7.5 Time sensitive materials.** Containers of materials that have the potential to become hazardous during prolonged storage shall be dated when first opened, and shall be managed in accordance with NFPA 45 Section 8.2.4.4.1.

**5001.7.6 Maintenance of storage, dispensing, use and handling requirements.** Storage, dispensing, use and handling requirements in the VCC or VRC shall be maintained. Operational requirements not affecting the manner of construction shall comply with this chapter and Chapters 51 through 67, as applicable.

**5001.7.7 Hazardous wastes.** Storage, dispensing, use and handling of hazardous waste shall comply with this chapter and Chapters 51 through 67, as applicable.

**5001.7.8 Container Size.** The maximum container size for all hazardous materials shall be 5.3 gallons for liquids, 50 pounds for solids, 100 cf. for health hazard gases per table 5003.1.1(2) and 500 cf. for all other gases in accordance with Table 5003.1.1(1).

**Exception:** Hazardous waste collection containers, for other than Class I and Class II flammable liquids, are permitted to exceed 5.3 (20L) gallons where approved.

**5001.7.9 Density.** Quantities of Class I, II & IIIA combustible or flammable liquids in storage and use within control areas or laboratory suites shall not exceed 8 gallons (30 liters) per 100 square feet of floor area, with not more than 4 gallons (15 liters) per 100 square foot being in use. Quantities of Class I flammable liquids in storage and use shall not exceed 4 gallons per 100 sf of floor area with not more than 2 gallons (7.5 liters) being in use. The maximum in use in open systems is limited to 10% of these quantities. Densities shall be reduced by 25 percent on the 4th through 6th floor levels above grade plane of the building and 50% above the 6th floor level. The density is to be reduced to 50% of these values for buildings that are not protected throughout with an approved automatic fire sprinkler system. Regardless of the density, the maximum allowable quantity per control area or laboratory suite shall not be exceeded.

**Exception:** Designated hazardous waste collection areas or rooms within a control area or laboratory suite are not limited, but stored quantities shall not exceed the maximum allowable quantity per laboratory suite or control area.

**5001.7.10 Restricted materials in storage.** Storage of hazardous materials prohibited by Table 5003.1.1(1) in existing buildings not equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 of the VCC shall be allowed within a control area at 25 percent of the limits in Table 5003.1.1(1) for a building equipped throughout with an automatic sprinkler system, with no additional increases allowed, provided that such materials are stored in accordance with all of the following:

1. Containers shall be completely sealed and stored according to the manufacturer's recommendations.
2. Storage shall be within approved hazardous materials storage cabinets in accordance with Section 5003.8.7, or shall be located in an inert atmosphere glove box in accordance with NFPA 45 Section 7.11.
3. The storage cabinet or glove box shall not contain any storage of incompatible materials.

**5001.7.11 Restricted materials in use.** Use of hazardous materials prohibited by Table 5003.1.1(1) in existing buildings not equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 of the VCC shall be allowed within a control area at 25 percent of the limits in Table 5003.1.1(1) for buildings equipped throughout with an automatic sprinkler system, with no additional increases allowed, provided that such materials are used in accordance with all of the following:

1. Use shall be within an approved chemical fume hood listed in accordance with UL 1805, or in an inert atmosphere glove box in accordance with NFPA 45 Section 7.11, or other approved equipment designed for the specific hazard of the material.
2. Combustible materials shall be kept at least two feet (0.610 m) away from the work area, except for those items directly related to the research.
3. A portable fire extinguisher appropriate for the specific material shall be provided within 20 feet of the use in accordance with Section 906.

## **CHAPTER 80 REFERENCED STANDARDS**

NFPA 45-15 Standard on Fire Protection for Laboratories Using Chemicals  
UL 1805-2002 Standard for Laboratory Hoods and Cabinets

**Reason:** This proposed code change attempts to address the limiting factors of MAQs within facilities (via the use of control areas) by answering the following questions:

1. How do we increase MAQs beyond those already allowed while still incorporating an acceptable level of safety, protection, and/or fire resistance ratings?
2. How do we apply these requirements to existing buildings?
3. How do we accomplish the first two without a large re-write of the code (i.e., Group L) or relying on a standard that may not be completely written in enforceable terms (i.e., NFPA 45)?

The answer to question #1 above is to allow for an increased number of control areas - which would in effect, allow for increased MAQs per floor level. Providing an acceptable level of safety is addressed by limiting this change to apply only to Group B labs and by considering the following:

- in Group B laboratories, the use of hazardous chemicals is generally limited to small quantities used on a short-term basis and in operations where the chemicals and procedures change frequently. 29 CFR 1910.1450, which is referred to as the 'Laboratory Standard' requires the development and implementation of a formal, written, and employee-accessible program, referred to as a Chemical Hygiene Plan (CHP), where this plan must be capable of protecting employees (and users) from health hazards associated with hazardous chemicals used in the laboratory, and
- where research funding is obtained from Agencies such as the National Institute of Health (NIH), development of a Chemical Hygiene Plan for Laboratory operations is already a requirement, and
- in such Group B labs, the students and faculty tend to be more careful in their handling of hazardous materials, and
- the students tend to be better educated and more closely supervised, and
- such facilities tend to undergo more inspections, and
- many Group B facilities (i.e., higher education) have dedicated departments whose mission is to ensure proper procedures and safety precautions are adhered to and implemented.

The level of protection and fire resistance ratings are addressed by requiring a minimum 2-hour enclosure from the 3rd floor level and higher (4th floor level or higher is allowed now). Also, since control areas are required to be compartmentalized and completely enclosed (all sides, top, and bottom), any additional control areas allowed under this code change proposal would be required to be completely separated from the remainder of the facility and from other control areas.

It has been said that approximately 90% of the current higher education laboratory facilities are 4 stories or less - including new and existing buildings, so the number of facilities this code change would affect would potentially be a smaller percentage (since the major benefit is for buildings 4 stories and higher).

Per the VDFP fire data "Tally" charts ([http://vdfp.virginia.gov/fire\\_data\\_statistics/index.htm](http://vdfp.virginia.gov/fire_data_statistics/index.htm)), within the last ten years, when it comes to laboratories there have been:

- 0.03% frequency percentage of calls,
- zero deaths (civilian or fire fighters),
- two injuries (to fire fighters), and
- minimal property damage (approximately \$230,000 over the 10-year period with \$200,000 of that in one year alone - 2005).

Empirical data suggests that laboratories (including Group B higher education) appear to be relatively safe occupancies. The imposition of additional performance-based safety requirements in the SFPC where increased quantities will be allowed to be used further enhance the safety of operations using hazardous materials.

The answer to question #2 above is to allow existing facilities to benefit from the Virginia amendments and thus, existing Group B laboratories could utilize the proposed amendments included in this code change proposal, rather than be evaluated under the building code in which it was constructed.

If you accept the answers to #1 and #2, then the answer to question #3 above could be accomplished by adding a new subsection to 414.2 in the VCC and a new subsection 302.6 in the VRC.

The new definitions are provided to better describe what a "testing and research lab" is and also mimic the language use in 2015 IMC 510.1.

NATIONAL IFC WORKGROUP SUPPORTING STATEMENT: [copied verbatim without any edits and therefore, refers to information that is not a part of this code change proposal, but still conveys the conceptual approach]

There is quite possibly no industry more important to lives across the world than higher education academic institutions. The advance of technologies, science, medicine and our knowledge of the world often relies on having vibrant and successful academic institutions.

These academic institutions often have chemistry, biology, medical, engineering and other laboratories where hazardous materials are used. The IFC does not specifically address teaching and research laboratories, so users must try to apply general hazardous materials provisions, which oftentimes are not appropriate for specialized academic laboratory settings. The following is a list of several conditions typically present in academic laboratories

that make them unique:

1. Lower chemical density in individual research laboratories. In a teaching and research environment, there are often many small laboratories within a building that are using small quantities of hazardous materials in each location. Individually, they do not store or use a large quantity of hazardous materials, but together, they may often exceed the maximum allowable quantities for the control area. This lower chemical density often mitigates the overall risk, but the IFC currently has no provisions to recognize this condition.
2. Ongoing staff oversight from "Special Experts" in laboratory safety. Many higher education institutions have a full cadre of faculty and staff with chemical expertise. These "Special Experts" often include, but are not limited to: Fire Marshals, Industrial Hygienists, Radiation Safety Officers, Biological Safety Officers, Chemical Hygiene Officers and Environmental Health and Safety Officers. These individuals are an integral part of the preparation/review of laboratory safety documentations, as well as regularly scheduled safety audits. Fire and life safety expertise and oversight on our campuses is continually increasing with the addition of these highly capable professionals.
3. Limited, or "directed", funding streams. Also unique to academic institutions are the funding sources for research. In a "non-profit" teaching and research environment, the majority of research is funded through grants and endowments. Unfortunately, many grants only support the costs of research personnel and equipment, not structural upgrades to accommodate newer research processes.
4. Mixed-use occupancies. A typical university science building will house laboratories, office space, storerooms, classrooms and lecture halls. The current limits on hazardous materials are so restrictive on upper floors that many universities are forced to locate classrooms and lecture halls on the upper floors so that they can take full advantage of the hazardous materials quantities allowed on the lower floors. This results in moving large numbers of students through hallways, past laboratories to get to the upper floors. They will also have to exit back down the same routes in the event of an emergency.

This proposal introduces a post-secondary academic laboratory chapter to address these unique circumstances. University fire and life safety professionals from across the United States have collaborated on writing this chapter. Conscientious effort has been made to balance the proposed IFC modifications with enhanced administrative, emergency planning and structural provisions.

This chapter also introduces some important provisions from NFPA 45, Fire Protection for Laboratories. Although the IFC references many national standards on specific topics, there are no such references currently for laboratories. This standard contains many laboratory specific requirements and design professionals rely heavily upon this national standard for current laboratory designs.

Specifically, the chapter addresses three primary needs: 1) increasing general laboratory safety requirements, 2) increasing MAQ's in large or multi-story laboratories, or laboratories located in multi-story buildings and, 3) allowing very small quantities of currently prohibited hazardous materials in non-sprinklered laboratory buildings. A brief description of each is as follows:

1. Increased general laboratory safety requirements: This proposal introduces a post-secondary academic laboratory chapter in to the IFC. Currently, there is no teaching/research laboratory specific chapter in the IFC, and there are no references to NFPA 45 (Fire Protection for Laboratories). This new chapter fills a much needed gap in the IFC, and provides for enhanced safety requirements in these academic laboratories.
2. Control Area Limitations: As post-secondary campuses across the world grow to meet increasing populations, they often are landlocked, and require that new buildings are built taller and/or larger. This is particularly true in large metropolitan areas. The current "Control Area" restrictions in the ICC codes severely restrict functioning laboratories on upper floor levels or in larger buildings.

In response to this critical issue, numerous jurisdictions have adopted state or local amendments to allow for greater numbers of control areas and larger percentages of MAQs in academic and /or non-production laboratories. Such jurisdictions include California, Arizona, Minnesota, Seattle and New York City. One of the primary purposes of this proposal is to provide standardized model code language to address this topic.

This chapter provides an alternate design approach for such scenarios where traditional control area limitations are not feasible, and where building Group H-Occupancies is not possible. The "Laboratory Suite" concept gives users an option to allow more flexibility in hazardous materials use, in exchange for additional administrative and structural safeguards, while still remaining a "B" occupancy.

3. Non-Sprinklered Limitations: There are thousands of existing post-secondary academic institutions, with some dating back to 1800's, where retrofitting automatic sprinklers is not practical. This proposal addresses a critically important issue to selected laboratories in existing, non-sprinklered buildings, who need very small quantities of materials that have blanket restrictions in non-sprinklered buildings. This proposal provides a limited exception to allow very small quantities of such materials when specific mitigation controls are provided.

#### PART 1 REASON:

Section 3801. Provides general scoping information. It clarifies that the chapter applies to both existing laboratories in existing buildings and new laboratories as referenced in the sections.

The definition used for laboratories mirrors the definition found in the International Mechanical Code, with the addition of language to clarify that the chapter is limited to "Laboratories in higher education institutions beyond the 12th grade".

Section 3802. Provides definitions for new terms introduced in this chapter. The term "Special Expert" is in the International Performance Code in the appendix. It was utilized in this chapter to reflect the high level of faculty and staff safety professionals available at many academic institutions.

Section 3803. Requires additional safety pre-planning for all laboratories or laboratory suites utilizing this chapter, also consistent with laboratory safeguards found in NFPA 45. Enhanced safety requirements found in this section include:

1. New hazard analysis documentation shall include: Process Hazard Analysis, Pre-startup Safety Review, Operating and Emergency Procedures, Management of Change, Accident Procedures, Consequence Analysis and Safety Audits. Requires that such documentation shall be submitted to the fire code official. (IFC Section 5001).
2. Time-sensitive materials shall be dated and pro-actively managed. (NFPA 45).
3. Maximum container size of Class I flammable liquids is 5.3 gallons. (NFPA 45).
4. Density of Class I flammable liquids in storage and use shall be no greater than 8 gallons per 100 square feet of floor area. (NFPA45).

Section 3804. Provides the "Laboratory Suite" design option in addition to traditional control area options. Enhanced safety requirements in this section include:

1. All of those listed above in Section 3803.
2. Rated fire barriers for compartmentation of laboratory suites within buildings.
3. In laboratories above the 6th story, or in a story below grade plane, requirements for standby or emergency power for safety-related equipment and enhanced automatic sprinkler protection.
4. Automatic sprinkler design and density exceeding that which would be required by NFPA 45.

If the vertical fire barrier between lab suites is required to be two-hour rated, a fire rated duct enclosure, UL listed duct wrap, or multiple building shafts is required. Footnote c in the table allows the vertical fire barriers between laboratory suites on a floor to be one-hour rated because of the reduced quantities of hazardous materials in each laboratory suite on the floors above the 6th story, and additional safety provisions in Chapter 38 which apply to all laboratories utilizing this chapter. In addition, chemical exhaust ducts routed through the one-hour rated barriers would be permitted to be installed without fire dampers, where the duct needs to be routed to the nearest chemical exhaust shaft. Fire dampers are not installed in laboratory exhaust ducts to

maintain exhaust ventilation in laboratories in the event of a fire. In the IBC, Section 714.1.1 and Section 717.5.2, Exception 3; and IMC 607.5.5 allow exhaust system ducts to penetrate fire rated barriers and fire rated shafts without a fire damper. These provisions carry significant importance and allow multiple laboratory suites per floor of a building. The footnote has no effect on other provisions of the code and does not change the structural fire resistance requirements of IBC Chapter 6, or the continuity requirements of IBC Chapter 7.

Historical fire data over the last 25 years has shown that the vast majority of laboratory fires do not typically extend beyond the area, or even the room of origin. This is primarily due to the limited quantities of hazardous materials in use, and the following safety features that are incorporated into laboratory designs:

1. Ventilation systems provide large volumes of airflow through laboratories to continuously remove hazardous vapors, fumes and gases.
2. Fume hoods provide local ventilation control for containment and removal of hazardous vapors, fumes and gases during the use of hazardous materials.
3. Automatic fire sprinkler systems can confine the fires to the room of origin
4. Fire alarm systems provide prompt notification to building occupants and/or emergency responders.

All of these structural safety features are required in some combination in laboratories utilizing this chapter, as well as the additional NFPA 45 requirements for monitoring of time-sensitive materials, limitations on container sizes and limiting the density of flammable liquids over the floor area of laboratory space.

Section 3805. Provides and clarifies general hazardous materials requirements for non-sprinklered laboratories. Provides an option to allow for very small quantities of prohibited materials in non-sprinklered laboratories. Enhanced safety requirements in this section include:

1. All of those listed above in Section 3803.
2. Enhanced storage requirements in accordance with NFPA 45.
3. Prohibition of storage of any incompatible materials.
4. Use of hazardous materials use must be in a chemical fume hood, glove box or other approved laboratory equipment designed for the specific hazard.
5. The work area must be free of all unnecessary combustible materials.
6. There must be an appropriate extinguishing media located within 20 feet.

Section 3806. Provides requirements for existing laboratories in existing sprinklered buildings. Enhanced safety requirements in this section include all of those in Section 3803, including complete hazard analysis and safety audits, and limits on container sizes for all hazardous materials and density limits on flammable liquids.

#### PART 2 REASON:

Modifies IBC 414.2 to identify that "Laboratory Suites" are an exception to traditional control area provisions.

#### PART 3 REASON:

Modifies IFC 604.2 to identify that "Laboratory Suites" require emergency or standby power.

#### PART 4 REASON:

Adds NFPA 45 as recognized standard.

This chapter was written and reviewed by a national taskforce made up of fire and life safety professionals from colleges, universities, municipal fire organizations and private industry across the United States. Taskforce members are individuals representing their own institutions, as well as members who were assigned participants by national college and university safety associations.

#### National endorsements:

Campus Safety, Health, and Environmental Management Association (CSHEMA)

This proposal [their proposal is similar (e.g., uses the new IBC but existing NFPA 45 concept of laboratory suites), but not identical to this code change proposal (e.g., which uses the existing IBC concept of control areas)] is submitted by the ICC Fire Code Action Committee (FCAC). The FCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes with regard to fire safety and hazardous materials in new and existing buildings and facilities and the protection of life and property in wildland urban interface areas. In 2014 and 2015 the Fire-CAC has held 5 open meetings. In addition, there were numerous conference calls, Regional Work Group and Task Group meetings for the current code development cycle, which included members of the committees as well as any interested parties, to discuss and debate the proposed changes. Related documentation and reports are posted on the FCAC website

**Cost Impact:** Although the cost of construction may increase (because you would be constructing more control areas that are separated by fire barriers and horizontal assemblies), such Group B laboratories may be in a much better position to apply for research grants and funding, and could possibly attract the top students and faculty that might otherwise go to other universities or businesses.

---

## **Workgroup Recommendation**

**Workgroup 2 Recommendation:** None

**Workgroup 2 Reason:** None

---

## **Board Decision**

None

**C-103.3(2) cdpVA-15**

# C-117.2 cdpVA-15

**Proponent :** Ronald Clements, Jr, Representing VBCOA VRC Committee (clementsro@chesterfield.gov); Kenney Payne, Representing AIA-VA (kpayne@moseleyarchitects.com)

## 2012 Virginia Construction Code

### 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 a certification of occupancy is issued for the new location. Such moved buildings or structures shall be required to comply with the requirements of ~~this code for a newly constructed building or structure unless meeting all of the following requirements relative to the new location:~~ VRC.

- ~~1. There is no change in the occupancy classification from its previous location.~~
- ~~2. The building or structure was in compliance with all state and local requirements applicable to it in its previous location and is in compliance with all state and local requirements applicable if originally constructed in the new location.~~
- ~~3. The building or structure did not become unsafe during the moving process due to structural damage or for other reasons.~~
- ~~4. Any alterations, reconstruction, renovations or repairs made pursuant to the move are in compliance with applicable requirements of the VRC.~~

## 2015 International Existing Building Code

### SECTION 202 DEFINITIONS

#### ~~RELOCATABLE BUILDING.~~

~~A partially or completely assembled building constructed and designed to be reused multiple times and transported to different building sites.~~

**301.1 General.** ~~The repair, alteration, change of occupancy or addition or relocation~~ of all existing buildings shall comply with one of the methods listed in Sections 301.1.1 through 301.1.3 as selected by the applicant. Sections 301.1.1 through 301.1.3 shall not be applied in combination with each other. Moved buildings and structures shall comply with chapter 13 of this code. Where this code requires consideration of the seismic forces resisting system of an *existing building* subject to *repair, alteration, change of occupancy, addition or relocation of existing buildings*, the seismic evaluation and design shall be based on Section 301.1.4 regardless of which compliance method is used.

- **Exception:** Subject to the approval of the *code official*, alterations complying with the laws in existence at the time the building or the affected portion of the building was built shall be considered in compliance with the provisions of this code unless the building is undergoing more than a limited structural *alteration* as defined in Section 907.4.4. New structural members added as part of the

*alteration shall comply with the International Building Code. Alterations of existing buildings in flood hazard areas shall comply with Section 701.3.*

**301.1.2 Work area compliance method.** *Repairs, alterations, additions, and changes in occupancy ~~and relocated buildings~~ complying with the applicable requirements of Chapters 5 through ~~13-12~~ of this code shall be considered in compliance with the provisions of this code.*

**301.1.3 Performance compliance method.** *Repairs, alterations, additions, and changes in occupancy ~~and relocated buildings~~ complying with Chapter 14 of this code shall be considered in compliance with the provisions of this code.*

## **~~SECTION 409 MOVED STRUCTURES~~**

**~~409.1 Conformance.~~** *Structures moved into or within the jurisdiction shall comply with the provisions of this code for new structures.*

**501.1 Scope.** The provisions of this chapter shall be used in conjunction with Chapters 6 through ~~13-12~~ and shall apply to the *alteration, repair, addition and change of occupancy* of existing structures, including historic ~~and moved~~ structures, as referenced in Section 301.1.2. The work performed on an *existing building* shall be classified in accordance with this chapter.

## **~~SECTION 509 RELOCATED BUILDINGS~~**

**~~509.1 Scope.~~** *Relocated building provisions shall apply to relocated or moved buildings.*

**~~509.2 Application.~~** *Relocated buildings shall comply with the provisions of Chapter ~~13-~~*

**1301.1 Scope.** This chapter provides requirements for ~~relocated or moved structures, including relocatable buildings as defined in Chapter 2, and structures.~~

**1401.1 Scope.** The provisions of this chapter shall apply to the *alteration, repair, addition and change of occupancy* of existing structures, including historic ~~and moved~~ structures, as referenced in Section 301.1.3. The provisions of this chapter are intended to maintain or increase the current degree of public safety, health and general welfare in *existing buildings* while permitting *repair, alteration, addition and change of occupancy* without requiring full compliance with Chapters 5 through ~~13-12~~, except where compliance with other provisions of this code is specifically required in this chapter.

**Reason:** VRC chapter 13 addresses moved buildings and structures. The existing requirements of 117.2 are still basically the same as they were prior to the adoption of the VRC. The section needs to be updated to address the scope of the VRC for existing buildings and VRC chapter 13 specifically for moved buildings. The four requirements, numbered 1-4, listed in VCC section 117.2 are proposed to be deleted because they are addressed in VRC chapter 13. VCC section 117.2 requirements #1, #2 and #4 are addressed in VRC 1301.2; #3 is addressed in VRC 1302.7. The proposed deletion of the "relocatable building" definition, and the reference in the scope of VRC 1301.1, from the 2015 IEBC is because the definition will have no use in the VRC (USBC part 3). The definition was added to the IEBC as a prelude to developing code provisions to address industrialized buildings and manufactured homes. Many states that adopt the IEBC do not have separate state regulations for industrialized buildings and manufactured homes, as does Virginia; therefore, relocatable buildings were added to the IEBC to address that issue in those states. With VCC section 102.3 #5 deleting industrialized buildings and manufactured homes from the USBC relocatable buildings will not be within the scope of the VRC. In Virginia the Virginia Industrialized Building Safety Regulations and Virginia Manufactured Home Safety Regulations govern installation and relocation of those types of structures.

The prescriptive method addresses moved buildings by referring to using the VRC provisions for new construction, which is inaccurate, and the performance method addresses moved buildings by sending you back to chapter 13 in the work area method. This proposed code change takes chapter 13 out of the work area method and sets it up as the chapter to use for all moved buildings per section 301. Chapter 13 section 1301.2 already requires compliance with the VRC for repairs, alterations and changes of occupancy.

**Cost Impact:** There is no cost impact. This change does not affect the manner of construction.

---

## **Workgroup Recommendation**

**Workgroup 1 Recommendation:** Consensus for Approval

**Workgroup 1 Reason:** None

**Workgroup 2 Recommendation:** None

**Workgroup 2 Reason:** None

---

## **Board Decision**

None

**C-117.2 cdpVA-15**

---

# CB-202(2) cdpVA-15

**Proponent :** Kenney Payne, Representing AIA-VA  
(kpayne@moseleyarchitects.com)

## 2015 International Building Code

### SECTION 202 DEFINITIONS

#### **AREA, BUILDING.**

~~The aggregate gross floor area included within surrounding of all exterior walls stories (or exterior walls and fire walls) exclusive of vent shafts and courts building. Areas of the building not provided with surrounding walls shall be included in the building area if such areas are included within the horizontal projection of the roof or floor above.~~

#### **FLOOR AREA, GROSS.**

The floor area per story within the inside perimeter of the exterior walls and fire walls of the building under consideration, exclusive of vent shafts, ~~shafts and with no openings,~~ interior or exterior courts, and the upper volume of multi-story spaces, without deduction for corridors, stairways, elevator shafts, ramps, closets, the thickness of interior walls, columns or other features. The floor area of a building, or portion thereof, not provided with surrounding exterior walls shall be the usable area under the horizontal projection of the roof or floor above. ~~The gross floor area shall not include shafts with no openings or interior courts.~~

#### **Reason:**

##### **BUILDING AREA:**

"Building area" was intended only for calculations involving allowable area. However, when the actual words are applied to "real" buildings, it becomes questionable. Is the current BUILDING AREA definition equivalent to the aggregate FLOOR AREA? No. FLOOR AREA can actually **exceed** the BUILDING AREA! How is that possible?

- BUILDING AREA can be bounded by exterior walls or fire walls
- FLOOR AREA is bounded by exterior walls only - not fire walls

Is it the intent to have a FLOOR AREA that is larger than the BUILDING AREA? If not, then the following should be considered:

- Floor area of a building should not cross fire walls
- It does not make sense that an entire building's area could be less than the same building's floor area
- The fire wall breaks the structure into more than one building
- See the definition's "of the building under consideration"
  - All calculations are per building, not per multi-building structure

Also, under a strict reading of the BUILDING AREA definition, and because the term is not tied to a "floor," we would need to count the "air" of

- The upper areas of an Atrium as BUILDING AREA
- The upper areas of a gymnasium as BUILDING AREA
- It includes grass, hedges, mulch beds, outside air, and water features - if under the projection of the floor or roof above

- An indoor 3-story mall could be 600,000 SF instead of the more accurate 400,000 SF
- Consider a 4-story building with a projecting roof
  - Not only would we have to count the grass and bushes, but the outside air above the bushes for 4 stories



But, when determining occupant loads, we do not count the upper interior "air" or outside air, bushes, grass, water, or mulch beds. That's part of the problem with the BUILDING AREA definition; it does not relate itself to the floor plate at all.



Another potential issue - Level 3 alterations of the VRC are tied to BUILDING AREA; therefore, it is imperative that this definition be coordinated and consistent with the intent of what is or is not actual BUILDING AREA.

Perhaps a better approach would be to relate BUILDING AREA to FLOOR AREA. Thus, the proposed new definitions. "Aggregate" would require adding all the GROSS FLOOR AREAS together to come up with a BUILDING AREA. Note the definition of GROSS FLOOR AREA includes a definition that is similar to the current BUILDING AREA definition, so the terms are not deleted, they are just relocated. It also addresses the issue regarding bushes, grass, water, and outside air for multiple stories. It also helps when defined terms use other defined words within their definition - which both of the proposed new definitions include.

### **GROSS FLOOR AREA:**

GROSS FLOOR AREA should be defined on a floor-by-floor basis - thus the need to add "per story" - not as a total BUILDING AREA - as it could currently be interpreted. The last sentence of the current definition was incorporated into the body of the "what it does not include." "Upper volume of multi-story spaces" was added to avoid adding the upper "air" to the GROSS FLOOR AREA (e.g., an atrium, upper "air" of a gymnasium, auditorium, or an interior mall). Although maybe implied, we believe it is better to clarify that elevator shafts are not deducted.

**Cost Impact:** Regarding BUILDING AREA: Construction costs **could be REDUCED** because the BUILDING AREA would no longer include outside air or inside upper air - that could otherwise confuse a contractor when bidding a project and seeing the escalated building area on the drawings.

Regarding GROSS FLOOR AREA: Construction costs **could be REDUCED** if it is interpreted similarly as the current BUILDING AREA definition - thus potentially inflating the GROSS FLOOR AREA which also could inflate the potential occupant load and thus means of egress, plumbing fixtures, and everything else that is based on occupant loads.

---

## **Workgroup Recommendation**

**Workgroup 2 Recommendation:** None

**Workgroup 2 Reason:** None

---

## **Board Decision**

None

**CB-202(2) cdpVA-15**

# CB-303.1.1 cdpVA-15

**Proponent :** Kenney Payne, Representing AIA-VA  
(kpayne@moseleyarchitects.com)

## 2015 International Building Code

**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 ~~not be permitted to be classified as Assembly Group B occupancies or as part of that occupancy:~~

1. A room or space used for assembly purposes with an *occupant load* of less than 50 persons and ~~accessory subordinate to another occupancy shall be classified as a Group B occupancy or as part of that occupancy.~~
2. A room or space used for assembly purposes that is less than 750 square feet (70 m<sup>2</sup>) in area and ~~accessory subordinate to another occupancy shall be classified as a Group B occupancy or as part of that occupancy.~~

**303.4 Assembly Group A-3.** Group A-3 occupancy includes assembly uses intended for worship, recreation or amusement and other assembly uses not classified elsewhere in Group A including, but not limited to:

Amusement arcades

Art galleries

Bowling alleys

Community halls

Concession spaces (with an occupant load of 10 or less and less than 750 square feet (70 m<sup>2</sup>))

Courtrooms

Dance halls (not including food or drink consumption)

Exhibition halls

Fieldhouse (with an occupant load of 50 or less or less than 750 square feet (70 m<sup>2</sup>))

Funeral parlors

Gymnasiums (without spectator seating)

Indoor *swimming pools* (without spectator seating) Indoor tennis courts (without spectator seating)

Lecture halls

Libraries

Museums

*Places of religious worship*

Pool and billiard parlors

Press box (with an occupant load of 10 or less and less than 750 square feet (70 m<sup>2</sup>))

Waiting areas in transportation terminals

**Reason: Regarding 303.1.1:**

The section is under the "Assembly" group, yet it is written as if it was an exception and requires one to classify such occupancies as 'B'. Doing so, could potentially require more plumbing fixtures compared to classifying such occupancies as 'A.' Why not allow the designer/owner some flexibility and allow classification as either an 'A' or 'B'? The 2009 IBC handled such spaces as an "exception," so the designer/owner had an option of whether to use the exception and classify such spaces as 'B' or keep them classified as 'A'.

**Regarding 303.1.2:**

The section is under the "Assembly" group, yet it is written as if it was an exception and requires one to classify such occupancies as 'B'. Doing so, would potentially require more plumbing fixtures compared to classifying such occupancies as 'A.'

It may also be conflicting. The charging paragraph says "shall not be classified as Assembly" yet both #1 and #2 allows the classification of such rooms or spaces as "part of that occupancy" - does the word "that" refer to 'A' or 'B'? If it could be interpreted ot mean 'A' then that appears to set up a conflict in the wording.

Why not allow the designer/owner some flexibility and allow classification as either an 'A' or 'B'? The 2009 IBC handled such spaces as an "exception," so the designer/owner had an option of whether to use the exception and classify such spaces as 'B' or keep them classified as 'A'.

The use of the term "accessory" oftentimes leads to confusion and/or inconsistent interpretations. "Accessory," to some, means the 10% rule. Per the Commentary, this is clearly not the case. However, the Commentary is not code. The use of the term "subordinate" is more appropriate and eliminates the possible confusion and application of the 10% rule.

*Subordinate: less important than someone or something else; placed in or occupying a lower class, rank, or position; treat or regard as of lesser importance than something else.*

**Regarding 303.4:**

Oftentimes, outdoor sports facilities (football, baseball, softball fields) include assembly-related spaces, such as concession spaces, fieldhouse (usually with toilet rooms, locker rooms, and/or storage), and press boxes. Are such spaces "Assembly" and if so, are they really A-5? Or, are such spaces "Business?" This code change takes the guess work out - at least for the smaller type spaces (low occupant loads and/or size of space).

What difference does it make? Plumbing fixture counts for one. 'B' requires more than 'A.'" Mixed occupancies. Why introduce mixed occupancies if everything could be considered as one occupancy?

This, in combination with the propsoed changes in 303.1.1 and 303.1.2 should help alleviate some of the confusion and allow the designer/owner greater flexibility - and get us back to hwo things were prior to the 2012 IBC.

**Cost Impact:** May actually REDUCE costs as they relate to the number of minimum plumbing fixtures that may otherwise be required if a space or small building were required to be classified as Group B in lieu of Group A.

---

## **Workgroup Recommendation**

**Workgroup 2 Recommendation:** None

**Workgroup 2 Reason:** None

---

## **Board Decision**

None

**CB-303.1.1 cdpVA-15**

# CB-304.1.1 cdpVA-15

**Proponent :** William King, Representing DBHDS Ad-Hoc Group  
(william.king@alexandriava.gov)

## 2012 Virginia Construction Code

**304.1.1 Day support and day treatment facilities** Day support and day treatment facilities licensed by Virginia Department of Behavioral Health & Development Services shall be classified as Group B occupancy when the following conditions are satisfied:

1. Participants who may require physical assistance from staff to respond to an emergency situation shall be located on the level of exit discharge.

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.

**Reason:** This proposal was created by a work-group including representatives from the Virginia Department of Behavioral Health & Development Services (DBHDS) to address concerns on classification that have arisen with the location of licensed Day Support and Day Treatment facilities. These facilities provide treatment for individuals within the community as opposed to larger centralized locations. This distributed network of facilities were established to make these resources more readily available to those that require them.

The attached .pdfs contain information on the use of the Day Support and Day Treatment facilities per their licensing and the checklist used by DBHDS for site visits.

Attachments:

<https://va.cdpassess.com/proposal/fileupload/get/65>

<https://va.cdpassess.com/proposal/fileupload/get/66>

**Cost Impact:** This proposal will not increase the cost of construction.

---

## Workgroup Recommendation

**Workgroup 2 Recommendation Recommendation:** Pending

**Workgroup 2 Reason:** Mr Dean concerned with technical requirements with in the use group but is not against the proposal. Modifications will be made to this proposal and will come back for next workgroup meeting.

---

## Board Decision

None

CB-304.1.1 cdpVA-15

# CB-901.3 cdpVA-15

**Proponent :** William Andrews (william.andrews@richmondgov.com)

## 2015 International Building Code

**901.3 Modifications.** Persons shall not remove or modify any *fire protection system* installed or maintained under the provisions of this code or the *International Fire Code* without approval by the *building official*. The building official shall notify the local fire official when approving installing, disabling, or removing a fire protection system.

**Reason:** Fire officials are responsible for applying the fire code on maintenance and periodic testing of the fire protection systems, plus local fire officials coordinate emergency responses to sites (including state). Local fire officials need to learn when a building official approve installing, disabling or removing fire alarms, sprinkler system, and other fire protection systems (including for renovation or demolition). The building official is the best source for properly authorizing substantial changes to fire protection systems, thus to notify local fire official. If code leaves responsibility on contractor and property owners, often their getting permits from the building official consider comply with code, resulting in fire official not notified. State and local building officials need to keep local fire official updated when approving substantial changes of fire protection systems within that fire official's emergency response area.

**Cost Impact:** No cost impact for construction. Minimal time and effort by building official's office to communicate information to the fire official.

---

## Workgroup Recommendation

**Workgroup 2 Recommendation Recommendation:** Pending

**Workgroup 2 Reason:** This will return with collaborative efforts, Jaunna will work with Mr Andrews to tweak.

**Workgroup 1 Recommendation Recommendation:** Pending

**Workgroup 1 Reason:** Needs work. Proponent to come back with revised language based on workgroup feedback.

---

## Board Decision

None

CB-901.3 cdpVA-15

---

# CB-1008.1.6 cdpVA-15

Proponent : William King (william.king@alexandriava.gov)

## 2012 Virginia Construction Code

### 1008.1.6 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 7 inches (178 mm). When 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).

### 1009.8 Stairway landings.

There shall be a floor or landing at the top and bottom of each *stairway*. The width of landings shall not be less than the width of *stairways* they serve. Every landing shall have a minimum width measured perpendicular to the direction of travel equal to the width of the *stairway*. Where the *stairway* has a straight run the depth need not exceed 48 inches (1219 mm). Doors opening onto a landing shall not reduce the landing to less than one-half the required width. When fully open, the door shall not project more than 7 inches (178 mm) into a landing. When *wheelchair spaces* are required on the *stairway* landing in accordance with Section [1007.6.1](#), the *wheelchair space* shall not be located in the required width of the landing and doors shall not swing over the *wheelchair spaces*.

~~**Exception:** *Aisle stairs* complying with Section [1028](#).~~

#### **Exceptions:**

1. *Aisle stairs* complying with Section [1028](#).

2. 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*, provide that a door does not swing over the *stairs*.

**Reason:** This new exception is designed to mimic the exception to IRC R311.7.6. This also coordinates with numerous exceptions contained within Chapter 10 that treat egress within individual dwelling units in a manner similar to that required by the IRC.

The modification to Section 1008.1.6, Landings is to address the same issue and address the broader issue to allow a door to swing over its own landing which currently would appear to be prohibited.

The intent of this section is to prevent encroachment into the required egress width in a manner similar to corridors, aisles, exit passageways, etc. The fundamental issue with the

current language though is that a door must inherently swing over its own landing which is at odds with the current language. This change would allow the door to swing over its own landing while preventing other doors from blocking the landing and/or keeping the door from opening to at least half of its required width.

**Cost Impact:** This will reduce the cost of construction.

---

## **Workgroup Recommendation**

**Workgroup 2 Recommendation:** None

**Workgroup 2 Reason:** None

---

## **Board Decision**

None

**CB-1008.1.6 cdpVA-15**

---

# CB-1023.5 cdpVA-15

**Proponent :** Kenney Payne, Representing AIA-VA  
(kpayne@moseleyarchitects.com)

## 2015 International Building Code

**1023.5 Penetrations.** Penetrations into or through *interior exit stairways* and *ramps* are prohibited ~~except for equipment and ductwork necessary for independent ventilation or pressurization, sprinkler piping, standpipes, electrical raceway for fire department communication systems and electrical raceway serving the *interior exit stairway* and *ramp* and terminating at a steel box not exceeding 16 square inches (0.010 m<sup>2</sup>).~~ Such.

**Exceptions:** The following penetrations shall be permitted provided such penetrations are protected in accordance with Section 714. ~~There;~~ however, there shall not be penetrations or communication openings, whether protected or not, between adjacent *interior exit stairways* and *ramps*:

1.

~~**Exception:** Membrane penetrations shall be permitted on the outside of the *interior exit stairway* and *ramp*. Such penetrations shall be protected in accordance with Section 714.3.2.~~

Membrane penetrations on the outside of the interior exit stairway and ramp.

2. Equipment and ductwork necessary for independent ventilation or pressurization.

3. Sprinkler piping.

4. Standpipes.

5. Electrical raceway for fire department communications systems.

6. Electrical raceway serving the interior exit stairway and ramp and terminating at a steel box not exceeding 16 square inches (0.010 m<sup>2</sup>).

7. Primary and secondary structural framing other than columns.

**Reason:** Generally, exceptions to exceptions are not a good idea ("are prohibited except" and then there is an "Exception" to the charging paragraph). Sentences that have more than a few commas (run on sentence) oftentimes require re-reading to make sure the meaning is understood and properly interpreted.

In such cases a list is oftentimes clearer and easier to understand – and in this case, the "exceptions" would not be exceptions to other exceptions. Numbers 1-6 are duplicated from the original charging paragraph and exception. The reference was changed to all of Section 714 (rather than just 714.3.2) to encompass other types of penetrations. #7 is a new provision.

Structural framing is allowed to penetrate other rated assemblies, including rated corridor walls, exit passageways, and other fire barriers and rated construction (e.g., those elements governed by Chapter 6). As long as the penetrations are properly fire-stopped and/or installed and tested as required by Section 714, the level of safety should be equivalent to that of an exit passageway, corridor, or shaft. Otherwise, each stairway enclosure would be its own "mini-building" with structural framing starting and stopping and begin duplicated within the enclosure as well as outside the enclosure.

**Cost Impact:** Allowing primary and secondary structural framing to penetrate such enclosures will result in COST SAVINGS because otherwise, the structure would need to be independent of each other and such enclosures would be required to be constructed almost like a fire wall is constructed.

---

## **Workgroup Recommendation**

**Workgroup 2 Recommendation:** None

**Workgroup 2 Reason:** None

---

## **Board Decision**

None

**CB-1023.5 cdpVA-15**

---

# CB-1407.10.4 cdpVA-15

**Proponent :** Kenney Payne, Representing AIA-VA  
(kpayne@moseleyarchitects.com)

## 2012 Virginia Construction Code

### 1407.10.4 Full-scale test.

The 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 Sections [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 where any of the following conditions are met:

1. In buildings equipped throughout with an automatic sprinkler system in accordance with Section [903.3.1.1](#).
2. Where materials are incorporated into the exterior MCM wall assembly that have not been tested in accordance with NFPA 285, sufficient data, such as ICC-ES reports or engineering judgments, if approved by the building official, shall be considered an acceptable alternative.

### 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 Sections [603](#), [803](#), [806](#) or [1406](#) differ from assembly to assembly or within an assembly, multiple tests shall not be required.

- **Exception:** Exterior wall assemblies are not required to be tested in accordance with, and comply with, acceptance criteria of NFPA 285 where any of the following conditions are met:
  1. One-story buildings complying with Section [2603.4.1.4](#).
  2. Wall assemblies where the foam plastic insulation is covered on each face by a minimum of 1-inch (25 mm) thickness of masonry or concrete complying with either of the following:
    - 2.1. There is no air space between the insulation and the concrete or masonry; or
    - 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](#).
  4. Where materials are incorporated into the exterior MCM wall assembly that have not been tested in accordance with NFPA 285, sufficient data, such as ICC-ES reports or engineering judgments, if approved by

the building official, shall be considered an acceptable alternative.

**Reason:** The added language is akin to the language used in IBC 703.3, allowing other methods and procedures to demonstrate compliance. The difference between 703.3 and these sections is that NFPA 285 has nothing to do with fire resistance - so, a simple reference to 703.3 would not be appropriate. Thus, the added language codifies - but only if approved by the building official - allowing the owner, RDP, and/or contractor to submit data such as ICC-ES reports or engineering judgments, indicating a particular exterior wall assembly should be compliant without the need to do multiple tests or even a single test depending on whether a certain material or combination of materials have been tested or not.

This could avoid the need for a code modification every time a different material is proposed in an otherwise already approved or tested assembly and also clarifies possible alternatives where a building official might otherwise consider only tested components and materials as being acceptable.

**Cost Impact:** Could result in potential COST SAVINGS. If such data was *not* allowed by the AHJ, then full-scale assembly tests would be required - at a cost of approximately \$35-100,000 per assembly per test (variation in cost depend on the type and complexity of the assembly) - and a potential increase in the construction schedule of 6 months or more (the average time delay to have an NFPA 285 test conducted). These potential increased costs assume each assembly would pass the first time. If any assembly fails, the costs and time would increase as well.

However, ICC-ES reports do not cost the owner anything or cost the contractor any time; and engineering judgments costs approximately \$3-5,000 with no impact on the construction schedule. So, both of these alternatives would result in both REDUCED COSTS and no increase in the construction schedule.

---

## Workgroup Recommendation

**Workgroup 2 Recommendation:** None

**Workgroup 2 Reason:** None

---

## Board Decision

None

**CB-1407.10.4 cdpVA-15**

---

# CB-2308.4.1.1 cdpVA-15

**Proponent :** Matthew Hunter, Representing American Wood Council (mhunter@awc.org); John Catlett, Representing American Wood Council (jcatlett@awc.org)

## 2015 International Building Code

TABLE 2308.4.1.1(1)

HEADER AND GIRDER SPANS<sup>a, b</sup> FOR EXTERIOR BEARING WALLS (Maximum spans for Douglas Fir-Larch, Hem-Fir, Southern Pine and Spruce-Pine-Fir<sup>b</sup> and required number of jack studs)

GIRDERS AND HEADERS SUPPORTING	SIZE	GROUND SNOW LOAD (psf) <sup>e</sup>																	
		30						50						70					
		Building width <sup>c</sup> (feet)																	
		2012		2024		36		2012		2024		36		12		24		36	
Span <sup>f</sup>	NJ <sup>d</sup>	Span <sup>f</sup>	NJ <sup>d</sup>	Span <sup>f</sup>	NJ <sup>d</sup>	Span <sup>f</sup>	NJ <sup>d</sup>	Span <sup>f</sup>	NJ <sup>d</sup>	Span <sup>f</sup>	NJ <sup>d</sup>	Span <sup>f</sup>	NJ <sup>d</sup>	Span <sup>f</sup>	NJ <sup>d</sup>	Span <sup>f</sup>	NJ <sup>d</sup>		
Roof and ceiling	1-2x6	4-0	1	3-1	2	2-7	2	3-5	1	2-8	2	2-3	2	3-0	2	2-4	2	2-0	2
	1-2x8	5-1	2	3-11	2	3-3	2	4-4	2	3-4	2	2-10	2	3-10	2	3-0	2	2-6	3
	1-2x10	6-0	2	4-8	2	3-11	2	5-2	2	4-0	2	3-4	2	4-7	2	3-6	3	3-0	3
	1-2x12	7-1	2	5-5	2	4-7	3	6-1	2	4-8	3	3-11	3	5-5	2	4-2	3	3-6	3
	2-2x4	3-64-0	1	3-23-1	1	2-102-7	1	3-23-5	1	2-92-7	1	2-62-2	1	3-0	1	2-4	1	2-0	1
	2-2x6	5-56-0	1	4-84-7	1	4-23-10	1	4-85-1	1	4-13-11	1	3-83-3	2	4-6	1	3-6	2	2-11	2
	2-2x8	6-107-7	1	5-115-9	21	5-44-10	2	5-116-5	21	5-25-0	2	4-74-2	2	5-9	1	4-5	2	3-9	2
	2-2x10	8-59-0	21	7-36-10	2	6-65-9	2	7-37-8	2	6-35-11	2	5-74-11	2	6-9	2	5-3	2	4-5	2
	2-2x12	9-910-7	2	8-58-1	2	7-66-10	2	8-59-0	2	7-36-11	2	6-65-10	2	8-0	2	6-2	2	5-2	3
	3-2x8	8-49-5	1	7-57-3	1	6-86-1	1	7-58-1	1	6-56-3	21	5-95-3	2	7-2	1	5-6	2	4-8	2
	3-2x10	10-611-3	1	9-18-7	21	8-27-3	2	9-19-7	21	7-107-4	2	7-06-2	2	8-6	1	6-7	2	5-6	2
	3-2x12	12-213-2	21	10-710-1	2	9-58-6	2	10-711-3	2	9-28-8	2	8-27-4	2	10-0	2	7-9	2	6-6	2
	4-2x8	9-210-11	1	8-4	1	7-87-0	1	8-49-4	1	7-57-2	1	6-86-0	1	8-3	1	6-4	1	5-4	2
	4-2x10	11-812-11	1	10-69-11	1	9-58-4	21	10-611-1	1	9-18-6	21	8-27-2	2	9-10	1	7-7	2	6-4	2
	4-2x12	14-115-3	1	12-211-8	21	10-149-10	2	12-213-0	21	10-710-0	2	9-58-5	2	11-7	1	8-11	2	7-6	2
	1-2x6	3-3	1	2-7	2	2-2	2	3-0	2	2-4	2	2-0	2	2-9	2	2-2	2	1-10	2
	1-2x8	4-1	2	3-3	2	2-9	2	3-9	2	3-0	2	2-6	3	3-6	2	2-9	2	2-4	3
	1-2x10	4-11	2	3-10	2	3-3	3	4-6	2	3-6	3	3-0	3	4-1	2	3-3	3	2-9	3
	1-2x12	5-9	2	4-6	3	3-10	3	5-3	2	4-2	3	3-6	3	4-10	3	3-10	3	3-3	4

Roof, ceiling and one center-bearing floor	2-2x4	<del>3-13-3</del>	1	<del>2-92-6</del>	1	<del>2-52-2</del>	1	<del>2-93-0</del>	1	<del>2-52-4</del>	1	<del>2-22-0</del>	1	<del>2-8</del>	1	<del>2-2</del>	1	<del>1-10</del>	1
	2-2x6	<del>4-64-10</del>	1	<del>4-03-9</del>	1	<del>3-73-3</del>	2	<del>4-14-5</del>	1	<del>3-73-6</del>	2	<del>3-33-0</del>	2	<del>4-1</del>	1	<del>3-3</del>	2	<del>2-9</del>	2
	2-2x8	<del>5-96-1</del>	21	<del>5-04-10</del>	2	<del>4-64-1</del>	2	<del>5-25-7</del>	2	<del>4-64-5</del>	2	<del>4-13-9</del>	2	<del>5-2</del>	2	<del>4-1</del>	2	<del>3-6</del>	2
	2-2x10	<del>7-07-3</del>	2	<del>6-25-8</del>	2	<del>5-64-10</del>	2	<del>6-46-8</del>	2	<del>5-65-3</del>	2	<del>5-04-5</del>	2	<del>6-1</del>	2	<del>4-10</del>	2	<del>4-1</del>	2
	2-2x12	<del>8-18-6</del>	2	<del>7-16-8</del>	2	<del>6-55-8</del>	2	<del>7-47-10</del>	2	<del>6-56-2</del>	2	<del>5-95-3</del>	3	<del>7-2</del>	2	<del>5-8</del>	2	<del>4-10</del>	3
	3-2x8	<del>7-27-8</del>	1	<del>6-36-0</del>	21	<del>5-85-1</del>	2	<del>6-57-0</del>	21	<del>5-85-6</del>	2	<del>5-14-8</del>	2	<del>6-5</del>	1	<del>5-1</del>	2	<del>4-4</del>	2
	3-2x10	<del>8-99-1</del>	21	<del>7-87-2</del>	2	<del>6-116-1</del>	2	<del>7-118-4</del>	21	<del>6-116-7</del>	2	<del>6-35-7</del>	2	<del>7-8</del>	2	<del>6-1</del>	2	<del>5-2</del>	2
	3-2x12	<del>10-210-8</del>	2	<del>8-118-5</del>	2	<del>8-07-2</del>	2	<del>9-29-10</del>	2	<del>8-07-8</del>	2	<del>7-36-7</del>	2	<del>9-0</del>	2	<del>7-1</del>	2	<del>6-1</del>	2
	4-2x8	<del>8-18-10</del>	1	<del>7-36-11</del>	1	<del>6-75-11</del>	1	<del>7-58-1</del>	1	<del>6-66-4</del>	1	<del>5-115-5</del>	2	<del>7-5</del>	1	<del>5-11</del>	1	<del>5-0</del>	2
	4-2x10	<del>10-410-6</del>	1	<del>8-108-3</del>	2	<del>8-07-0</del>	2	<del>9-19-8</del>	21	<del>8-07-7</del>	2	<del>7-26-5</del>	2	<del>8-10</del>	1	<del>7-0</del>	2	<del>6-0</del>	2
	4-2x12	<del>11-912-4</del>	21	<del>10-39-8</del>	2	<del>9-38-3</del>	2	<del>10-711-4</del>	2	<del>9-38-11</del>	2	<del>8-47-7</del>	2	<del>10-4</del>	2	<del>8-3</del>	2	<del>7-0</del>	2
Roof, ceiling and one clear span floor	<del>1-2x6</del>	<del>2-11</del>	2	<del>2-3</del>	2	<del>1-11</del>	2	<del>2-9</del>	2	<del>2-1</del>	2	<del>1-9</del>	2	<del>2-7</del>	2	<del>2-0</del>	2	<del>1-8</del>	2
	<del>1-2x8</del>	<del>3-9</del>	2	<del>2-10</del>	2	<del>2-5</del>	3	<del>3-6</del>	2	<del>2-8</del>	2	<del>2-3</del>	3	<del>3-3</del>	2	<del>2-6</del>	3	<del>2-2</del>	3
	<del>1-2x10</del>	<del>4-5</del>	2	<del>3-5</del>	3	<del>2-10</del>	3	<del>4-2</del>	2	<del>3-2</del>	3	<del>2-8</del>	3	<del>3-11</del>	2	<del>3-0</del>	3	<del>2-6</del>	3
	<del>1-2x12</del>	<del>5-2</del>	2	<del>4-0</del>	3	<del>3-4</del>	3	<del>4-10</del>	3	<del>3-9</del>	3	<del>3-2</del>	4	<del>4-7</del>	3	<del>3-6</del>	3	<del>3-0</del>	4
	2-2x4	<del>2-82-11</del>	1	<del>2-42-3</del>	1	<del>2-11-10</del>	1	<del>2-72-9</del>	1	<del>2-32-1</del>	1	<del>2-01-9</del>	1	<del>2-7</del>	1	<del>2-0</del>	1	<del>1-8</del>	1
	2-2x6	<del>3-114-4</del>	1	<del>3-53-4</del>	2	<del>3-02-10</del>	2	<del>3-104-1</del>	21	<del>3-43-2</del>	2	<del>3-02-8</del>	2	<del>3-10</del>	1	<del>3-0</del>	2	<del>2-6</del>	2
	2-2x8	<del>5-05-6</del>	2	<del>4-44-3</del>	2	<del>3-103-7</del>	2	<del>4-105-2</del>	2	<del>4-24-0</del>	2	<del>3-93-4</del>	2	<del>4-10</del>	2	<del>3-9</del>	2	<del>3-2</del>	2
	2-2x10	<del>6-16-7</del>	2	<del>5-35-0</del>	2	<del>4-84-2</del>	2	<del>5-116-1</del>	2	<del>5-14-9</del>	2	<del>4-74-0</del>	32	<del>5-9</del>	2	<del>4-5</del>	2	<del>3-9</del>	3
	2-2x12	<del>7-17-9</del>	2	<del>6-15-11</del>	32	<del>5-54-11</del>	3	<del>6-107-2</del>	2	<del>5-115-7</del>	32	<del>5-44-8</del>	3	<del>6-9</del>	2	<del>5-3</del>	3	<del>4-5</del>	3
	3-2x8	<del>6-36-11</del>	21	<del>5-55-3</del>	2	<del>4-104-5</del>	2	<del>6-16-5</del>	21	<del>5-35-0</del>	2	<del>4-84-2</del>	2	<del>6-1</del>	1	<del>4-8</del>	2	<del>4-0</del>	2
	3-2x10	<del>7-78-3</del>	2	<del>6-76-3</del>	2	<del>5-115-3</del>	2	<del>7-57-8</del>	2	<del>6-55-11</del>	2	<del>5-95-0</del>	2	<del>7-3</del>	2	<del>5-7</del>	2	<del>4-8</del>	2
	3-2x12	<del>8-109-8</del>	2	<del>7-87-5</del>	2	<del>6-106-2</del>	2	<del>8-79-0</del>	2	<del>7-57-0</del>	2	<del>6-85-10</del>	2	<del>8-6</del>	2	<del>6-7</del>	2	<del>5-6</del>	3
	4-2x8	<del>7-28-0</del>	1	<del>6-36-1</del>	21	<del>5-75-1</del>	2	<del>7-07-5</del>	1	<del>6-15-9</del>	2	<del>5-54-10</del>	2	<del>7-0</del>	1	<del>5-5</del>	2	<del>4-7</del>	2
4-2x10	<del>8-99-6</del>	21	<del>7-77-3</del>	2	<del>6-106-1</del>	2	<del>8-78-10</del>	21	<del>7-56-10</del>	2	<del>6-75-9</del>	2	<del>8-4</del>	1	<del>6-5</del>	2	<del>5-5</del>	2	
4-2x12	<del>10-211-2</del>	2	<del>8-108-6</del>	2	<del>7-117-2</del>	2	<del>9-1110-5</del>	2	<del>8-78-0</del>	2	<del>7-86-9</del>	2	<del>9-10</del>	2	<del>7-7</del>	2	<del>6-5</del>	2	

GROUND SNOW LOAD (psf)<sup>e</sup>

GIRDERS AND HEADERS SUPPORTING	SIZE	30						50						70					
		Building width <sup>C</sup> (feet)																	
		2012		2024		36		2012		2024		36		12		24		36	
		Span <sup>f</sup>	NJ <sup>d</sup>	Span <sup>f</sup>	NJ <sup>d</sup>	Span <sup>f</sup>	NJ <sup>d</sup>	Span <sup>f</sup>	NJ <sup>d</sup>	Span <sup>f</sup>	NJ <sup>d</sup>	Span <sup>f</sup>	NJ <sup>d</sup>	Span <sup>f</sup>	NJ <sup>d</sup>	Span <sup>f</sup>	NJ <sup>d</sup>	Span <sup>f</sup>	NJ <sup>d</sup>
Roof, ceiling and two center-bearing floors	1-2x6	2-8	2	2-1	2	1-10	2	2-7	2	2-0	2	1-9	2	2-5	2	1-11	2	1-8	2
	1-2x8	3-5	2	2-8	2	2-4	3	3-3	2	2-7	2	2-2	3	3-1	2	2-5	3	2-1	3
	1-2x10	4-0	2	3-2	3	2-9	3	3-10	2	3-1	3	2-7	3	3-8	2	2-11	3	2-5	3
	1-2x12	4-9	3	3-9	3	3-2	4	4-6	3	3-7	3	3-1	4	4-3	3	3-5	3	2-11	4
	2-2x4	2-72-8	1	2-32-1	1	2-01-9	1	2-6	1	2-22-0	1	4-111-8	1	2-5	1	1-11	1	1-7	1
	2-2x6	3-94-0	21	3-33-2	2	2-112-8	2	3-83-9	21	3-23-0	2	2-102-7	2	3-7	1	2-10	2	2-5	2
	2-2x8	4-95-0	2	4-24-0	2	3-93-5	2	4-74-10	2	4-03-10	2	3-83-3	2	4-7	2	3-7	2	3-1	2
	2-2x10	5-96-0	2	5-14-9	2	4-74-0	32	5-8	2	4-114-6	2	4-53-10	3	5-5	2	4-3	2	3-8	3
	2-2x12	6-87-0	2	5-105-7	32	5-34-9	3	6-66-8	2	5-95-4	3	5-24-6	3	6-4	2	5-0	3	4-3	3
	3-2x8	5-116-4	21	5-25-0	2	4-84-3	2	5-96-0	21	5-14-9	2	4-74-1	2	5-8	2	4-6	2	3-10	2
	3-2x10	7-37-6	2	6-45-11	2	5-85-1	2	7-1	2	6-25-8	2	5-74-10	2	6-9	2	5-4	2	4-7	2
	3-2x12	8-58-10	2	7-47-0	2	6-75-11	2	8-28-5	2	7-26-8	2	6-55-8	3	8-0	2	6-4	2	5-4	3
	4-2x8	6-107-3	1	6-05-9	21	5-54-11	2	6-85-11	1	5-105-6	2	5-34-8	2	6-7	1	5-2	2	4-5	2
4-2x10	8-48-8	21	7-46-10	2	6-75-10	2	8-28-3	2	7-26-6	2	6-55-7	2	7-10	2	6-2	2	5-3	2	
4-2x12	9-810-2	2	8-68-1	2	7-86-10	2	9-59-8	2	8-37-8	2	7-56-7	2	9-2	2	7-3	2	6-2	2	
Roof, ceiling, and two clear-span floors	1-2x6	2-3	2	1-9	2	1-5	2	2-3	2	1-9	2	1-5	3	2-2	2	1-8	2	1-5	3
	1-2x8	2-10	2	2-2	3	1-10	3	2-10	2	2-2	3	1-10	3	2-9	2	2-1	3	1-10	3
	1-2x10	3-4	2	2-7	3	2-2	3	3-4	3	2-7	3	2-2	4	3-3	3	2-6	3	2-2	4
	1-2x12	4-0	3	3-0	3	2-7	4	4-0	3	3-0	4	2-7	4	3-10	3	3-0	4	2-6	4
	2-2x4	2-12-3	1	1-8	1	1-61-4	21	2-02-3	1	1-8	1	4-51-4	21	2-2	1	1-8	1	1-4	2
	2-2x6	3-13-4	21	2-82-6	2	2-42-2	2	3-03-4	2	2-72-6	2	2-32-2	2	3-3	2	2-6	2	2-1	2
	2-2x8	3-104-3	2	3-43-3	2	3-02-8	32	3-104-3	2	3-43-3	2	2-112-8	32	4-1	2	3-2	2	2-8	3
	2-2x10	4-95-0	2	4-13-10	32	3-83-2	3	4-85-0	2	4-03-10	32	3-73-2	32	4-10	2	3-9	3	3-2	3
	2-2x12	5-65-11	32	4-94-6	3	4-33-9	3	5-55-11	32	4-84-6	3	4-23-9	3	5-8	2	4-5	3	3-9	3
	3-2x8	4-105-3	21	4-24-0	2	3-93-5	2	4-95-3	2	4-14-0	2	3-83-5	2	5-1	2	3-11	2	3-4	2
	3-2x10	5-116-3	2	5-14-9	2	4-74-0	32	5-106-3	2	5-04-9	2	4-64-0	32	6-1	2	4-8	2	4-0	3

3- 2x12	<del>6-107- 5</del>	2	<del>5-115- 8</del>	<del>32</del>	<del>5-44- 9</del>	3	<del>6-97- 5</del>	2	<del>5-105- 8</del>	<del>32</del>	<del>5-34- 9</del>	3	<del>7-2</del>	<del>2</del>	<del>5-6</del>	<del>3</del>	<del>4-8</del>	<del>3</del>
4-2x8	<del>5-76-1</del>	<del>21</del>	<del>4-104- 8</del>	2	<del>4-43- 11</del>	2	<del>5-66- 1</del>	<del>21</del>	<del>4-94- 8</del>	2	<del>4-33- 11</del>	2	<del>5-11</del>	1	<del>4-7</del>	2	<del>3-11</del>	<del>2</del>
4- 2x10	<del>6-107- 3</del>	2	<del>5-115- 6</del>	2	<del>5-34- 8</del>	2	<del>6-97- 3</del>	2	<del>5-105- 6</del>	2	<del>5-24- 8</del>	2	<del>7-0</del>	<del>2</del>	<del>5-5</del>	<del>2</del>	<del>4-7</del>	<del>2</del>
4- 2x12	<del>7-118- 6</del>	2	<del>6-106- 6</del>	2	<del>6-25- 6</del>	<del>32</del>	<del>7-98- 6</del>	2	<del>6-96- 6</del>	2	<del>6-05- 6</del>	<del>32</del>	<del>8-3</del>	<del>2</del>	<del>6-4</del>	<del>2</del>	<del>5-4</del>	<del>3</del>

For SI: 1 inch = 25.4 mm, 1 pound per square foot = 0.0479 kPa.

- Spans are given in feet and inches.
- Spans are based on minimum design properties for No. 2 grade lumber of Douglas Fir-Larch, Hem-Fir, Southern Pine, and Spruce-Pine Fir. ~~No. 1 or better grade lumber shall be used for Southern Pine.~~
- Building width is measured perpendicular to the ridge. For widths between those shown, spans are permitted to be interpolated.
- NJ - Number of jack studs required to support each end. Where the number of required jack studs equals one, the header is permitted to be supported by an approved framing anchor attached to the full-height wall stud and to the header.
- Use 30 psf ground snow load for cases in which ground snow load is less than 30 psf and the roof live load is equal to or less than 20 psf.
- Spans are calculated assuming the top of the header or girder is laterally braced by perpendicular framing. Where the top of the header or girder is not laterally braced (e.g. cripple studs bearing on the header), tabulated spans for headers consisting of 2x8, 2x10, or 2x12 sizes shall be multiplied by 0.70 or the header shall be designed.

TABLE 2308.4.1.1(2)

**HEADER AND GIRDER SPANS<sup>a, b</sup> FOR INTERIOR BEARING WALLS (Maximum spans for Douglas Fir-Larch, Hem-Fir, Southern Pine and Spruce-Pine-Fir<sup>b</sup> and required number of jack studs)**

HEADERS AND GIRDERS SUPPORTING	SIZE	BUILDING Width <sup>c</sup> (feet)					
		2012		2824		36	
		Span <sup>e</sup>	NJ <sup>d</sup>	Span <sup>e</sup>	NJ <sup>d</sup>	Span <sup>e</sup>	NJ <sup>d</sup>
One floor only	2-2 x 4	<del>3-14-1</del>	1	<del>2-82-10</del>	1	<del>2-52-4</del>	1
	2-2 x 6	<del>4-66-1</del>	1	<del>3-114-4</del>	1	3-6	1
	2-2 x 8	<del>5-97-9</del>	1	<del>5-05-5</del>	<del>21</del>	4-5	2
	2-2 x 10	<del>7-09-2</del>	<del>21</del>	<del>6-16-6</del>	2	<del>5-55-3</del>	2
	2-2 x 12	<del>8-110-9</del>	<del>21</del>	<del>7-07-7</del>	2	6-3	2
	3-2 x 8	<del>7-29-8</del>	1	<del>6-36-10</del>	1	5-7	<del>21</del>
	3-2 x 10	<del>8-911-5</del>	1	<del>7-78-1</del>	<del>21</del>	<del>6-96-7</del>	2
	3-2 x 12	<del>10-213-6</del>	<del>21</del>	<del>8-109-6</del>	2	<del>7-107-9</del>	2
	4-2 x 8	<del>9-011-2</del>	1	<del>7-87-11</del>	1	<del>6-96-5</del>	1
	4-2 x 10	<del>10-113-3</del>	1	<del>8-99-4</del>	1	<del>7-107-8</del>	<del>21</del>
	4-2 x 12	<del>11-915-7</del>	1	<del>10-211-0</del>	<del>21</del>	<del>9-19-0</del>	2
Two floors	2-2 x 4	<del>2-22-7</del>	1	<del>1-101-11</del>	1	1-7	1
	2-2 x 6	<del>3-23-11</del>	<del>21</del>	<del>2-92-11</del>	2	2-5	2
	2-2 x 8	<del>4-15-0</del>	<del>21</del>	<del>3-63-8</del>	2	<del>3-23-1</del>	2
	2-2 x 10	<del>4-115-11</del>	2	<del>4-34-4</del>	2	<del>3-103-7</del>	<del>32</del>
	2-2 x 12	<del>5-96-11</del>	2	<del>5-05-2</del>	<del>32</del>	<del>4-54-3</del>	3
	3-2 x 8	<del>5-16-3</del>	<del>21</del>	<del>4-54-7</del>	2	<del>3-113-10</del>	2
	3-2 x 10	<del>6-27-5</del>	<del>21</del>	<del>5-45-6</del>	2	<del>4-104-6</del>	2
	3-2 x 12	<del>7-28-8</del>	2	<del>6-36-5</del>	2	<del>5-75-4</del>	<del>32</del>
	4-2 x 8	<del>6-17-2</del>	1	<del>5-35-4</del>	<del>21</del>	<del>4-84-5</del>	2
4-2 x 10	<del>7-28-6</del>	<del>21</del>	<del>6-26-4</del>	2	<del>5-65-3</del>	2	

	4-2 × 12	<del>8-410-1</del>	<del>21</del>	<del>7-27-5</del>	2	<del>6-56-2</del>	2
--	----------	--------------------	---------------	-------------------	---	-------------------	---

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm.

- a. Spans are given in feet and inches.
- b. Spans are based on minimum design properties for No. 2 grade lumber of Douglas Fir-Larch, Hem-Fir, Southern Pine, and Spruce-Pine Fir. ~~No. 1 or better grade lumber shall be used for Southern Pine.~~
- c. Building width is measured perpendicular to the ridge. For widths between those shown, spans are permitted to be interpolated.
- d. NJ - Number of jack studs required to support each end. Where the number of required jack studs equals one, the header is permitted to be supported by an approved framing anchor attached to the full-height wall stud and to the header.
- e. Spans are calculated assuming the top of the header or girder is laterally braced by perpendicular framing. Where the top of the header or girder is not laterally braced (e.g. cripple studs bearing on the header), tabulated spans for headers consisting of 2x8, 2x10, or 2x12 sizes shall be multiplied by 0.70 or the header shall be designed.

**Reason:** The update of Table 2308.4.1.1(1) Girder Spans and Header Spans for Exterior Bearing Walls is proposed. Updated spans address use of Southern Pine No. 2 in lieu of Southern Pine No. 1. Footnote "f" is added to clarify that header spans are based on laterally braced assumption such as when the header is raised. For dropped headers consisting of 2x8, 2x10, or 2x12 sizes that are not laterally braced, a factor of 0.7 can be applied to determine the spans or alternatively the header or girder can be designed to include any adjustment for potential buckling. Laterally braced (raised) and not laterally braced (dropped) header conditions and building widths for which header spans are tabulated represent the same conditions used to develop header span tables in the Wood Frame Construction Manual (WFCM).

The update of Table 2308.4.1.1(2) Girder Spans and Header Spans for Interior Bearing Walls is proposed. Updated spans address use of Southern Pine No. 2 in lieu of Southern Pine No. 1. Footnote "e" is added to clarify that header spans are based on laterally braced assumption such as when the header is raised. For dropped headers consisting of 2x8, 2x10, or 2x12 sizes that are not laterally braced, a factor of 0.7 can be applied to determine the spans or alternatively the header or girder can be designed to include any adjustment for potential buckling. Laterally braced (raised) and not laterally braced (dropped) header conditions and building widths for which header spans are tabulated represent the same conditions used to develop header span tables in the Wood Frame Construction Manual (WFCM).

**Cost Impact:** Increased cost may be associated with reduced spans that result from the not laterally braced condition and application of footnote f (in Table 2308.4.1.1(1)) or e (in Table 2308.4.1.1(2)). Due to smaller building width column (12'), permissible use of Southern Pine No. 2, and the laterally braced assumption for tabulated spans, there are also cases where this change will not increase the cost of construction and may reduce the cost of construction.

## Workgroup Recommendation

**Workgroup 2 Recommendation:** None

**Workgroup 2 Reason:** None

**Workgroup 3 Recommendation:** None

**Workgroup 3 Reason:** None

## Board Decision

None

CB-2308.4.1.1 cdpVA-15

# CR-R602.7 cdpVA-15

**Proponent :** Matthew Hunter, Representing American Wood Council (mhunter@awc.org); John Catlett, Representing American Wood Council (jcatlett@awc.org)

## 2015 International Residential Code

TABLE R602.7(1)

GIRDER SPANS<sup>a</sup> AND HEADER SPANS<sup>a</sup> FOR EXTERIOR BEARING WALLS (Maximum spans for Douglas fir-larch, hem-fir, southern pine and spruce-pine-fir<sup>b</sup> and required number of jack studs)

GIRDERS AND HEADERS SUPPORTING	SIZE	GROUND SNOW LOAD (psf) <sup>e</sup>																	
		30						50						70					
		Building width <sup>c</sup> (feet)																	
		2012		2024		36		2012		2024		36		2012		2024		36	
		Span <sup>f</sup>	NJ <sup>d</sup>	Span <sup>f</sup>	NJ <sup>d</sup>	Span <sup>f</sup>	NJ <sup>d</sup>	Span <sup>f</sup>	NJ <sup>d</sup>	Span <sup>f</sup>	NJ <sup>d</sup>	Span <sup>f</sup>	NJ <sup>d</sup>	Span <sup>f</sup>	NJ <sup>d</sup>	Span <sup>f</sup>	NJ <sup>d</sup>	Span <sup>f</sup>	NJ <sup>d</sup>
Roof and ceiling	1-2x6	4-0	1	3-1	2	2-7	2	3-5	1	2-8	2	2-3	2	3-0	2	2-4	2	2-0	2
	1-2x8	4-6-1	4-2	<del>3-10-3-11</del>	4-2	3-5-3-3	4-2	3-9-4-4	4-2	3-2-3-4	4-2	2-10	2	<del>3-10</del>	-2	<del>3-0</del>	-2	<del>2-6</del>	-3
	1-2x10	5-8-0	4-2	4-1-1-8	4-2	4-4-3-11	4-2	4-9-5-2	4-2	4-1-4-0	4-2	3-7-3-4	2	<del>4-7</del>	-2	<del>3-6</del>	-3	<del>3-0</del>	-3
	1-2x12	6-1-1-7-1	4-2	5-1-1-5-5	2	5-3-4-7	2-3	5-9-6-1	2	4-8	2-3	3-8-3-11	2-3	<del>5-5</del>	-2	<del>4-2</del>	-3	<del>3-6</del>	-3
	2-2x4	3-6-4-0	1	3-2-3-1	1	2-1-0-2-7	1	3-2-3-5	1	2-9-2-7	1	2-6-2-2	1	2-1-0-3-0	1	2-6-2-4	1	2-3-2-0	1
	2-2x6	5-5-6-0	1	4-8-4-7	1	4-2-3-10	1	4-8-5-1	1	4-1-3-11	1	3-8-3-3	2	4-2-4-6	1	3-8-3-6	2	3-3-2-11	2
	2-2x8	6-1-0-7-7	1	5-1-1-5-9	2-1	5-4-1-10	2	5-1-1-6-5	2-1	5-2-5-0	2	4-7-4-2	2	5-4-5-9	2-1	4-7-4-5	2	4-1-3-9	2
	2-2x10	8-5-9-0	2-1	7-3-6-10	2	6-6-5-9	2	7-3-7-8	2	6-3-5-11	2	5-7-4-11	2	6-6-6-9	2	5-7-5-3	2	5-0-4-5	2
	2-2x12	9-9-10-7	2	8-5-8-1	2	7-6-6-10	2	8-5-9-0	2	7-3-6-11	2	6-6-5-10	2	7-6-8-0	2	6-6-6-2	2	5-1-0-5-2	3
	3-2x8	8-4-9-5	1	7-5-7-3	1	6-8-6-1	1	7-5-8-1	1	6-5-6-3	2-1	5-9-5-3	2	6-8-7-2	1	5-9-5-6	2	5-2-4-8	2
	3-2x10	10-6-11-3	1	9-1-8-7	2-1	8-2-7-3	2	9-1-9-7	2-1	7-1-0-7-4	2	7-0-6-2	2	8-2-8-6	2-1	7-0-6-7	2	6-4-5-6	2
	3-2x12	12-2-13-2	2-1	10-7-10-1	2	9-5-8-6	2	10-7-11-3	2	9-2-8-8	2	8-2-7-4	2	9-5-10-0	2	8-2-7-9	2	7-4-6-6	2
	4-2x8	9-2-10-11	1	8-4	1	7-8-7-0	1	8-4-9-4	1	7-5-7-2	1	6-8-6-0	1	7-8-8-3	1	6-8-6-4	1	5-1-1-5-4	2
	4-2x10	11-8-12-11	1	10-6-9-11	1	9-5-8-4	2-1	10-6-11-1	1	9-1-8-6	2-1	8-2-7-2	2	9-5-9-10	2-1	8-2-7-7	2	7-3-6-4	2
	4-2x12	14-1-1-5-3	1	12-2-1-1-8	2-1	10-1-1-9-10	2	12-2-1-3-0	2-1	10-7-10-0	2	9-5-8-5	2	11-1-1-7	2-1	9-5-8-11	2	8-5-7-6	2
		1-2x6	3-3	1	2-7	2	2-2	2	3-0	2	2-4	2	2-0	2	<del>2-9</del>	-2	<del>2-2</del>	-2	<del>1-10</del>
1-2x8		3-1-1-4-1	4-2	3-5-3-3	4-2	3-0-2-9	4-2	3-7-3-9	4-2	3-0	2	2-8-2-6	2-3	<del>3-6</del>	-2	<del>2-9</del>	-2	<del>2-4</del>	-3
1-2x10		5-0-4-1-1	2	4-4-3-10	2	3-1-0-3-3	2-3	4-6	2	3-1-1-3-6	2-3	3-4-3-0	2-3	<del>4-1</del>	-2	<del>3-3</del>	-3	<del>2-9</del>	-3
1-						4-2-3-								<del>4-</del>		<del>3-</del>			

Roof, ceiling and one center-bearing floor	2x12	<u>5-105-9</u>	2	<u>4-94-6</u>	23	<u>10</u>	23	<u>5-55-3</u>	2	4-2	23	<u>3-43-6</u>	23	<u>10</u>	-3	<u>10</u>	-3	<u>-3-3</u>	-4
	2-2x4	<u>3-13-3</u>	1	<u>2-92-6</u>	1	<u>2-52-2</u>	1	<u>2-93-0</u>	1	<u>2-52-4</u>	1	<u>2-22-0</u>	1	<u>2-72-8</u>	1	<u>2-32-2</u>	1	<u>2-01-10</u>	1
	2-2x6	<u>4-64-10</u>	1	<u>4-03-9</u>	1	<u>3-73-3</u>	2	<u>4-14-5</u>	1	<u>3-73-6</u>	2	<u>3-33-0</u>	2	<u>3-94-1</u>	21	3-3	2	<u>2-112-9</u>	2
	2-2x8	<u>5-96-1</u>	21	<u>5-04-10</u>	2	<u>4-64-1</u>	2	<u>5-25-7</u>	2	<u>4-64-5</u>	2	<u>4-13-9</u>	2	<u>4-95-2</u>	2	<u>4-24-1</u>	2	<u>3-93-6</u>	2
	2-2x10	<u>7-07-3</u>	2	<u>6-25-8</u>	2	<u>5-64-10</u>	2	<u>6-46-8</u>	2	<u>5-65-3</u>	2	<u>5-04-5</u>	2	<u>5-96-1</u>	2	<u>5-14-10</u>	2	<u>4-74-1</u>	32
	2-2x12	<u>8-18-6</u>	2	<u>7-16-8</u>	2	<u>6-55-8</u>	2	<u>7-47-10</u>	2	<u>6-56-2</u>	2	<u>5-95-3</u>	3	<u>6-87-2</u>	2	<u>5-105-8</u>	32	<u>5-34-10</u>	3
	3-2x8	<u>7-27-8</u>	1	<u>6-36-0</u>	21	<u>5-85-1</u>	2	<u>6-57-0</u>	21	<u>5-85-6</u>	2	<u>5-14-8</u>	2	<u>5-116-5</u>	21	<u>5-25-1</u>	2	<u>4-84-4</u>	2
	3-2x10	<u>8-99-1</u>	21	<u>7-87-2</u>	2	<u>6-116-1</u>	2	<u>7-118-4</u>	21	<u>6-116-7</u>	2	<u>6-35-7</u>	2	<u>7-37-8</u>	2	<u>6-46-1</u>	2	<u>5-85-2</u>	2
	3-2x12	<u>10-210-8</u>	2	<u>8-118-5</u>	2	<u>8-07-2</u>	2	<u>9-29-10</u>	2	<u>8-07-8</u>	2	<u>7-36-7</u>	2	<u>8-59-0</u>	2	<u>7-47-1</u>	2	<u>6-76-1</u>	2
	4-2x8	<u>8-18-10</u>	1	<u>7-36-11</u>	1	<u>6-75-11</u>	1	<u>7-58-1</u>	1	<u>6-66-4</u>	1	<u>5-115-5</u>	2	<u>6-107-5</u>	1	<u>6-05-11</u>	21	<u>5-55-0</u>	2
	4-2x10	<u>10-110-6</u>	1	<u>8-108-3</u>	2	<u>8-07-0</u>	2	<u>9-19-8</u>	21	<u>8-07-7</u>	2	<u>7-26-5</u>	2	<u>8-48-10</u>	21	<u>7-47-0</u>	2	<u>6-76-0</u>	2
	4-2x12	<u>11-912-4</u>	21	<u>10-39-8</u>	2	<u>9-38-3</u>	2	<u>10-711-4</u>	2	<u>9-38-11</u>	2	<u>8-47-7</u>	2	<u>9-810-4</u>	2	<u>8-68-3</u>	2	<u>7-77-0</u>	2
Roof, ceiling and one clear span floor	1-2x6	<u>2-11</u>	2	<u>2-3</u>	2	<u>1-11</u>	2	<u>2-9</u>	2	<u>2-1</u>	2	<u>1-9</u>	2	<u>-2-7</u>	-2	<u>-2-0</u>	-2	<u>-1-8</u>	-2
	1-2x8	<u>3-63-9</u>	42	<u>3-02-10</u>	42	<u>2-82-5</u>	43	<u>3-53-6</u>	42	<u>2-112-8</u>	42	<u>2-72-3</u>	23	<u>-3-3</u>	-2	<u>-2-6</u>	-3	<u>-2-2</u>	-3
	1-2x10	<u>4-64-5</u>	42	<u>3-103-5</u>	43	<u>3-32-10</u>	43	<u>4-44-2</u>	42	<u>3-93-2</u>	43	<u>3-12-8</u>	23	<u>-3-11</u>	-2	<u>-3-0</u>	-3	<u>-2-6</u>	-3
	1-2x12	<u>5-65-2</u>	42	<u>4-24-0</u>	23	<u>3-33-4</u>	23	<u>5-44-10</u>	23	<u>3-113-9</u>	23	<u>3-13-2</u>	24	<u>-4-7</u>	-3	<u>-3-6</u>	-3	<u>-3-0</u>	-4
	2-2x4	<u>2-82-11</u>	1	<u>2-42-3</u>	1	<u>2-11-10</u>	1	<u>2-72-9</u>	1	<u>2-32-1</u>	1	<u>2-01-9</u>	1	<u>2-52-7</u>	1	<u>2-12-0</u>	1	<u>1-101-8</u>	1
	2-2x6	<u>3-114-4</u>	1	<u>3-53-4</u>	2	<u>3-02-10</u>	2	<u>3-104-1</u>	21	<u>3-43-2</u>	2	<u>3-02-8</u>	2	<u>3-63-10</u>	21	<u>3-13-0</u>	2	<u>2-92-6</u>	2
	2-2x8	<u>5-05-6</u>	2	<u>4-44-3</u>	2	<u>3-103-7</u>	2	<u>4-105-2</u>	2	<u>4-24-0</u>	2	<u>3-93-4</u>	2	<u>4-64-10</u>	2	<u>3-113-9</u>	2	<u>3-63-2</u>	2
	2-2x10	<u>6-16-7</u>	2	<u>5-35-0</u>	2	<u>4-84-2</u>	2	<u>5-116-1</u>	2	<u>5-14-9</u>	2	<u>4-74-0</u>	32	<u>5-65-9</u>	2	<u>4-94-5</u>	2	<u>4-33-9</u>	3
	2-2x12	<u>7-17-9</u>	2	<u>6-15-11</u>	32	<u>5-54-11</u>	3	<u>6-107-2</u>	2	<u>5-115-7</u>	32	<u>5-44-8</u>	3	<u>6-46-9</u>	2	<u>5-65-3</u>	3	<u>5-04-5</u>	3
	3-2x8	<u>6-36-11</u>	21	<u>5-55-3</u>	2	<u>4-104-5</u>	2	<u>6-16-5</u>	21	<u>5-35-0</u>	2	<u>4-84-2</u>	2	<u>5-76-1</u>	21	<u>4-114-8</u>	2	<u>4-54-0</u>	2
	3-2x10	<u>7-78-3</u>	2	<u>6-76-3</u>	2	<u>5-115-3</u>	2	<u>7-57-8</u>	2	<u>6-55-11</u>	2	<u>5-95-0</u>	2	<u>6-107-3</u>	2	<u>6-05-7</u>	2	<u>5-44-8</u>	2
	3-2x12	<u>8-109-8</u>	2	<u>7-87-5</u>	2	<u>6-106-2</u>	2	<u>8-79-0</u>	2	<u>7-57-0</u>	2	<u>6-85-10</u>	2	<u>7-118-6</u>	2	<u>6-116-7</u>	2	<u>6-35-6</u>	23
	4-2x8	<u>7-28-0</u>	1	<u>6-36-1</u>	21	<u>5-75-1</u>	2	<u>7-07-5</u>	1	<u>6-15-9</u>	2	<u>5-54-10</u>	2	<u>6-67-0</u>	1	<u>5-85-5</u>	2	<u>5-14-7</u>	2
	4-2x10	<u>8-99-6</u>	21	<u>7-77-3</u>	2	<u>6-106-1</u>	2	<u>8-78-10</u>	21	<u>7-56-10</u>	2	<u>6-75-9</u>	2	<u>7-118-4</u>	21	<u>6-116-5</u>	2	<u>6-25-5</u>	2
4-	<u>10-211-</u>	2	<u>8-108-</u>	2	<u>7-117-</u>	2	<u>9-1110-</u>	2	<u>8-78-0</u>	2	<u>7-86-9</u>	2	<u>9-29-</u>	2	<u>8-07-7</u>	2	<u>7-26-5</u>	2	



3-2x8	<del>4-105-3</del>	<del>21</del>	<del>4-24-0</del>	2	<del>3-93-5</del>	2	<del>4-95-3</del>	2	<del>4-14-0</del>	2	<del>3-83-5</del>	2	<del>4-85-1</del>	2	<del>4-13-11</del>	2	<del>3-83-4</del>	2
3-2x10	<del>5-116-3</del>	2	<del>5-14-9</del>	2	<del>4-74-0</del>	<del>32</del>	<del>5-106-3</del>	2	<del>5-04-9</del>	2	<del>4-64-0</del>	<del>32</del>	<del>5-96-1</del>	2	<del>4-114-8</del>	2	<del>4-54-0</del>	3
3-2x12	<del>6-107-5</del>	2	<del>5-115-8</del>	<del>32</del>	<del>5-44-9</del>	3	<del>6-97-5</del>	2	<del>5-105-8</del>	<del>32</del>	<del>5-34-9</del>	3	<del>6-87-2</del>	2	<del>5-95-6</del>	3	<del>5-24-8</del>	3
4-2x8	<del>5-76-1</del>	<del>21</del>	<del>4-104-8</del>	2	<del>4-43-11</del>	2	<del>5-66-1</del>	<del>21</del>	<del>4-94-8</del>	2	<del>4-33-11</del>	2	<del>5-55-11</del>	<del>21</del>	<del>4-84-7</del>	2	<del>4-23-11</del>	2
4-2x10	<del>6-107-3</del>	2	<del>5-115-6</del>	2	<del>5-34-8</del>	2	<del>6-97-3</del>	2	<del>5-105-6</del>	2	<del>5-24-8</del>	2	<del>6-77-0</del>	2	<del>5-95-5</del>	2	<del>5-14-7</del>	2
4-2x12	<del>7-118-6</del>	2	<del>6-106-6</del>	2	<del>6-25-6</del>	<del>32</del>	<del>7-98-6</del>	2	<del>6-96-6</del>	2	<del>6-05-6</del>	<del>32</del>	<del>7-88-3</del>	2	<del>6-86-4</del>	2	<del>5-115-4</del>	3

For SI: 1 inch = 25.4 mm, 1 pound per square foot = 0.0479 kPa.

- Spans are given in feet and inches.
- No. 1 or better grade lumber shall be used for southern pine. Other tabulated values assume Spans are based on minimum design properties for #2 grade lumber of Douglas Fir-Larch, Hem-Fir, Southern Pine, and Spruce-Pine-Fir.
- Building width is measured perpendicular to the ridge. For widths between those shown, spans are permitted to be interpolated.
- NJ = Number of jack studs required to support each end. Where the number of required jack studs equals one, the header is permitted to be supported by an approved framing anchor attached to the full-height wall stud and to the header.
- Use 30 psf ground snow load for cases in which ground snow load is less than 30 psf and the roof live load is equal to or less than 20 psf.
- Spans are calculated assuming the top of the header or girder is laterally braced by perpendicular framing. Where the top of the header or girder is not laterally braced (e.g. cripple studs bearing on the header), tabulated spans for headers consisting of 2x8, 2x10, or 2x12 sizes shall be multiplied by 0.70 or the header or girder shall be designed.

**TABLE R602.7(2)**  
**GIRDER SPANS<sup>a</sup> AND HEADER SPANS<sup>a</sup> FOR INTERIOR BEARING WALLS (Maximum spans for Douglas fir-larch, hem-fir, southern pine and spruce-pine-fir<sup>b</sup> and required number of jack studs)**

HEADERS AND GIRDERS SUPPORTING	SIZE	BUILDING Width <sup>c</sup> (feet)					
		2012		2824		36	
		Span <sup>e</sup>	NJ <sup>d</sup>	Span <sup>e</sup>	NJ <sup>d</sup>	Span <sup>e</sup>	NJ <sup>d</sup>
One floor only	2-2 x 4	<del>3-14-1</del>	1	<del>2-82-10</del>	1	<del>2-52-4</del>	1
	2-2 x 6	<del>4-66-1</del>	1	<del>3-114-4</del>	1	3-6	1
	2-2 x 8	<del>5-97-9</del>	1	<del>5-05-5</del>	<del>21</del>	4-5	2
	2-2 x 10	<del>7-09-2</del>	<del>21</del>	<del>6-16-6</del>	2	<del>5-55-3</del>	2
	2-2 x 12	<del>8-110-9</del>	<del>21</del>	<del>7-07-7</del>	2	6-3	2
	3-2 x 8	<del>7-29-8</del>	1	<del>6-36-10</del>	1	5-7	<del>21</del>
	3-2 x 10	<del>8-911-5</del>	1	<del>7-78-1</del>	<del>21</del>	<del>6-96-7</del>	2
	3-2 x 12	<del>10-213-6</del>	<del>21</del>	<del>8-109-6</del>	2	<del>7-107-9</del>	2
	4-2 x 8	<del>9-011-2</del>	1	<del>7-87-11</del>	1	<del>6-96-5</del>	1
	4-2 x 10	<del>10-113-3</del>	1	<del>8-99-4</del>	1	<del>7-107-8</del>	<del>21</del>
	4-2 x 12	<del>11-915-7</del>	1	<del>10-211-0</del>	<del>21</del>	<del>9-19-0</del>	2
Two floors	2-2 x 4	<del>2-22-7</del>	1	<del>1-101-11</del>	1	1-7	1
	2-2 x 6	<del>3-23-11</del>	<del>21</del>	<del>2-92-11</del>	2	2-5	2
	2-2 x 8	<del>4-15-0</del>	<del>21</del>	<del>3-63-8</del>	2	<del>3-23-1</del>	2
	2-2 x 10	<del>4-115-11</del>	2	<del>4-34-4</del>	2	<del>3-103-7</del>	<del>32</del>
	2-2 x 12	<del>5-96-11</del>	2	<del>5-05-2</del>	<del>32</del>	<del>4-54-3</del>	3
	3-2 x 8	<del>5-16-3</del>	<del>21</del>	<del>4-54-7</del>	2	<del>3-113-10</del>	2
	3-2 x 10	<del>6-27-5</del>	<del>21</del>	<del>5-45-6</del>	2	<del>4-104-6</del>	2

3-2 × 12	<del>7-28-8</del>	2	<del>6-36-5</del>	2	<del>5-75-4</del>	<u>32</u>
4-2 × 8	<del>6-47-2</del>	1	<del>5-35-4</del>	<u>21</u>	<del>4-84-5</del>	2
4-2 × 10	<del>7-28-6</del>	<u>21</u>	<del>6-26-4</del>	2	<del>5-65-3</del>	2
4-2 × 12	<del>8-410-1</del>	<u>21</u>	<del>7-27-5</del>	2	<del>6-56-2</del>	2

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm.

- a. Spans are given in feet and inches.
- b. ~~No. 1 or better grade lumber shall be used for southern pine. Other tabulated values assume~~ Spans are based on minimim design properties for #2 grade lumber Douglas Fir-Larch, Hem-Fir, Southern Pine, and Spruce-Pine-Fir.
- c. Building width is measured perpendicular to the ridge. For widths between those shown, spans are permitted to be interpolated.
- d. NJ = Number of jack studs required to support each end. Where the number of required jack studs equals one, the header is permitted to be supported by an approved framing anchor attached to the full-height wall stud and to the header.
- e. Spans are calculated assuming the top of the header or girder is laterally braced by perpendicular framing. Where the top of the header or girder is not laterally braced (e.g. cripple studs bearing on the header), tabulated spans for headers consisting of 2x8, 2x10, or 2x12 sizes shall be multiplied by 0.70 or the header or girder shall be designed.

**Reason:** The update of Table R602.7(1) Girder Spans and Header Spans for Exterior Bearing Walls is proposed. Updated spans address use of Southern Pine No. 2 in lieu of Southern Pine No. 1. Footnote "f" is added to clarify that header spans are based on laterally braced assumption such as when the header is raised. For dropped headers consisting of 2x8, 2x10, or 2x12 sizes that are not laterally braced, a factor of 0.7 can be applied to determine the spans or alternatively the header or girder can be designed to include any adjustment for potential buckling. Laterally braced (raised) and not laterally braced (dropped) header conditions and building widths for which header spans are tabulated represent the same conditions used to develop header span tables in the Wood Frame Construction Manual (WFCM).

The update of Table R602.7(2) Girder Spans and Header Spands for Interior Bearing Walls is proposed. Updated spans address use of Southern Pine No. 2 in lieu of Southern Pine No. 1. Footnote "e" is added to clarify that header spans are based on laterally braced assumption such as when the header is raised. For dropped headers consisting of 2x8, 2x10, or 2x12 sizes that are not laterally braced, a factor of 0.7 can be applied to determine the spans or alternatively the header or girder can be designed to include any adjustment for potential buckling. Laterally braced (raised) and not laterally braced (dropped) header conditions and building widths for which header spans are tabulated represent the same conditions used to develop header span tables in the Wood Frame Construction Manual (WFCM).

**Cost Impact:** Increased cost may be associated with reduced spans that result from the not laterally braced condition and application of footnote f (in Table R602.7(1)) or e (in Table R602.7(2)). Due to smaller building width column (12'), permissible use of Southern Pine No. 2, and the laterally braced assumption for tabulated spans, there are also cases where this change will not increase the cost of construction and may reduce the cost of construction.

---

## Workgroup Recommendation

**Workgroup 2 Recommendation:** None

**Workgroup 2 Reason:** None

**Workgroup 3 Recommendation:** None

**Workgroup 3 Reason:** None

---

## Board Decision

None

CR-R602.7 cdpVA-15

# CB-2603.5.5 cdpVA-15

**Proponent :** Kenney Payne, Representing AIA-VA  
(kpayne@moseleyarchitects.com)

## 2012 Virginia Construction Code

**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 Sections 603, 803, 806 or 1406 differ from assembly to assembly or within an assembly, multiple tests shall not be required.

**Exception:** Exterior wall assemblies are not required to be tested in accordance with, and comply with, acceptance criteria of NFPA 285 where any of the following conditions are met:

1. One-story buildings ~~complying with Section 2603.4.1.4.~~
2. Wall assemblies where the foam plastic insulation is covered on each face by a minimum of 1-inch (25 mm) thickness of masonry or concrete complying with either of the following:
  - 2.1 There is no air space between the insulation and the concrete or masonry; or
  - 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.

**Reason:** Exception #3 makes Exception #1 (as currently written) obsolete because 2603.4.1.4 already requires the building to be sprinkled. So, if a building is fully sprinkled, one would use Exception #3, not Exception #1. Section 2603.4.1.4 is essentially a "carve out" for a particular type of building (e.g., metal storage buildings) and type of exterior wall construction (where the exterior wall itself is metal-faced panels without thermal barriers). This proposed change would not affect this building type. Refer to the images below:





The question that should be asked is whether one-story buildings should be subjected to the NFPA 285 test at all. The vast majority of one-story buildings throughout the commonwealth are not or would not be constructed per 2603.4.1.4, requiring **every one-story building** (that is not Type V construction) to comply with the NFPA 285 test.

This would include buildings such as: restaurants, Burger Kings, banks, strip shopping centers, spas, salons, Food Lions, car dealerships, big box stores, single-story offices, etc. – basically 95% or more of businesses in Virginia.

Given that the requirement for this test, or some form thereof, has been around since 1988, have all of the existing one-story buildings throughout the commonwealth gone through such tests? Assuming not – to what extent has the *foam plastic insulation* contributed to the spread of fire, or to what extent of property damage, injuries, or loss of life has been attributed to *foam plastic insulation* being in the exterior wall of one-story buildings?

The NFPA 285 test, in part, measures vertical propagation of fire (10'-0" from a window opening) – mostly to determine whether a fire on a lower floor would spread to an upper floor. There generally are no upper floors on single-story buildings.

Does Virginia believe such a test is necessary for all one-story buildings? Is this a solution looking for a problem?

**Cost Impact:** If the NFPA 285 test is required and enforced for all single-story buildings (other than Type V construction), this code change would result in potentially HUGE COST SAVINGS. Full-scale assembly tests cost approximately \$35-100,000 per assembly per test (variation in cost depends on the type and complexity of the assembly) – and such tests could potentially increase construction schedules by 6 months or more (the average time delay to have an NFPA 285 test conducted).

How many different exterior wall assemblies are there on a typical one-story building? One, two, three, four or more? How many are in the building you are in right now?

These potential increased costs assume each different assembly would pass the first time. If any assembly fails, the costs and time would increase accordingly until a passing test is achieved. Not only would the cost of construction increase if such tests were required on one-story buildings, but those costs would almost certainly be transferred to the consumers.

---

## Workgroup Recommendation

**Workgroup 2 Recommendation:** None

**Workgroup 2 Reason:** None

---

## **Board Decision**

None

**CB-2603.5.5 cdpVA-15**

---

# CE-R402.1.1 cdpVA-15

**Proponent :** Bruce Cornwall, Representing self  
(bcornwall@culpepercounty.gov)

## 2012 Virginia Energy Conservation Code

**TABLE R402.1.1  
INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT<sup>a</sup>**

CLIMATE ZONE	FENESTRATION U-FACTOR <sup>b</sup>	SKYLIGHT <sup>b</sup> U-FACTOR	GLAZED FENESTRATION SHGC <sup>b,e</sup>	CEILING R-VALUE	WOOD FRAME WALL R-VALUE	MA WA R VAL
1	NR	0.75	0.25	30	13	3,
2	0.40	0.65	0.25	38	13	4,
3	0.35	0.55	0.25	38	20 or 13+5 <sup>h</sup>	8/
4 except Marine	0.35	0.55	0.40	<del>38</del> 49	15 or 13+1 <sup>h</sup>	8/
5 and Marine 4	0.32	0.55	NR	49	20 or 13+5 <sup>h</sup>	13,
6	0.32	0.55	NR	49	20+5 or 13+10 <sup>h</sup>	15,
7 and 8	0.32	0.55	NR	49	20+5 or 13+10 <sup>h</sup>	19,

For SI: 1 foot = 304.8 mm.

**TABLE R402.1.3  
EQUIVALENT U-FACTORS<sup>a</sup>**

--	--	--	--	--	--	--

CLIMATE ZONE	FENESTRATION U-FACTOR	SKYLIGHT U-FACTOR	CEILING U-FACTOR	FRAME WALL U-FACTOR	MASS WALL U-FACTOR <sup>b</sup>	F U-
1	0.50	0.75	0.035	0.082	0.197	
2	0.40	0.65	0.030	0.082	0.165	
3	0.35	0.55	0.030	0.057	0.098	
4 except Marine	0.35	0.55	<del>0.030</del> <u>0.026</u>	0.079	0.098	
5 and Marine 4	0.32	0.55	0.026	0.057	0.082	
6	0.32	0.55	0.026	0.048	0.060	
7 and 8	0.32	0.55	0.026	0.048	0.057	

a. Nonfenestration *U*-factors shall be obtained from measurement, calculation or an approved source.

**~~R402.4.1.2.2 Visual inspection option.~~**

~~Building envelope tightness shall be considered acceptable when the items listed in Table [R402.4.1.1](#), applicable to the method of construction, are field verified. Where required by the building official, an approved party, independent from the installer, shall inspect the air barrier. When this option is chosen, the dwelling unit shall be ventilated by mechanical means in accordance with Section [403](#) of the *International Mechanical Code*.~~

**Reason:**

R-49 has been the standard for ceiling insulation in our area in the national code for 4 years. Studies show that the added insulation will more than pay for itself in the life of the home.

**Cost Impact:** The overall cost of this change would be approximately \$150.00 for an area of 1200 sq. ft.. This is .075 percent increase for a \$200,000 house.

**Workgroup Recommendation**

**Workgroup 2 Recommendation:** None

**Workgroup 2 Reason:** None

**Workgroup 3 Recommendation Recommendation:** Non-Consensus Final

**Workgroup 3 Reason:** Mike Toalson - we disapproved this before. Benefit vs cost is too much.

We will continue to object to this-

Andrew Grigsby - I fully support this

Mike Toalson - I wasn't aware of this being on the agenda.&nbs

---

## **Board Decision**

None

**CE-R402.1.1 cdpVA-15**

---

# CE-R402.4.1.2 cdpVA-15

**Proponent :** Andrew Grigsby (andrew@leap-va.org)

## 2012 Virginia Energy Conservation Code

**(DHCD Staff Note: Proponent confirmed corresponding changes to be made to IRC energy provisions.)**

### **R402.4.1.2 Airsealing.**

Building envelope air tightness shall be demonstrated to comply with either Section [R402.4.1.2.1](#) or [R402.4.1.2.2](#).

### **R402.4.1.2.2 Visual inspection option.**

~~Building envelope tightness shall be considered acceptable when the items listed in Table [R402.4.1.1](#), applicable to the method of construction, are field verified. Where required by the building official, an approved party, independent from the installer, shall inspect the air barrier. When this option is chosen, the dwelling unit shall be ventilated by mechanical means in accordance with Section [403](#) of the *International Mechanical Code*.~~

**Add new standard(s) as follows:** IECC2012, IECC 2015

**Reason:** There is no substitute for actual mechanical testing of the building. A visual inspection standard is no standard - as it cannot obtain a numerical value. Air leaks - even large ones - are not always observable during a visual inspection. It is precisely the hard-to-find leaks that are the problem. Most builders will address a visible hole. It is not difficult to build a tight house. But the only way to find the random problems is to test. One can only know the actual air changes per hour if we test. It is untenable to ask a building official to sign off on a CO - which is his statement to the buyer that reasonable effort has been made to confirm that the home meets the standards in the code - when he actually has no data on the homes air changes per hour - and that data is readily available. It makes the code official vulnerable to lawsuits. Montgomery County, VA has been requiring the blower door test for several years. Fourteen other states require it. This is a basic quality assurance test that is a win for quality and efficiency. It's not expensive. There are trained folks all over the state. Without the results of the blower door test, the ventilation system will either be over- or under- ventilating the home, resulting in either efficiency or health being compromised.

**Cost Impact:** \$75-\$200

---

## Workgroup Recommendation

**Workgroup 2 Recommendation:** None

**Workgroup 2 Reason:** None

**Workgroup 3 Recommendation:** None

**Workgroup 3 Reason:** None

---

## Board Decision

None

**CE-R402.4.1.2 cdpVA-15**

# CE-R403.2.2 cdpVA-15

Proponent : Andrew Grigsby (andrew@leap-va.org)

## 2012 Virginia Energy Conservation Code

**(DHCD Staff Note: Proponent confirmed corresponding changes to be made to IRC energy provisions)**

### **R403.2.2 Sealing (Mandatory).**

Ducts, air handlers, and filter boxes shall be sealed. Joints and seams shall comply with either the *International Mechanical Code* or the *International Residential Code*, as applicable. Verification of compliance with this section shall be in accordance with either Section [R403.2.2.1](#) or [R403.2.2.2](#).

- **Exceptions:**

1. Air-impermeable spray foam products shall be permitted to be applied without additional joint seals.
2. Where a duct connection is made that is partially inaccessible, three screws or rivets shall be equally spaced on the exposed portion of the joint so as to prevent a hinge effect.
3. Continuously welded and locking-type longitudinal joints and seams in ducts operating at static pressures less than 2 inches of water column (500 Pa) pressure classification shall not require additional closure systems.

### **R403.2.2.2 Visual inspection option.**

~~In addition to the inspection of ducts otherwise required by this code, when the air handler and all ducts are not within conditioned space and this option is chosen to verify duct tightness, duct tightness shall be considered acceptable when the requirements of Section [R403.2.2](#) are field verified.~~

**Add new standard(s) as follows:** IECC 2012, IECC 2015

**Reason:** There is no substitute for a pressure test of the ductwork. Any person who actually has tested ductwork knows that, unless every inch of the entire duct system is readily visible, then only a mechanical test would have a hope of finding all of the leaks. It makes no sense to ask an inspector to crawl around the entire system hunting for leaks. Usually that's physically impossible. The only evaluation that gives results that can be compared against an objective standard is an actual pressure test. Otherwise, there is no standard. I have tested many systems that failed the pressure test. Some even fail it twice. It is untenable to ask a building official to sign off on a CO - which is his statement to the buyer that reasonable effort has been made to confirm that the home and its systems meet the standards in the code - when he actually has no data on how the duct system performs - and that data is readily available. It makes the code official vulnerable to lawsuits.

**Cost Impact:** \$150 to \$450 depending on home size

---

## **Workgroup Recommendation**

**Workgroup 2 Recommendation:** None

**Workgroup 2 Reason:** None

**Workgroup 3 Recommendation Recommendation:** Pending

**Workgroup 3 Reason:** Mr Grigsby spoke on his proposal-Walter (Danville) requires WHMV-states 600 dollar additional costs-Grigsby stated inaccurate statement-Gerber asked about whole house leakage-proposal is about duct leakage.-Toalson opposes-not enough time to review

**Workgroup 4 Recommendation Recommendation:** Pending

**Workgroup 4 Reason:** Toalson stated we need certified testers first at a reasonable cost-Strausbaugh felt the language should not read "new"-Haywood states additional work load to locality. Witt concerned with reports being sent into locality-does not agree with the reason

---

## **Board Decision**

None

**CE-R403.2.2 cdpVA-15**

# F-703.1 cdpVA-15

**Proponent :** Zachary Adams (adamsz@vt.edu)

## 2015 International Fire Code

### (OPTION ONE)

**703.1 Maintenance.** The required *fire-resistance rating* of fire-resistance-rated construction, including, but not limited to, walls, firestops, shaft enclosures, partitions, *smoke barriers*, floors, fire-resistive coatings and sprayed fire-resistant materials applied to structural members and fire-resistant joint systems, shall be maintained. ~~Such elements shall be visually inspected by the owner annually and properly repaired, restored or replaced where damaged, altered, breached or penetrated. 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 similar movable entry to the space.~~ Openings made therein for the passage of pipes, electrical conduit, wires, ducts, air transfer openings and holes made for any reason shall be protected with *approved* methods capable of resisting the passage of smoke and fire. Openings through fire-resistance-rated assemblies shall be protected by self- or automatic-closing doors of *approved* construction meeting the fire protection requirements for the assembly.

### (OPTION TWO)

**703.1 Maintenance.** The required *fire-resistance rating* of fire-resistance-rated construction, including, but not limited to, walls, firestops, shaft enclosures, partitions, *smoke barriers*, floors, fire-resistive coatings and sprayed fire-resistant materials applied to structural members and fire-resistant joint systems, shall be maintained. Such elements shall be visually inspected by the *owner* annually and properly repaired, restored or replaced where damaged, altered, breached or penetrated. 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 similar movable entry to the space. Openings made therein for the passage of pipes, electrical conduit, wires, ducts, air transfer openings and holes made for any reason shall be protected with *approved* methods capable of resisting the passage of smoke and fire. Openings through fire-resistance-rated assemblies shall be protected by self- or automatic-closing doors of *approved* construction meeting the fire protection requirements for the assembly.

**Exception:** When approved by the Authority Having Jurisdiction, an inspection frequency other than annual may be established.

### **Reason:**

While we agree it is imperative that the integrity of *fire-resistance construction* be maintained, to require an annual inspection imposes a substantial burden on the owner, especially where an extensive amount of square footage is occupied. Also, what tangible benefit does imposing an

annual inspection requirement achieve? Finally, it appears sections 108.1(1) of the VCC and 105.1 of the VRC would require any work affecting such construction must be performed under a permit and are subject to inspection by the code official and during which any needed repairs to this construction would be identified.

The "OPTION ONE" proposal reverts this section to the verbiage used in earlier versions in the IFC.

The "OPTION TWO" proposal provides for an inspection frequency other than annual with the approval of the Authority Having Jurisdiction. Allowing the Owner to establish an inspection frequency other than annual, with the approval of the AHJ, would significantly reduce the cost impact and resources required to comply with this code section. If the Owner implements a program of inspection, oversight and controls on work that potentially impact fire-resistance rated construction which can be proven to be effective to the AHJ, this code change would allow such a program to essentially serve in lieu of the annual inspection requirements.

### **Cost Impact:**

For the Option One proposal, this would remove a substantial financial burden from the Owner, who would need to have qualified persons perform these inspections and make any needed repairs in order to comply with section.

For the Option Two proposal, allowing the Owner to establish an inspection frequency other than annual, with the approval of the AHJ, would significantly reduce the cost impact and resources required to comply with this code section. If the Owner implements a program of inspection, oversight and controls on work that potentially impact fire-resistance rated construction which can be proven to be effective to the AHJ, this code change would allow such a program to essentially serve in lieu of the annual inspection requirements.

---

## **Workgroup Recommendation**

**Workgroup 2 Recommendation:** None

**Workgroup 2 Reason:** None

---

## **Board Decision**

None

**F-703.1 cdpVA-15**

# F-703.4 cdpVA-15

## F-703.4

**Proponent :** Justin Biller, Representing Self (jbbiller@carilionclinic.org)

### 2012 Virginia Statewide Fire Prevention Code

#### **703.4 Testing.**

Fire doors shall be inspected and functionally tested in accordance with NFPA 80 annually to confirm proper operation and full closure. Before testing, a visual inspection shall be performed to identify any damaged or missing parts that can create a hazard during testing or affect operation or resetting. A written record shall be maintained and be available to the *fire code official*.

**Reason:** In particular, Health Care Facilities in Virginia are facing enforcement of this requirement as part of ongoing licensure/funding through State enforcement of NFPA 101, *Life Safety Code*, so it is also important that these requirements are consistent with local fire prevention code enforcement as well throughout the Commonwealth. The 2012 ICC Fire Code Commentary implies that inspection is occurring in accordance with NFPA 80 and specific additional points of inspection are highlighted in section 703.2.2 and 703.2.3 in line with specific NFPA 80 requirements.

*"Openings in fire-resistance-rated assemblies must be protected to prevent the passage of fire. After opening protectives are installed and approved, they may become damaged, corroded or otherwise less effective than required. This section specifically requires that all opening protectives required by the IBC be maintained in compliance with NFPA 80 so that they can perform their intended function, which is to prevent the passage of smoke, fire or combustion products through openings in fire-resistance-rated walls, ceilings and shafts during a fire emergency. Sections 703.2.2 and 703.2.3 indicate specific points of inspection and enforcement regarding these doors. ..."*

The revised language in section 703.4 clarifies that the intent of 703.2 was for all fire doors (including swinging doors with fire door or builders hardware as designated by NFPA 80) to be inspected/tested in accordance with the provisions of NFPA 80. Prior to the 2007 edition of NFPA 80, the standard only required that fire doors and windows be inspected frequently. Requiring inspections "frequently" is not an enforceable provision. Building owners, fire door inspectors, and AHJs were unable to determine the intended frequency of the inspections. This language allowed for many fire doors to go un-inspected for too long, which risked their integrity and ability to properly protect the opening. For the 2007 edition of NFPA 80, the language was revised as part of new Chapter 5 and the required frequency for inspection of fire doors and windows was set at annually, and the assumption is that this has been enforced within the Commonwealth since the adoption of the 2009 Statewide Fire Prevention Code. Additional language is also provided to clarify the need for a visual inspection of the opening protective to be part of the functional testing required by this section, as prescribed in NFPA 80.

**Cost Impact:** This change is for clarification of requirements only with no impact to the cost of construction or ongoing operations and maintenance.

---

## Workgroup Recommendation

**Workgroup 1 Recommendation Recommendation:** Pending

**Workgroup 1 Reason:**

March 27- Robby Dawson – If it goes forward in accordance with NFPA 80, that will be fine, I will reach out to Justin Biller.

July 7th-still pending

**Workgroup 2 Recommendation Recommendation:** None

**Workgroup 2 Reason:** Robby Dawson to reach out to the proponent. This proposal will be continued.

---

## **Board Decision**

None

**F-703.4 cdpVA-15**

## Public Comments for F-703.4 cdpVA-15 : F-703.4-BILLER172

---

James Dawson

Public Comments for Proposal Id : 172

1 Comment(s)

By **James Dawson**

07-07-2016 12:49:36

Based on WG 1 discussions, I offer the following alternative proposal for this change based on the 2015 edition of the IFC:

**703.4 Testing.** Horizontal and vertical sliding and rolling fire doors shall be inspected and tested annually in accordance with NFPA 80 to confirm proper operation and full closure. Records of inspections and testing shall be maintained and made available to the fire code official.

This preserves the desired outcome of original proponent and provides specific standards and guidance on how to conduct the specified testing and inspections consistent with other portions of this section.

## F-1030.1 cdpVA-15

**Proponent :** Andrew Milliken, Representing Stafford County Fire Marshall's Office (amiliken@staffordcountyva.gov)

### 2015 International Building Code

**1030.1 General.** In addition to the *means of egress* required by this chapter, provisions shall be made for *emergency escape and rescue openings* in Group R-2 occupancies in accordance with Tables 1006.3.2(1) and 1006.3.2(2) ~~and~~, Group R-3 and R-4 occupancies. *Basements* and sleeping rooms below the fourth story above *grade plane* shall have at least one exterior *emergency escape and rescue opening* in accordance with this section. Where *basements* contain one or more sleeping rooms, *emergency escape and rescue openings* shall be required in each sleeping room, but shall not be required in adjoining areas of the *basement*. Such openings shall open directly into a *public way* or to a *yard* or *court* that opens to a *public way*.

- **Exceptions:**

1. *Basements* with a ceiling height of less than 80 inches (2032 mm) shall not be required to have *emergency escape and rescue openings*.
2. *Emergency escape and rescue openings* are not required from *basements* or sleeping rooms that have an *exit door* or *exit access door* that opens directly into a *public way* or to a *yard*, *court* or exterior exit balcony that opens to a *public way*.
3. *Basements* without *habitable spaces* and having not more than 200 square feet (18.6 m<sup>2</sup>) in floor area shall not be required to have *emergency escape and rescue openings*.

### 2015 International Fire Code

**[BE] 1030.1 General.** In addition to the *means of egress* required by this chapter, provisions shall be made for *emergency escape and rescue openings* in Group R-2 occupancies in accordance with Tables 1006.3.2(1) and 1006.3.2(2) ~~and~~, Group R-3 and R-4 occupancies. *Basements* and sleeping rooms below the fourth story above *grade plane* shall have at least one exterior *emergency escape and rescue opening* in accordance with this section. Where *basements* contain one or more sleeping rooms, *emergency escape and rescue openings* shall be required in each sleeping room, but shall not be required in adjoining areas of the *basement*. Such openings shall open directly into a *public way* or to a *yard* or *court* that opens to a *public way*.

- **Exceptions:**

1. *Basements* with a ceiling height of less than 80 inches (2032 mm) shall not be required to have *emergency escape and rescue openings*.
2. *Emergency escape and rescue openings* are not required from *basements* or sleeping rooms that have an *exit door* or *exit access door* that opens directly into a *public way* or to a *yard*, *court* or exterior exit balcony that opens to a *public way*.
3. *Basements* without *habitable spaces* and having not more than 200

square feet (18.6 m<sup>2</sup>) in floor area shall not be required to have *emergency escape and rescue openings*.

**Reason:** The intent of this proposal is to clarify that the requirements of emergency escape and rescue openings apply to R-4 occupancies. Section 310.6 of the 2012 Virginia Construction Code and 2015 International Building Code indicate that, "group R-4 occupancies shall meet the requirements for construction as defined for Group R-3, except as otherwise provided for in this code." Furthermore, section 403.9.3.6 of the 2012 Virginia Statewide Fire Prevention Code and 403.10.3.6 of the 2015 International Fire Code indicate that group R-4 occupancies shall include emergency escape and rescue windows as part of building evacuation procedures. This proposal does not add any new requirements but rather simply clarifies that emergency escape openings are essential for effective evacuation from and are required for R-4 occupancies. It also helps to provide continuity between Virginia Construction Code requirements for egress and Fire Prevention Code requirements for evacuation.

**Cost Impact:** This proposal does not impact cost as it is only editorial and does not add any new requirements.

---

## **Workgroup Recommendation**

**Workgroup 2 Recommendation:** None

**Workgroup 2 Reason:** None

---

## **Board Decision**

None

**F-1030.1 cdpVA-15**

---

# F-2311.7 cdpVA-15

**Proponent :** William Andrews, Representing City of Richmond, Fire Marshal's office (william.andrews@richmondgov.com)

## 2015 International Fire Code

**2311.7 Repair garages for vehicles fueled by lighter-than-air fuels.** Lighter-than-air motor fuel systems shall not be worked on in a building, and no open flame or welding shall occur in that part of the building where a vehicle with lighter-than-air motor fuel systems is located, unless in compliance with the appropriate building code. Where equipped, ventilation systems shall be operated when working on vehicles inside, unless interlock system which is maintained per applicable code.

Repair garages for the conversion and repair of vehicles that use CNG, liquefied natural gas (LNG), hydrogen or other lighter-than-air motor fuels shall be in accordance with Sections 2311.7 through 2311.7.2.3 in addition to the other requirements of Section 2311.

- **Exceptions:**

1. Repair garages where work is not performed on the fuel system and is limited to exchange of parts and maintenance not requiring open flame or welding on the CNG-, LNG-, hydrogen- or other lighter-than-air-fueled motor vehicle.
2. Repair garages for hydrogen-fueled vehicles where work is not performed on the hydrogen storage tank and is limited to the exchange of parts and maintenance not requiring open flame or welding on the hydrogen-fueled vehicle. During the work, the entire hydrogen fuel system shall contain a quantity that is less than 200 cubic feet (5.6 m<sup>3</sup>) of hydrogen.

**Reason:** The 2000 IFC section 2210.1 and current state fire code section 2311.7 required repair garages to comply with this section and the IBC. Repair garages for vehicles that use more than one type of fuel shall comply with the applicable provisions of this section for each type of fuel used.

IFC commentary notes repair garages that install and repair lighter than air motor fuel systems must be equipped with proper ventilation and gas detection systems.

While Virginia fire officials cannot require building features of ventilation or gas detection system, and edit committee recommends removing building features from Chapter 23 and put in appendix for reference, the fire code should regulate safety of activity involving such hazard inside buildings approved for different risks.

As state plans to edit out most building code parts in the fire code, replacing with generic "maintain in accordance with the applicable building code", recommend state fire code change to forbid working on lighter than air fuel systems inside unless building approved for such by building code. Garages may continue to work on rest of vehicle, but not use open flame or weld when lighter than air fuel vehicle inside; unless comply with building code for such fuel leak hazard.

State editing committee proposing to delete all of section 2311.7 on topic except changing so reads "The mechanical ventilation system shall be maintained in accordance with the applicable

building code." My recent emails ask they amend proposals so fire code also requires USING ventilation system when working on vehicles, since system maintenance per building code not require when ventilation fan on. Fire code has exceptions about continuous fans, thus change effort to allow such.

Similar to fire code section 2311.7, 2015 IBC section 406.8.5 requires repair garages for vehicles fueled by non-odorous gases such as hydrogen or LNG to have gas detection system, which upon activation turns on alarm and ventilation, and turns off heaters. Example of need for garages to comply with specific building code features before work on lighter than air fuel systems inside.

Most existing repair garages built for working on gasoline and diesel fuel vehicles. Change in fuel type (lighter than air) changes occupancy hazard, thus needs appropriate building safety features.

When heavier than air vapors hazard, ignition sources such as flame heater are high. Adding lighter than air ignitable vapors needs proper changing building features. Such vehicles rare beyond fleets with own service garages, yet safety needed for general garages which might be unfamiliar with safety issues for different systems.

**Cost Impact:** Minimal impact on most, but substantial if facility to work on lighter than vehicles air fuel systems inside.

---

## **Workgroup Recommendation**

**Workgroup 2 Recommendation:** None

**Workgroup 2 Reason:** None

---

## **Board Decision**

None

**F-2311.7 cdpVA-15**

---

# F-3103.2 cdpVA-15

**Proponent :** Andrew Milliken, Representing Stafford County Fire Marshall's Office (amiliken@staffordcountyva.gov)

## 2015 International Fire Code

~~**3103.2 Approval required.** Tents and membrane structures having an area in excess of 400 square feet (37 m<sup>2</sup>) shall not be erected, operated or maintained for any purpose without first obtaining a permit and approval from the *fire code official*.~~

### ~~**Exceptions:**~~

- ~~1. Tents used exclusively for recreational camping purposes.~~
- ~~2. Tents open on all sides that comply with all of the following:~~
  - ~~2.1. Individual tents having a maximum size of 700 square feet (65 m<sup>2</sup>).~~
  - ~~2.2. The aggregate area of multiple tents placed side by side without a fire break clearance of 12 feet (3658 mm), not exceeding 700 square feet (65 m<sup>2</sup>) total.~~
  - ~~2.3. A minimum clearance of 12 feet (3658 mm) to all structures and other tents.~~

**Reason:** The intent of this proposal is to eliminate conflicting language regarding when a permit is required. Section 107.2 of the Virginia Statewide Fire Prevention Code indicates the criteria for when permits are required to be obtained from the fire official, including for temporary tents and membrane structures. In fact, section 3103.4 highlights and guides the user of the code to this information already. Section 3103.2 comes from the model code and, although similar, conflicts with the criteria located in chapter 1. The conflicting sections are provided below for reference.

### **From Section 107.2:**

Temporary membrane structures and tents. An operational permit is required to operate an air-supported temporary membrane structure or a tent.

Exceptions:

1. Tents used exclusively for recreational camping purposes.
2. Tents and air-supported structures that cover an area of 900 square feet (84 m<sup>2</sup>) or less, including all connecting areas or spaces with a common means of egress or entrance and with an occupant load of 50 or less persons.

### **From Section 3103.2 (proposed to be deleted):**

Tents and membrane structures having an area in excess of 400 square feet (37 m<sup>2</sup>) shall not be erected, operated or maintained for any purpose without first obtaining a permit and approval from the fire code official.

Exceptions:

1. Tents used exclusively for recreational camping purposes.
2. Tents open on all sides which comply with all of the following:
  - 2.1. Individual tents having a maximum size of 700 square feet (65 m<sup>2</sup>).
  - 2.2. The aggregate area of multiple tents placed side by side without a fire break clearance of 12 feet (3658 mm), not exceeding 700 square feet (65 m<sup>2</sup>) total.
  - 2.3. A minimum clearance of 12 feet (3658 mm) to all structures and other tents.

**Cost Impact:** There is no cost impact associated with this proposal as it simply deletes conflicting language in the code.

---

## **Workgroup Recommendation**

**Workgroup 2 Recommendation:** None

**Workgroup 2 Reason:** None

**Workgroup 1 Recommendation Recommendation:** Non-Consensus Final

**Workgroup 1 Reason:** None

---

## **Board Decision**

None

**F-3103.2 cdpVA-15**

---

## F-5003.3.1.4 cdpVA-15

**Proponent :** Mike OConnor, Representing Virginia Petroleum, Convenient & Grocery Association (mike@vpcga.com)

### 2012 Virginia Statewide Fire Prevention Code

**5003.3.1.4 Responsibility for cleanup.** The person, firm or corporation responsible for an unauthorized discharge shall institute and complete all actions necessary to remedy the effects of such unauthorized discharge, whether sudden or gradual, at no cost to the jurisdiction. The fire code official may require records and receipts to verify cleanup and proper disposal of unauthorized discharges. When deemed necessary by the fire code official, cleanup may be initiated by the fire department or by an authorized individual or firm. Costs associated with such cleanup shall be borne by the owner, operator or other person responsible for the unauthorized discharge.

**Exception:** This section shall not be applicable to leaks and discharges from underground storage tanks and aboveground storage tanks which are regulated by the Virginia Department of Environmental Quality pursuant to Section 62.1-44.34:9 of the Code of Virginia and are subject to the Virginia Petroleum Storage Tank Fund (Article 10 of Title 62.1 (Section 62.1-44.34:10 et seq.)) of the Code of Virginia, or subsection B of Section 62.1-44.34:23 of the Code of Virginia.

**Reason:** The General Assembly has already empowered the Virginia Water Control Board to enact regulations and oversee the cleanup of petroleum based products from discharges from underground and above ground storage tanks. The applicable sections of Virginia Code § 62.1-44.34:9 are underlined below.

§ 62.1-44.34:9. Powers and duties of Board.

The Board is responsible for carrying out the provisions of this article and compatible provisions of federal acts and is authorized to:

1. Enforce the interim prohibition provisions in § 9003 (g) of United States Public Law 98-616. Until state underground storage tank standards promulgated by regulation become effective, the Board shall enforce the federal interim standard which prohibits installation of an underground storage tank for the purpose of storing regulated substances unless such tank:
  - a. Will prevent releases due to corrosion or structural failure for the operational life of the tank;
  - b. Is cathodically protected against corrosion, constructed of noncorrosive material, or designed in a manner to prevent the release or threatened release of any stored substance; and
  - c. The material used in the construction or lining of the tank is compatible with the substance to be stored.
2. Exercise general supervision and control over underground storage tank activities in this Commonwealth.
3. Provide technical assistance and advice concerning all aspects of underground storage tank management.
4. Collect such data and information as may be necessary to conduct the state underground storage tank program.
5. Apply for such federal funds as may become available under federal acts and transmit such funds to appropriate persons.

6. Require notification by owners of underground storage tanks in accordance with the provisions of § 9002 of United States Public Law 98-616.

7. Require notification by owners of property who have actual knowledge of underground storage tanks on such property that were taken out of service before January 1, 1974; however, the civil penalties specified in § 9006 (d) of United States Public Law 98-616 shall not apply to the foregoing notification requirement.

8. Promulgate such regulations as may be necessary to carry out its powers and duties with regard to underground storage tanks in accordance with applicable federal laws and regulations.

9. Require the owner or operator of an underground storage tank who is the responsible person for the release to undertake corrective action for any release of petroleum or any other regulated substance when the Board determines that such corrective action will be done properly and promptly by the owner or operator of the underground storage tank from which the release occurs, regardless of when the release occurred; or undertake corrective action for any release of petroleum or any other regulated substance into the environment from an underground storage tank if such action is necessary, in the judgment of the Board, to protect human health and the environment.

10. Seek recovery of costs incurred, excluding moneys expended from the Virginia Petroleum Storage Tank Fund which are governed by § 62.1-44.34:11, for undertaking corrective action or enforcement action with respect to the release of a regulated substance from an underground storage tank or oil from a facility.

In addition, Virginia Code § 62.1-44.34:23 (B) allows localities the right to access the Underground Storage Tank Fund in certain cases of a discharge. That section states:

"B. Notwithstanding the exemption set forth in clause (vi) of subsection A of this section, a political subdivision may recover pursuant to subsection C of § 62.1-44.34:18 for a discharge of oil into or upon state waters, lands, or storm drain systems from an underground storage tank regulated under a state program at facilities with an aggregate capacity of one million gallons or greater."

Thus, the Fire Prevention Code should provide an exception for those matters.

**Cost Impact:** Given the fact that the fund is capitalized by a fee of .006 for all fuel sold in Virginia there would be no fiscal impact.

---

## Workgroup Recommendation

**Workgroup 2 Recommendation:** None

**Workgroup 2 Reason:** None

---

## Board Decision

None

F-5003.3.1.4 cdpVA-15

---

## Public Comments for F-5003.3.1.4 cdpVA-15 : F-5003.3.1.4-OCONNOR375

---

William Andrews

Public Comments for Proposal Id : 375

1 Comment(s)

By **William Andrews**

07-12-2016 17:46:42

Reasons oppose proposal:

1. State Code 62.1-44.34:23 B notes locality may recover cost from underground tank regulated under state program at facilities with an aggregate capacity of ONE MILLION GALLONS OR GREATER, thus not applicable to smaller facilities?
2. 62.1-44.34:8 list exceptions to definition of Underground Storage Tank includes tanks used for storing heating oil for consumption on the premises where stored. Thus leak from those not covered?
3. Definition for "owner of an underground storage tank" includes "2. In the case of an underground storage tank in use before November 8, 1984, but no longer in use after that date, any person who owned such tank immediately before the discontinuation of its use." Loop-hole allows current owner excuse by claiming tank not used since Nov. 1984; challenging officials to find owner prior to Nov. 1984 and determine when stop using tank (now over 30 year ago).

Better to keep in fire code, and coordinate duplicate coverage between various officials each situation. Good if each code references other.

William Andrews, Assistant Fire Marshal, City of Richmond, [William.Andrews@RichmondGov.com](mailto:William.Andrews@RichmondGov.com)

# M-202(1) cdpVA-15

**Proponent** : John Walsh , Representing VBCOA VMC Committee  
(john.walsh@richmondgov.com)

## 2012 Virginia Maintenance Code

### **STRUCTURE UNFIT FOR HUMAN OCCUPANCY.**

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 (i) of the degree to which the structure is in disrepair or lacks required maintenance, ventilation, illumination, sanitary or heating facilities or other essential equipment, or (ii) the required plumbing and sanitary facilities are inoperable.

**602.2 Heat supply.** All dwellings shall have an approved primary heat source, as required under the code under which it was built, capable of maintaining a level of comfort heat sufficient to maintain the plumbing and sanitation systems free from damage or freezing. Additionally, ~~E~~every owner and operator of a Group R-2 apartment building or other residential dwelling 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 65°F (18°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 *International Plumbing Code*.

### **Reason:**

**202 Definitions**-Due to a recent ruling by the TRB that exempted owner occupied structures from the provisions of the Unfit definition related to a heating source it is necessary to clarify the language and also to clarify the intent of the Board of Housing. It was argued that the Board in their 1990 original revision to the definition and to the section of code found in 602.2 purposefully excluded owner occupied structures from the requirement for any heat source. Even in light of the fact that the definition of a "nuisance" structure (precursor to the current Unsafe/Unfit definitions) in 1990 stated "Any" structure that lacked heat was a nuisance structure. It was argued that because in that same cycle the performance measurement was limited to rental units in Section 602.2 the owner occupied structures were excluded from the requirement for any type of minimum heat source. The locality argued that all structures were required to have some form of heat source and that when the Board limited the performance measurement that they did not exclude any property or structure from the requirement for minimum heating standards, that in fact they kept the requirement for rental units and allowed owner occupied to operate without a set standard to allow for alternative heat sources. This argument was bolstered by the testimony of a TRB member who is also a former Board member. He argued that he served 8 years on the

Board and was involved with the approval of the model codes for two code cycles and did not believe it was ever the intent of the board to exclude owner occupied structures, but to limit the performance standard to rental units. It is my opinion that some form of minimum heat source is required otherwise how would an owner keep his plumbing and sanitation system operational in the winter? For these reasons I ask that the Board change the "An" at the beginning of the definition to "Any" in order to provide greater clarity.

**602.2 Heat Supply**-Based on a recent decision by the TRB that the revision to 602.2 of the VMC exempted owner occupied properties from the requirement for any heating facilities it is necessary to clarify the language and also to clarify the intent of the Board of Housing. It was argued that the Board in their 1990 original revision to the definition and to the section of code found in 602.2 purposefully excluded owner occupied structures from the requirement for any heat source. Even in light of the fact that the definition of a "nuisance" structure (precursor to the current Unsafe/Unfit definitions) in 1990 stated "Any" structure that lacked heat was a nuisance structure. It was argued that because in that same cycle the performance measurement was limited to rental units only that the owner occupied structures were excluded from the requirement for any type of minimum heat source. The locality argued that all structures were required to have some form of heat source and that when the Board limited the performance measurement that they did not exclude any property or structure from the requirement for minimum heating standards, that in fact they kept the performance standard for rental units and allowed owner occupied structures to operate without a set standard to allow for alternative heat sources. This argument was bolstered by the testimony of a TRB member who is also a former Board member. He argued that he served 8 years on the Board and was involved with the approval of standards for two code cycles and did not believe it was ever the intent of the board to exclude owner occupied structures, but to limit the performance standard to rental units. It is my opinion that some form of minimum heat source is required otherwise how would an owner keep his plumbing and sanitation system operational in the winter? For these reasons I ask that the Board to consider this code change in order to provide greater clarity as to the requirements for providing heat to an owner occupied structure.

**Cost Impact:**

**202 Definitions**-The cost to make the change would be negligible. 99% of the residential units in Virginia are furnished with or have had installed in them some form of minimum primary heat source that will maintain the plumbing and sanitary systems free from freezing and/or damage.

**602.2 Heat Supply**-The cost to make the change would be negligible. 99% of the residential units in Virginia are furnished with or have had installed in them some form of minimum primary heat source that will maintain the plumbing and sanitary systems free from freezing and/or damage.

---

## **Workgroup Recommendation**

**Workgroup 1 Recommendation Recommendation:** Pending

**Workgroup 1 Reason:**

March 27th-Will collaborate based on comments at workgroup-status pending

July 7th-Phillip Storey spoke in opposition and has submitted his own proposal-Walsh somewhat agreed and wants the TRB to revisit--move forward

**Workgroup 2 Recommendation:** None

**Workgroup 2 Reason:** None

---

## **Board Decision**

None

**M-202(1) cdpVA-15**

# M-202(2) cdpVA-15

**Proponent** : Phillip Storey, Representing Legal Aid Justice Center  
(phil@justice4all.org)

## 2012 Virginia Maintenance Code

### SECTION 202 DEFINITIONS

#### **STRUCTURE UNFIT FOR HUMAN OCCUPANCY.**

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 (i) of the degree to which the structure is in disrepair or lacks required maintenance, ventilation, illumination, sanitary or heating facilities or other essential equipment, or (ii) the required plumbing and sanitary facilities are inoperable.

#### **Reason:**

##### CONTEXT AND SUMMARY

This proposal responds to a recent administrative appeal decision by the State Building Code Technical Review Board ("TRB"). (Consolidated Appeals [15-12](#) and [15-13](#).) The appeals challenged the City of Richmond's application of VMC § 105.1 to threaten with condemnation owner-occupied homes it claimed met VMC § 202's definition of Structure Unfit for Human Occupancy ("Unfit") because they lacked "primary heating systems." The homeowners argued that, because the Board of Housing and Community Development ("Board") had consistently amended the model maintenance code each cycle since 1990 to limit the requirement for heating facilities to only rented or leased dwellings (VMC § 602.2), owner-occupied homes could not be considered Unfit for lack of a primary heating system. The homeowners prevailed in their appeals, but the TRB's final order was written in a way that skirted the central issue but indirectly implied that heating systems might be required in owner-occupied homes under the Unfit definition, regardless of the Board's amendments to § 602.2.

This proposed amendment to the Unfit definition seeks to clarify that, consistent with the Board's amendments to the 1990 VMC and all subsequent editions, a structure may be declared Unfit due to "the degree to which it lacks" maintenance, facilities, equipment, or other elements *that are among the VMC's substantive requirements found in chapters 3 through 8*. This would make the language and explicit meaning of the Unfit definition's clause (i) consistent with the language and meaning of clause (ii), which likewise only applies to *required* plumbing and sanitary facilities.

This amendment would clarify that a structure could be declared Unfit due to lack of heating facilities that are required by the VMC's substantive regulations found in Chapter 6 ("Mechanical and Electrical Requirements") and § 602 in particular ("Heating and Cooling Facilities"). Conversely, the lack of heating facilities that are not required under § 602 could not be the basis for declaring a structure Unfit and subjecting it to the threat of condemnation.

##### CLARIFYING THE INTENT OF THE BOARD

Proposal M-202, submitted by John Walsh on behalf of VBCOA VMC Committee, argues for code changes based on an interpretation of the Board's intent in adopting the 1990 amendments to § 602.2 (and readopting them in each subsequent code cycle) that is contrary to both the Board's stated intent and the well-established principles for interpreting potentially ambiguous statutes or regulations. Mr. Walsh argues that the Board's amendments to § 602.2 were intended to eliminate the model code's specific performance measurements for owner-occupied dwellings, but not to entirely eliminate the requirement that owner-occupied structures have heating systems installed.

The clearest and most direct indication that the Board intended to entirely eliminate the heating requirement for owner-occupied dwellings is found in the Virginia Register of Regulations ("Register"), where the final amendments to the 1990 edition of the VMC were published. ([7 Va. Reg. Regs. 1084 et seq.](#) (December 31, 1990)) The summary the Board published in the Register along with the amendments includes a clear explanation of the Board's intent in the amended heating requirement. "[T]ext was deleted from the BOCA Property Maintenance Code, §§ PM-601.1 and PM-601.2, which required heat to be supplied in all buildings, rather than just those being rented or leased. This change was necessary to be consistent with Volume I of the Uniform Statewide Building Code." ([7 Va. Reg. Regs. 1085.](#))

Mr. Walsh's interpretation of the Unfit definition and the substantive heating requirements in § 602 also violate well-established principles for interpreting potentially ambiguous statutes and regulations, including: (1) that substantive changes made to laws or regulations are presumed to be purposeful (*Virginia-American Water Co. v. Prince William County Service Authority*, 246 Va. 509, 517, 436 S.E.2d 618, 622-23 (1993)); and (2) that when they conflict, specific provisions control over general ones (*Virginia Nat'l Bank v. Harris*, 220 Va. 336, 340, 257 S.E.2d 867, 870 (1979)). The present amendment would clarify the Unfit definition in harmony with the principles of construction.

### **Cost Impact:**

The proposed amendment would have no clear cost impact on the Commonwealth or municipalities that enforce the VMC. However, if the Unfit definition were interpreted as Mr. Walsh's proposal M-202 suggests and the recent TRB Appeals decision seems to leave open, the costs to low-income homeowners throughout the state could be crushing.

The Unfit definition proposed and interpreted by Mr. Walsh would impose problematically vague requirements. This was clear in his testimony at the TRB appeal hearing, where he argued that the Unfit definition required an "approved primary heat source" (undefined in the USBC) that he explained as: (1) a heat source "labeled and used for whole-home heating and not for space heating" (TRB Hearing Audio Recording at 1:25:42); (2) heating "acceptable under the building code as a sole-source heater" (*Id.* at 1:26:46); and (3) a heat source with "documentation that supports that it is an acceptable heating system for a house" (*Id.* at 1:33:49). He even indicated that an owner-occupied home could be subject to condemnation for lack of an approved heating system "in July, when it is 102 [degrees] outside." (*Id.* at 1:32:49)

According to 2014 Census Bureau data, more than 68,000 owner-occupied dwellings in Virginia use wood as their primary heating fuel and nearly 5,000 others use no fuel at all for heating, together accounting for 3.6% of the total owner-occupied homes in the state. (U.S. Census Bureau, 2010-2014 American Community Survey 5-Year Estimates, Table B25117) It is unclear how many of those homes would be in violation of the amendments proposed in M-202, or how many of the homes heated primarily with electricity, coal, fuel oil, or "other fuel" also lack an "approved primary heat source" under Mr. Walsh's proposal M-202. But it is safe to assume that Mr. Walsh's proposal would affect many tens of thousands of households in Virginia.

Amending the Unfit definition as here proposed would protect potentially tens of thousands of homeowners from the great expense of compliance or even from losing their homes due to the overaggressive interpretation and application of the current definition, as interpreted through one possible reading of the TRB's recent decision and as suggested in the testimony quoted above.

---

## **Workgroup Recommendation**

**Workgroup 1 Recommendation:** None

**Workgroup 1 Reason:** None

**Workgroup 2 Recommendation:** None

**Workgroup 2 Reason:** None

---

## **Board Decision**

None

**M-202(2) cdpVA-15**

---

# M-507.1 cdpVA-15

**Proponent :** Charles Wilson (cwilson2@arlingtonva.us)

## 2012 Virginia Maintenance Code

Drainage of roofs, paved areas, yards and courts and other areas on the property shall be discharged in a manner to protect buildings, structures, and surrounding pervious surfaces from erosion and the accumulation of stormwater runoff.

**The intent of the modification;** is to include erosion prevention and insert the consistent use of the phrase stormwater runoff as widely used in the environmental area.

**The need;** is to address the threshold limit that is not address by Department of Environmental Quality (DEQ).

**The impact on cost of construction;** a simple application of level spreader or channel discharge will have no unreasonable construction cost.

### 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.

**Reason:** To include erosion prevention and insert the consistent use of the phrase stormwater runoff as widely used in the environmental area.  
And to address the threshold limit that is not address by the Department of Environmental Quality (DEQ).

**Cost Impact:** A simple application of level spreader or channel discharge will have no unreasonable construction cost.

---

## Workgroup Recommendation

**Workgroup 1 Recommendation Recommendation:** Consensus for Disapproval

**Workgroup 1 Reason:** Mr Farr disagrees, Emory stated VBCOA opposes unanimously consensus for disapproval

**Workgroup 2 Recommendation:** None

**Workgroup 2 Reason:** None

---

## Board Decision

None

# R-101.5 cdpVA-15

**Proponent :** Kenney Payne, Representing AIA-VA  
(kpayne@moseleyarchitects.com)

## 2012 Virginia Rehabilitation Code

**101.5 Use of terminology and notes.** ~~The term "this code," or "the code," where used in the provisions of Chapter 1, in Chapters 2–16 of the IEBC, or in the state amendments to the IEBC, means the VRC, unless the context clearly indicates otherwise. The term "this code," or "the code," where used in a code or standard referenced in the IEBC, 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, where the phrase "of the International Building Code under which the building was constructed" is used in the IEBC, it shall be construed to mean the USBC or other code that was in effect when the building was built. Further, 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 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. 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 -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 *Virginia Construction Code*, or VCC, unless the context clearly indicates otherwise.
4. Where the phrase "of the *International Building Code* under which the building was constructed" is used in the VEBC, it shall be construed to mean the USBC or other code that was in effect when the building was built.
5. 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.
6. Notes in the VEBC, in the codes and standards referenced in the VEBC, 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.
7. 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:** The VCC references other code that was in effect when the building was

~~built. Further, 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 IEBC, in the codes *International Codes* and standards referenced including 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 following major codes:~~

~~2015 International Plumbing Code (IPC)~~

~~2015 International Mechanical Code (IMC)~~

~~2014 NFPA 70~~

~~2015 International Fuel Gas Code (IFGC)~~

~~2015 International Energy Conservation Code (IECC)~~

~~2015 International Residential Code (IRC)~~

**Reason:** The entire paragraph has been converted to a list format, which is much easier to read and understand. Other than the new #7 and "Note" the text remains unchanged (except for "VEBC" in lieu of "VRC").

The added language under #7 clarifies that any VRC reference to the IBC means the VCC, which includes the Virginia amendments to the model IBC, as well as, any VRC references to of the other iCodes or standards means those including Virginia amendments. Otherwise, such references would be to the IBC (or other iCodes or standards) without the Virginia amendments.

The "Note" follows the same concept as that found in VCC 101.2, Note 1 to remind everyone of the "International Codes" referenced in the VEBC that might otherwise be amended in the USBC.

**Cost Impact:** None.

---

## Workgroup Recommendation

**Workgroup 1 Recommendation Recommendation:** Consensus for Approval

**Workgroup 1 Reason:** Consensus for approval pending Kennys changes when referencing the International Building Code and IBC/IEBC reference.

**Workgroup 2 Recommendation:** None

**Workgroup 2 Reason:** None

---

## Board Decision

None

---

R-101.5 cdpVA-15

# R-102.2(2) cdpVA-15

**Proponent :** Kenney Payne, Representing AIA-VA  
(kpayne@moseleyarchitects.com)

## 2012 Virginia Rehabilitation Code

### 102.2 Scope.

The provisions of this code shall control ~~the rehabilitation:~~

~~1. The *rehabilitation*, reconstruction, *alteration*, *repair*, and *change* *repair* of occupancy of ~~existing buildings~~ and structures in occupancies other than Group R-5 and shall be permitted to be used as an alternative to compliance with, or portions thereof.~~

**Exception:** ~~The use of the VCC for additions to buildings in any occupancy classification and for reconstruction, alteration or repair in occupancies classified as Group R-5 shall be permitted.~~

~~2. Additions to existing buildings and structures, or portions thereof.~~

**Exception:** ~~The use of the VCC shall be permitted.~~

~~3. The change of occupancy to other than occupancies classified as Group I-2 or I-3.~~

~~**Exception:** The use of this code shall not be permitted for change of occupancy involving Group I-2 or I-3.~~

**Exception:** ~~The use of the VCC for *change of occupancy* to occupancies classified as Group R-5 shall be permitted.~~

~~4. Retrofit provisions provided in Chapter 17.~~

**Reason:** The reformatting of VRC 102.2 should make it easier to understand which code (VEBC or VCC) applies to which occupancies.

Also, the original exception is misleading, since you can have a change of occupancy *involving* a Group I-2 and/or I-3. For example, one can go from a Group I-2 to a Group B, or go from a Group I-3 to a Group R; however, one cannot go from a particular Group to a Group I-2 or I-3.

If Group I-2 and/or Group I-3 are allowed to use the VRC/VEBC, even if changing to such Groups, then this code change would need to be revised accordingly.

**Cost Impact:** None.

---

## Workgroup Recommendation

**Workgroup 1 Recommendation:** None

**Workgroup 1 Reason:** Pending all submittals being sent in. Pending-CONSENSUS FOR APPROVAL  
PENDING WG 2

**Workgroup 2 Recommendation:** None

**Workgroup 2 Reason:** None

---

## **Board Decision**

None

**R-102.2(2) cdpVA-15**

---

# R-202(1) cdpVA-15

**Proponent :** Kenney Payne, Representing AIA-VA  
(kpayne@moseleyarchitects.com)

## 2015 International Existing Building Code

### SECTION 202 DEFINITIONS

#### **ALTERATION.**

Any construction or renovation to an existing structure other than a *repair* or *addition*.  
~~Alterations are classified as Level 1, Level 2 and Level 3.~~

**Reason:** Since the term "alteration" is used in the other compliance methods (Prescriptive, Performance, and Previous (proposed title under separate code change), and classifying alterations as Level 1, 2, and/or 3 is only required under the Work Area Compliance method, it could cause and has caused confusion since one generally cannot switch between compliance methods under a single permit unless otherwise approved by the building official.

In other words, I could not use the Prescriptive Compliance Method and then classify my *alterations* as Level 1, 2, and/or 3, because those classifications are only recognized under the Work Area Compliance Method.

**Cost Impact:** None.

---

### **Workgroup Recommendation**

**Workgroup 2 Recommendation:** None

**Workgroup 2 Reason:** None

---

### **Board Decision**

None

---

R-202(1) cdpVA-15

# R-202(2) cdpVA-15

**Proponent :** Kenney Payne, Representing AIA-VA  
(kpayne@moseleyarchitects.com)

## 2012 Virginia Rehabilitation Code

### SECTION 202 DEFINITIONS

#### **EXISTING BUILDING.**

A building for which a legal certificate of occupancy has been issued under any edition of the USBC or otherwise approved, and that has been occupied for its intended use; or, a building built prior to the initial edition of the USBC.

## 2015 International Existing Building Code

### SECTION 202 DEFINITIONS

#### ~~**EXISTING BUILDING.**~~

~~A building erected prior to the date of adoption of the appropriate code, or one for which a legal building permit has been issued.~~

**Reason:** There should be a way to address buildings that have been occupied, but have never been issued an "actual" certificate of occupancy. In some instances, there may not be any documentation, and in others, there may be a "document" but it is not an "official" certificate of occupancy. Per a strict reading of the current definition would such buildings be considered "existing buildings?" We all know they are there, and they have been or are occupied - there is just no piece of paper saying so.

This code change attempts to address that question by saying at some point, a code official "approved" such occupancy, and therefore such buildings would be considered an existing building.

**Cost Impact:** None.

---

## Workgroup Recommendation

**Workgroup 2 Recommendation:** None

**Workgroup 2 Reason:** None

---

## **Board Decision**

None

**R-202(2) cdpVA-15**

---

# R-202(3) cdpVA-15

**Proponent :** Kenney Payne, Representing AIA-VA  
(kpayne@moseleyarchitects.com)

## 2012 Virginia Construction Code

### SECTION 202 DEFINITIONS

#### **CHANGE OF OCCUPANCY.**

~~A change in the use or occupancy of any building or structure that would place the building or structure in a different division of the same group of occupancies or in a different group of occupancies; or a change in the purpose or level of activity within a building or structure that involves a change in application of the requirements of this code~~[REFER TO SEPARATE CODE CHANGE PROPOSAL].

## 2015 International Building Code

### SECTION 202 DEFINITIONS

#### **[A] ADDITION.**

~~An extension or increase in floor area or height  
See Section 202 of a building or structure~~the IEBC.

#### **[A] ALTERATION.**

~~Any construction or renovation to an *existing structure* other than *repair* or *addition*.  
See Section 202 of the VEBC.~~

#### **[A] CHANGE OF OCCUPANCY.**

~~A change in the purpose or level of activity within a building that involves a change in application  
See Section 202 of the requirements of this code~~VEBC.

#### **[BS] EXISTING STRUCTURE.**

~~A structure erected prior to the date of adoption  
See Section 202 of the appropriate code, or one for which a legal building *permit* has been issued~~VEBC. ~~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.~~

#### **[A] HISTORIC BUILDINGS.**

~~Buildings that are listed in or eligible for listing in  
See Section 202 of the National Register of Historic Places, or designated as historic under an appropriate state or local law~~VEBC.

**[A] REPAIR.**

~~The reconstruction or renewal~~

~~See Section 202 of any part of an existing building for the purpose of its maintenance or to correct damage~~IEBC.

**[EB] REROOFING.**

~~The process~~

~~See Section 202 of recovering or replacing an existing *roof covering*. See "Roof recover" and "Roof replacement."~~the IEBC.

**[BS] ROOF RECOVER.**

~~The process~~

~~See Section 202 of installing an additional *roof covering* over a prepared existing *roof covering* without removing the existing *roof covering*~~IEBC.

**[BS] ROOF REPAIR.**

~~Reconstruction or renewal~~

~~See Section 202 of any part of an existing roof for the purposes of its maintenance~~IEBC.

**[BS] ROOF REPLACEMENT.**

~~The process~~

~~See Section 202 of removing the existing *roof covering*, repairing any damaged substrate and installing a new *roof covering*~~IEBC.

**[BS] 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 percent~~

~~See Section 202 of the market value of the structure before the damage occurred~~VEBC.

**[BS] SUBSTANTIAL IMPROVEMENT.**

~~Any *repair*, reconstruction, rehabilitation, *alteration*, *addition* or other improvement of a building or structure, the cost of which equals or exceeds 50 percent~~

~~See Section 202 of the market value of the structure before the improvement or repair is started~~VEBC. ~~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 structure's continued designation as a historic structure.~~

## **[BS] SUBSTANTIAL STRUCTURAL DAMAGE.**

A condition where one or both

See Section 202 of the following apply:

1. The vertical elements of the lateral force-resisting system have suffered damage such that the lateral load-carrying capacity of any story in any horizontal direction has been reduced by more than 33 percent from its predamage condition.
2. The capacity of any vertical component carrying gravity load, or any group of such components, that supports more than 30 percent of the total area of the structure's floors and roofs has been reduced more than 20 percent from its predamage condition and the remaining capacity of such affected elements, with respect to all dead and *live loads*, is less than 75 percent of that required by this code for new buildings of similar structure, purpose and location.

VEBC.

## **2015 International Existing Building Code**

### **SECTION 202 DEFINITIONS**

#### **ALTERATION.**

Any construction or renovation to an existing structure other than a *repair* or *addition*. Alterations are classified as Level 1, Level 2 and Level 3.

#### **[A] APPROVED.**

Acceptable to the *code official* or authority having jurisdiction.

#### **CHANGE OF OCCUPANCY.**

A change in the use of the building or a portion of a building. A change of occupancy shall include any change of occupancy classification, any change from one group to another group within an occupancy classification or any change in use within a group for a specific occupancy classification.

[REFER TO SEPARATE CODE CHANGE PROPOSAL].

#### **DEFERRED SUBMITTAL.**

Those portions of the design that are not submitted at the time of the application and that are to be submitted to the *code official* within a specified period.

#### **EXISTING BUILDING.**

A building erected prior to the date of adoption of the appropriate code, or one for which a legal building permit has been issued.

[REFER TO SEPARATE CODE CHANGE PROPOSAL].

## **EXISTING STRUCTURE.**

A structure for which a legal building permit has been issued under any edition of the USBC or previously approved; or, a structure 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.

## **[A] FACILITY.**

~~All or any portion of buildings, structures, site improvements, elements and pedestrian or vehicular routes located on a site.~~

## **[BS] FLOOD HAZARD AREA.**

~~The greater of the following two areas:~~

- ~~1. The area within a flood plain subject to a 1 percent or greater chance of flooding in any year.~~
- ~~2. The area designated as a flood hazard area on a community's flood hazard map, or otherwise legally designated.~~

## **[A] REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE.**

~~A registered design professional engaged by the owner to review and coordinate certain aspects of the project, as determined by the code official, for compatibility with the design of the building or structure, including submittal documents prepared by others, deferred submittal documents and phased submittal documents.~~

## **[BS] SUBSTANTIAL IMPROVEMENT.**

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

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

## **UNSAFE.**

~~Buildings, structures or equipment that are unsanitary, or that are deficient due to inadequate means of egress facilities, inadequate light and ventilation, or that~~

~~constitute a fire hazard, or in which the structure or individual structural members meet the definition of "Dangerous," or that are otherwise dangerous to human life or the public welfare, or that involve illegal or improper occupancy or inadequate maintenance shall be deemed unsafe. A vacant structure that is not secured against entry shall be deemed unsafe.~~

**Reason:** 2012 VRC: A placeholder has been inserted to alert that a separate code change proposal is being submitted for consideration. If that code change is denied, then the existing VRC "change of occupancy" definition will remain.

2015 IBC / IEBC: Attempt to remove all rehab-centric definitions from the VCC/IBC so such definitions occur in only one place - the VRC. Oftentimes, the definitions in the VCC/IBC conflicted with the same word's definition in the VRC. When it says to "See IEBC," it is because the IEBC definition is okay and is not being proposed to be changed by this proposal. When it says, "See VEBC," it is because this proposal is submitting a change. If proposed changed definitions are denied, they should revert back to the "See IEBC" provision so such definitions would still be located in only one place/code book. If the proposal to switch VRC to VEBC is denied, then "VEBC" should be switched back to "VRC" in this proposal.

When words are deleted in their entirety, it is because they should use the definition already found in the IBC (e.g., "Approved," "Deferred Submittal," and "Flood Hazard Area" to name a few) or VMC (e.g., "Unsafe").

There should be a definition for an existing "structure" since a "building" is defined as having a roof and is intended to be occupied.

**Cost Impact:** None.

---

## **Workgroup Recommendation**

**Workgroup 2 Recommendation:** None

**Workgroup 2 Reason:** None

---

## **Board Decision**

None

---

**R-202(3) cdpVA-15**

# R-202(4) cdpVA-15

**Proponent :** Kenney Payne, Representing AIA-VA  
(kpayne@moseleyarchitects.com)

## 2015 International Existing Building Code

### SECTION 202 DEFINITIONS

#### **WORK AREA.**

~~That portion~~intended room, space, or portion~~portion~~ of a building ~~consisting of all~~ reconfigured spaces as indicated on the construction documents or structure where a wall or walls are added, relocated, or removed. Work area excludes ~~other:~~ the addition or elimination of any door or window; the reconfiguration or extension of any system; the installation of any additional equipment; the removal of finish flooring or ceiling materials; adjacent or other rooms, spaces, or portions of the building or structure where incidental work entailed by the intended work must be performed; and portions of the building or structure where work not initially intended ~~by the owner~~ is specifically required by this code.

**504.1 Scope.** Level 2 *alterations* ~~include the reconfiguration of space,~~ the addition or elimination of any door or window, the reconfiguration or extension of any system, or the installation of any additional equipment; and shall apply where the *work area* is less than 50 percent of the building area.

**801.1 Scope.** Level 2 *alterations* as described in Section 504 shall comply with the requirements of this chapter.

- **Exception:** Buildings in which the ~~reconfiguration~~alteration is exclusively the result of compliance with the accessibility requirements of Section 705.2 shall be permitted to comply with Chapter 7.

**809.1 Reconfigured Work areas or converted spaces.** All ~~reconfigured spaces~~work areas intended for occupancy and all spaces converted to habitable or occupiable space in any *work area* shall be provided with natural or mechanical ventilation in accordance with the *International Mechanical Code*.

- **Exception:** Existing mechanical ventilation systems shall comply with the requirements of Section 809.2.

**901.2 Compliance.** In addition to the provisions of this chapter, work shall comply with all of the requirements of Chapters 7 and 8. The requirements of Sections 803, 804 and 805 shall apply within all *work areas* whether or not they include exits and corridors shared by more than one tenant and regardless of the occupant load.

- **Exception:** Buildings in which the ~~reconfiguration of space~~alteration affecting exits or shared egress access is exclusively the result of compliance with the

accessibility requirements of Section 705.2 shall not be required to comply with this chapter.

**Reason:** As you consider this proposed code change, **keep in mind these salient points:**

1. Per 2012 VRC 102.1, the Code of Virginia and General Assembly of Virginia declared.

The **application of those building code requirements** currently in force to . . . 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.

2. Per the 2015 IEBC under "Effective Use of the IEBC":

Although many of these buildings are potentially salvageable, **rehabilitation is often cost-prohibitive because compliance with all of the requirements for new construction could require extensive changes that go well beyond the value of the building or the original scope of the rehabilitation.**

To **make the rehabilitation process easier**, this code allows for options for **controlled departure from full compliance with the International Codes** dealing with new construction, while maintaining basic levels for fire prevention, structural and life safety features of the rehabilitated building.

#### **The ISSUE:**

The current definition or "work area" is creating inconsistent interpretations - mostly over what is considered a "reconfigured space" and to some degree, what is a "work area." The fact that "work area" *appears* to be composed of Chapters 5-13 due to the "Work Area Compliance Method" has also led to this confusion (a separate code change proposal is dealing with this issue). This code change clarifies what a *work area* includes and what it does not include.

1. What is a work area? Work area is currently defined in 2015 IEBC (and 2012 VRC) Chapter 2 as:

**WORK AREA.** That portion or portions of a building consisting of all reconfigured spaces as indicated on the construction documents. Work area excludes other portions of the building where incidental work entailed by the intended work must be performed and portions of the building where work not initially intended by the owner is specifically required by this code.

- If one interprets almost every alteration, intended or not, including areas outside the "intended" alteration as a *work area*, more often than not the result would be a Level 3 alteration and/or supplemental requirements would be required. Is that the intent of the General Assembly, the Code of Virginia, and this code?
- If one interprets all "work" per Chapter 5 as a *work area*, the result would most likely be a Level 3 alteration and/or supplemental requirements would be required. Is that the intent of the General Assembly, the Code of Virginia, and this code?
- There are inconsistent interpretations of what is a *work area* even though it is a defined term, and/or what is a reconfigured space (which is not a defined term) - thus oftentimes leading to interpretations that encompass more portions of the building than may be actually required. Is that the intent of the General Assembly, the Code of Virginia, and this code?
- If required to comply with a Level 3 alteration and/or supplemental requirements in almost all cases, the owner may choose to abandon the rehabilitation of the project completely (or with reduced scope) - **a result contrary to the purpose** intended by the VRC, the General Assembly, and the Code of Virginia.

2. What is a reconfigured space? This is not a defined term in the code, but currently, has

EVERYTHING to do with what ends up being considered a *work area*. Why should so much be left to an undefined term? Should the "intended" *work area* be expanded to include adjacent, unintended, and/or other portions of the building that are clearly excluded from the *work area* per the definition?

3. Since the term "reconfigured space" is not defined, this is usually the basis upon which inconsistent interpretations are made. Under the scenarios above, some code officials have interpreted adjacent spaces were incidental and not part of the *intended* work, but those spaces were nonetheless reconfigured, so they required them to be included in the *work area*.

#### **The REMEDY:**

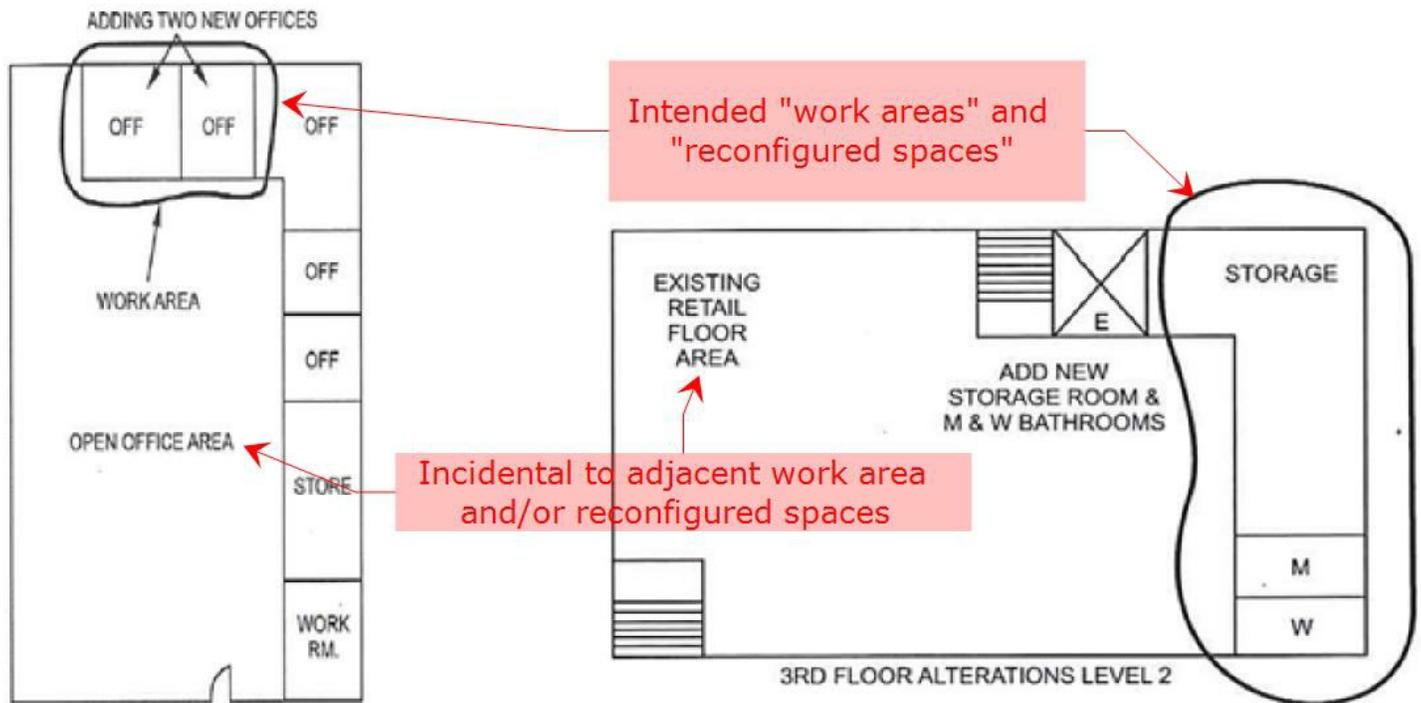
We either need a definition of "reconfigured space" as difficult as that may be, or delete the term entirely and incorporate that "concept" into the *work area* definition. The new "work area" definition in this code change proposal opted for the latter approach and breaks down as follows:

#### **"That intended room, space, or portion of a building or structure"**

- Starts off with "intended" so as to make clear that the proposed work must be intended (refer to the diagram below).
- Deleted "or portions" because it was not needed, especially when adding in "rooms and spaces."
- Added "or structure" because a *work area* could involve more than just a building.

To demonstrate the concept of "intended" and "incidental," refer to the diagram below (which was reproduced from a book published by the ICC):

- - You have an existing large open area with rooms down one side.
  - Your "intended" work is to add two (2) new offices.
  - When the new offices are added, you have reduced the SF of the large open area, thus technically the large open office area is also a reconfigured space, but since the open area is "incidental" to the "intended" new offices, the large open area is not considered part of your *work area* - only the "intended" new offices would be part of your *work area*.



(The above diagrams came from the "2009 IEBC Q&A" book published by the ICC)

### "where a wall or walls are added, relocated, or removed."

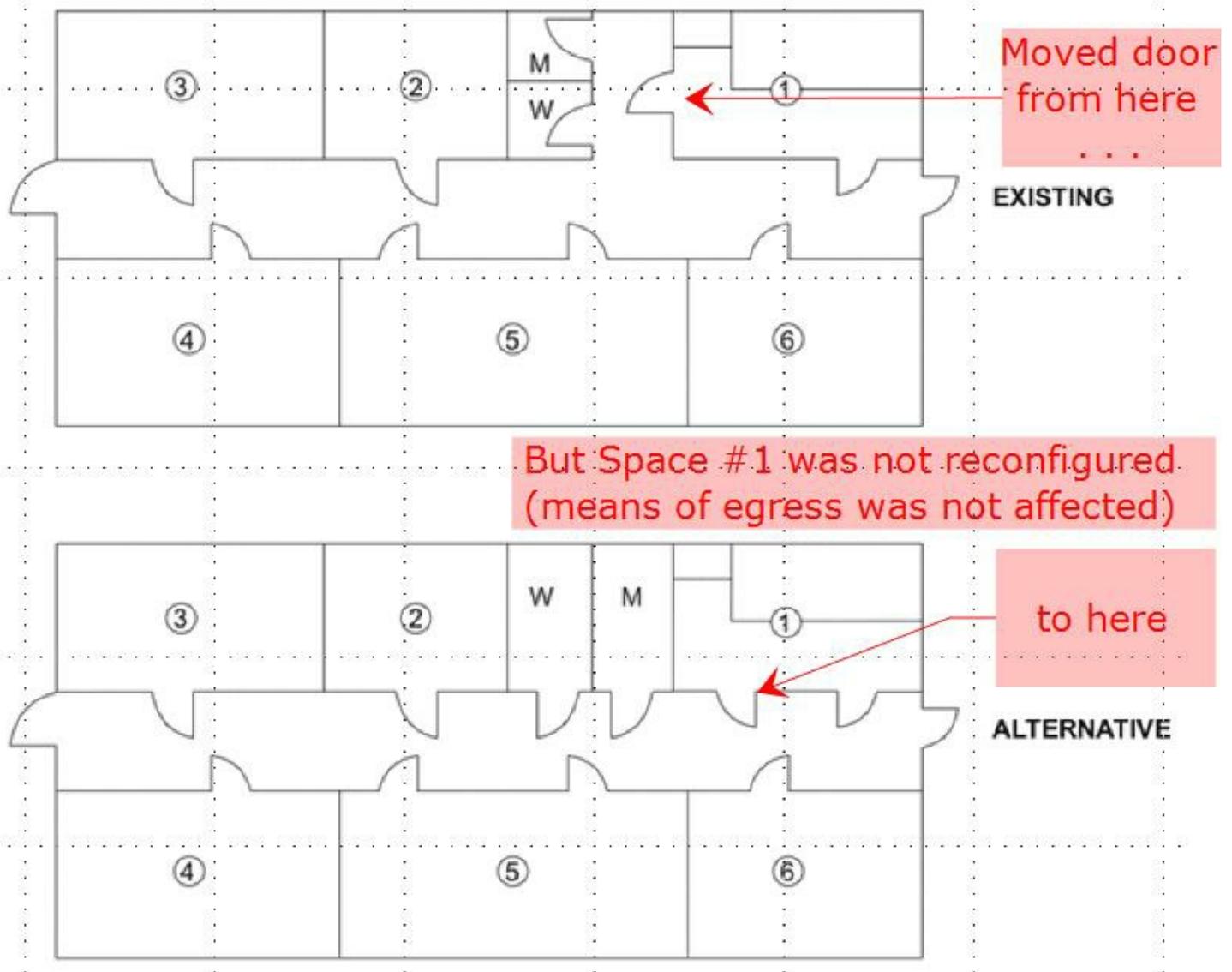
- Simply put, if the work involves the adding, relocating, or removing walls - it is a work area.
- Work not involving walls would be covered by other aspects of the VRC.
  - For example if the work did not involve walls, but would affect the means of egress, either Sections 905 or 805 would apply - if they would not apply, then you must still comply with Section 704. If the work does not maintain the level of protection, then it must be addressed.

### "Work area excludes:"

- As important as it is to include what *does* make a *work area*, it is just as important to indicate what *does not* make a *work area*.
- The current/existing definition already includes a list of components that are not included - this code change expands on that list; however, the components included in that expansion are directly from VRC Section 504.1.

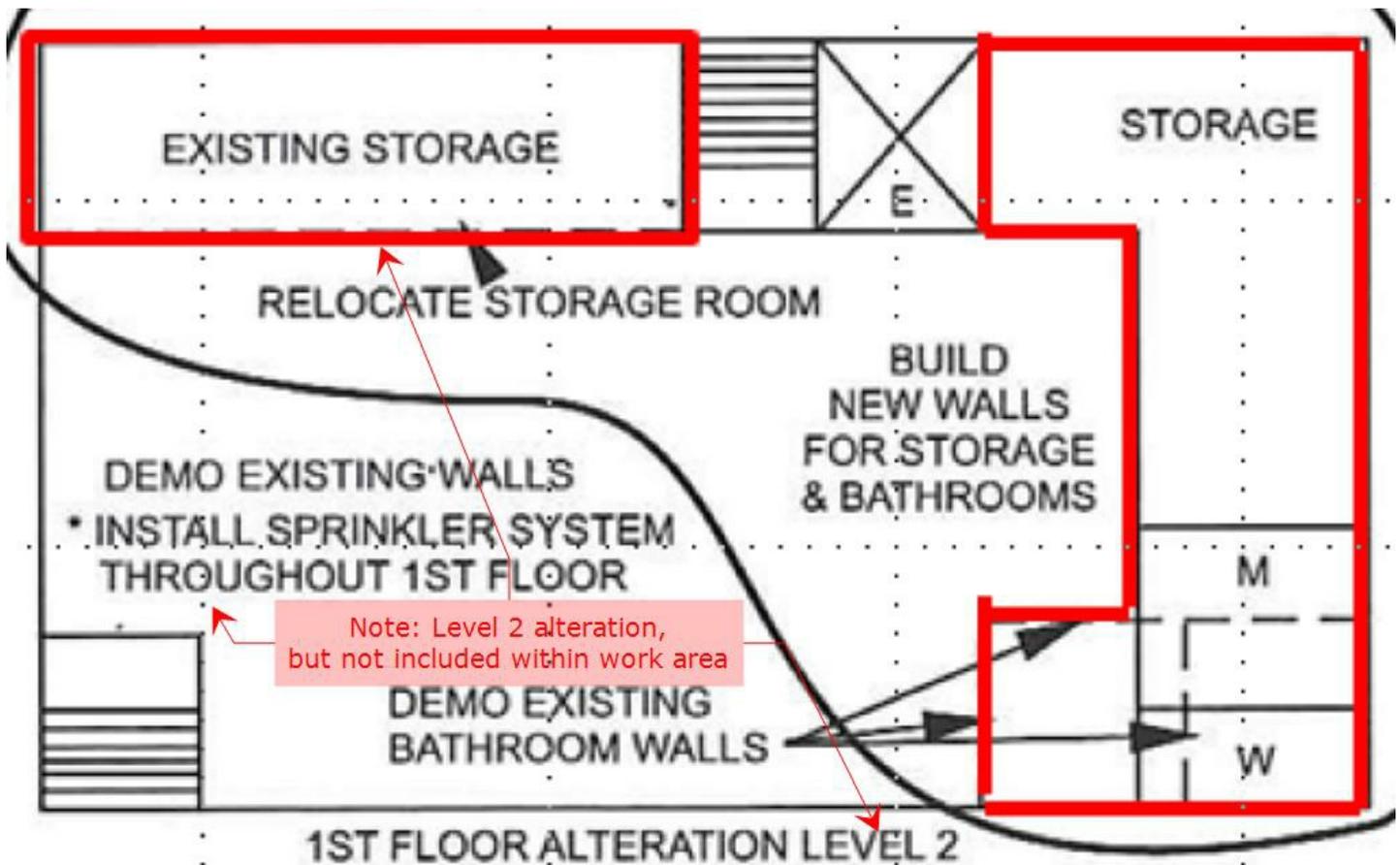
### "the addition or elimination of any door or window;"

- This language comes from VRC 504.1 and clarifies adding or removing a door(s) or window(s) does not constitute a reconfigured space, and therefore, would not - by itself - be considered a *work area*.
- Each of those components would still be considered a Level 2 alteration (per VRC 504.1), but they would not constitute a reconfigured space or *work area*.
- This should prevent an interpretation - that the relocation or adding of a door not only reconfigured the space to which the door was relocated/added, but also reconfigured the adjacent space/room (e.g., a corridor) on which the door opened onto. Refer to the diagram below:



**"the reconfiguration or extension of any system; the installation of any additional equipment;**

- This language comes from VRC 504.1 and clarifies that reconfiguring a "system" or just adding equipment does not constitute a reconfigured space, and therefore, would not be considered a *work area*.
- Each of those would still be considered a Level 2 alteration (per VRC 504.1), but they would not constitute a reconfigured space or *work area*.
  - For example, a new sprinkler system added would be considered a Level 2 alteration, but not a work area (refer to the diagram below).
- This should prevent an interpretation - that adding a sprinkler "system" would be interpreted as a *work area*.
  - A "real world" interpretation: The owner wanted to replace all of the existing HVAC equipment (above the ceiling) throughout the entire building. The AHJ said this work constituted a work area and since the work area exceeded 50% of the building area, they had to comply with Chapter 9 (Level 3) - which, in turn, would have required a new sprinkler system be added to the entire building. Under this proposed code change, the above should not happen!



**"the removal of finish flooring or ceiling materials;"**

- Clarifies that the work is to the floor area - and not the "volumetric area" (e.g., when an existing floor or ceiling finish is removed but not replaced) by deleting the term "reconfigured space."
- Some AHJ have said that the term "space" means 3-dimensions, so if the ceiling were lowered, raised, or removed - you have reconfigured the "space" (e.g., may require more CFM or sprinkler coverage). The same was said regarding the floor (the height of the space just grew by 1/2"). However, there are other portions of the VRC that address situations like these, the least of which is that you cannot make things worse than when you started (e.g., Section 701.2 which applies to ALL levels of alterations).

**"adjacent or other rooms, spaces, or portions of the building or structure where incidental work entailed by the intended work must be performed;"**

- Essentially uses the existing language of the current definition, with some technical changes.
  - Added the terms "adjacent," "rooms," "spaces," and "structure" to comport with the same language added to the first sentence.

**"and portions of the building or structure where work not initially intended by the owner is specifically required by this code."**

- Deleted "by the owner" as it is unnecessary and was not used consistently within the definition.
- Isn't all "work" instituted "by an owner"? (work is not initiated by the AHJ, the RDP, or the contractor, and if it is, they do so in the role of "the owner").
  - For example, in the current definition, why use the term "by the owner" in the last

part of the last sentence, but not the first part of the last sentence?

The purpose of the VRC is to **encourage rehabilitation**, not interpret the code which would place barriers for doing so - which takes us back to the **salient points** at the beginning of this supporting statement. So, this code change proposal is in keeping with the "purpose" of the VRC. In other words, **"Incentivize, don't penalize."**

Regarding proposed code changes to Sections 504.1 and 901.2:

The term "reconfiguration of space" is not a defined term, yet it drives the defined term of "work area." So, this code change proposes to address a definition of "reconfigured space" within the current definition of "work area" and then we would no longer need to use the term "reconfigured space" throughout the rest of the VRC.

The other issue is that we know when the "work area" exceeds 50%, it is considered a Level 3 alteration; however, although it may be implied, it is not absolutely clear what happens when the "work area" is less than 50% of the building area. This code change clarifies the issue.

The same reasoning can be used for the proposed changes to Section 901.2 - we should use *defined* terms, not terms that are ambiguous and can only lead to and has already caused confusion and can be interpreted numerous ways - leading to inconsistent interpretations.

Regarding proposed code changes to the Exceptions to Sections 801.1 and 901.2:

For the previously stated reasons for deleting the term "reconfiguration," such attempts at improving accessibility could include work that has nothing to do with "reconfiguration" or "reconfiguring" spaces. A simple widening of a single door (a Level 2 alteration but not a reconfiguration of the space) or lowering mirrors and adding accessories and signage (other examples of *alterations*) have nothing to do with reconfiguring spaces. However, if it did involve reconfiguring the space, it would still be captured by either the term "*alteration*" because as a defined term, means anything other than a *repair* or *addition* - or by the term "work area" per its new proposed definition.

**Cost Impact:** Construction costs would be REDUCED if a Level 3 and/or supplemental requirements could be avoided simply over whether the interpretation of a "work area" includes adjacent spaces or not or what constitutes a "reconfigured space;" thus, complying with what the General Assembly and Code of Virginia intended.

---

## Workgroup Recommendation

**Workgroup 2 Recommendation:** None

**Workgroup 2 Reason:** None

---

## Board Decision

None

---

R-202(4) cdpVA-15

# R-301.1 cdpVA-15

**Proponent :** Kenney Payne, Representing AIA-VA  
(kpayne@moseleyarchitects.com)

## 2015 International Existing Building Code

**301.1 General.** ~~The repair, alteration, change of occupancy, addition or relocation of all existing buildings shall comply with one of the methods listed in Sections 301.1.1 through 301.1.3~~301.1.4 as selected by the applicant. Sections 301.1.1 through ~~301.1.3~~301.1.4 shall not be applied in combination with each other. ~~Where this code requires consideration of the seismic force-resisting system of an existing building subject to repair, alteration, change of occupancy, addition or relocation of existing buildings, the seismic evaluation and design shall be based on Section 301.1.4 regardless of which compliance method is used.~~

**Exception:** ~~Subject to the approval of the code official, alterations complying with the laws in existence at the time the building or the affected portion of the building was built shall be considered in compliance with the provisions of this code unless the building is undergoing more than a limited structural alteration as defined in Section 907.4.4. New structural members added as part of the alteration shall comply with the International Building Code. Alterations of existing buildings in flood hazard areas shall comply with Section 701.3.~~

**301.1.1 Prescriptive compliance method.** ~~Repairs, alterations, additions and changes of occupancy complying with Chapter 4 of this code in buildings complying with the International Fire Code shall be considered in compliance with the provisions of this code.~~

**301.1.2 Work area compliance method.** ~~Repairs, alterations, additions, changes in occupancy and relocated buildings complying with the applicable requirements of Chapters 5 through 13 of this code shall be considered in compliance with the provisions of this code.~~

**301.1.3 Performance compliance method.** ~~Repairs, alterations, additions, changes in occupancy and relocated buildings complying with Chapter 14 of this code shall be considered in compliance with the provisions of this code.~~

**301.1.4 Previous code compliance method.** Alterations and repairs conforming to the requirements of the USBC edition under which the building or structure or the affected portion of the building or structure was constructed or previously approved, shall be considered in compliance with the provisions of this code. New structural members added as part of the alteration or repairs shall comply with the IBC. Alterations and repairs of existing buildings in flood hazard areas shall comply with Sections 601.3, for repairs, or 701.3 for alterations.

**[BS] 301.1.4.2301.2 Seismic evaluation and design procedures.** Where this code requires consideration of the seismic force-resisting system of an existing building subject to repair, alteration, change of occupancy, addition or relocation of existing buildings, the seismic evaluation and design shall be based on this section regardless of which compliance method is used. The seismic evaluation and design shall be based on the procedures specified in the *International Building Code* or ASCE 41. The procedures contained in Appendix A of this code shall be permitted to be used as specified in Section ~~301.1.4.2~~301.2.2.

**[BS] 301.1.4.1301.2.1 Compliance with International Building Code-level seismic forces.** Where compliance with the seismic design provisions of the International Building Code is required, the criteria shall be in accordance with one of the following:

1. One-hundred percent of the values in the International Building Code. Where the existing seismic force-resisting system is a type that can be designated as "Ordinary," values of  $R$ ,  $\Omega_0$  and  $C_d$  used for analysis in accordance with Chapter 16 of the International Building Code 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 twolevel performance objective in Table ~~301.1.4.1~~301.2.1 for the applicable risk category.

**TABLE [BS] 301.1.4.1301.2.1  
PERFORMANCE OBJECTIVES FOR USE IN ASCE 41 FOR COMPLIANCE WITH  
INTERNATIONAL BUILDING CODE-LEVEL SEISMIC FORCES**

<b>RISK CATEGORY (Based on IBC Table 1604.5)</b>	<b>STRUCTURAL PERFORMANCE LEVEL FOR USE WITH BSE-1N EARTHQUAKE HAZARD LEVEL</b>	<b>STRUCTURAL PERFORMANCE LEVEL FOR USE WITH BSE-2N EARTHQUAKE HAZARD LEVEL</b>
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)

**[BS] 301.1.4.2301.2.2 Compliance with reduced International Building Code-level seismic forces.** Where seismic evaluation and design is permitted to

meet reduced *International Building Code* seismic force levels, the criteria used shall be in accordance with one of the following:

1. The *International Building Code* using 75 percent of the prescribed forces. Values of  $R$ ,  $\Omega_0$  and  $C_d$  used for analysis shall be as specified in Section ~~301.1.4.1~~301.2.1 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 multiunit 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 ~~301.1.4.2~~301.2.2 for the applicable risk category.

**TABLE [BS] ~~301.1.4.2~~301.2.2**  
**PERFORMANCE OBJECTIVES FOR USE IN ASCE 41 FOR COMPLIANCE WITH REDUCED INTERNATIONAL BUILDING CODE-LEVEL SEISMIC FORCES**

<b>RISK CATEGORY (Based on IBC Table 1604.5)</b>	<b>STRUCTURAL PERFORMANCE LEVEL FOR USE WITH BSE- 1E EARTHQUAKE HAZARD LEVEL</b>
I	Life Safety (S-3)
II	Life Safety (S-3)
III	Damage Control (S-2). See Note 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 provisions midway between those specified for Life Safety and Immediate Occupancy performance.

**Reason:** Tried to simplify the language when determining compliance methods, including taking an "exception" (which is actually a 4<sup>th</sup> compliance method) and giving it its own "section" like the other compliance methods. It also moves structural-related provisions from 301.1 to the structural part of the Section - which would now become 301.2. That way, all structural-related provisions are kept together and not spread around.

The proposed change to 301.1.1 is from a separate code change. That code change could be withdrawn if this code is approved as submitted. If that code change is denied, then this portion may need to be revised as well. There is a separate code change proposal to revise the "Work area" compliance method name to "Proportional."

The rest of the changes are related to renumbering only.

**Cost Impact:** None.

---

## **Workgroup Recommendation**

**Workgroup 2 Recommendation:** None

**Workgroup 2 Reason:** None

---

## **Board Decision**

None

**R-301.1 cdpVA-15**

---

# R-301.1.1 cdpVA-15

**Proponent :** Kenney Payne, Representing AIA-VA  
(kpayne@moseleyarchitects.com)

## 2015 International Existing Building Code

**301.1.1 Prescriptive compliance method.** *Repairs, alterations, additions and changes of occupancy* complying with Chapter 4 of this code ~~in buildings complying with the *International Fire Code*~~ shall be considered in compliance with the provisions of this code.

~~**302.2 Additional codes.** *Alterations, repairs, additions and changes of occupancy to, or relocation of, existing buildings and structures shall comply with the provisions for alterations, repairs, additions and changes of occupancy or relocation, respectively, in this code and the *International Energy Conservation Code, International Fire Code, International Fuel Gas Code, International Mechanical Code, International Plumbing Code, International Property Maintenance Code, International Private Sewage Disposal Code, International Residential Code* and NFPA 70. Where provisions of the other codes conflict with provisions of this code, the provisions of this code shall take precedence.*~~

**302.5 Fire alarm systems.** An approved fire alarm system shall be installed in existing buildings and structures in accordance with Sections 302.5.1 through 302.5.7 and provide occupant notification in accordance with Section 907.5 of the *International Building Code* unless other requirements are provided by other sections of this code.

**Exception:** Occupancies with an existing, previously approved fire alarm system.

**302.5.1 Group E.** A fire alarm system shall be installed in accordance with Section 907.2.3 of the *International Building Code* in existing occupancies classified as Group E.

### **Exceptions:**

1. A manual fire alarm system is not required in a building with a maximum area of 1,000 square feet (93 m<sup>2</sup>) that contains a single classroom and is located not closer than 50 feet (15 240 mm) from another building.

2. A manual fire alarm system is not required in Group E occupancies with an occupant load less than 50.

**302.5.2 Group I-1.** An automatic fire alarm system shall be installed in accordance with Section 907.2.6.1 of the *International Building Code* in existing facilities classified as Group I-1.

**Exception:** Where each sleeping room has a means of egress door opening directly to an exterior egress balcony that leads directly to the exits in accordance with Section 1021 of the *International Building Code*, and the building is not more than three stories in height.

**302.5.3 Group I-2.** In occupancies classified as Group I-2, an automatic fire alarm system shall be installed in accordance with Section 302.5.3.1.

**Exception:** Manual fire alarm boxes in patient sleeping areas shall not be required at exits if located at all nurses' control stations or other constantly attended staff locations, provided such stations are visible and continuously accessible and that travel distances required in Section 907.5.2.1 of the *International Building Code* are not exceeded.

**302.5.3.1 Corridors in Group I-2.** An automatic smoke detection system shall be installed in corridors in Group I-2 Condition 1 facilities and spaces permitted to be open to the corridors by Section 407.2 of the *International Building Code*. The system shall be activated in accordance with Section 907.4 of the *International Building Code*. Group I-2 Condition 2 occupancies shall be equipped with an automatic smoke detection system as required in Section 407 of the *International Building Code*.

**Exceptions:**

1. Corridor smoke detection is not required in smoke compartments that contain sleeping units where such units are provided with smoke detectors that comply with UL 268. Such detectors shall provide a visual display on the corridor side of each sleeping unit and shall provide an audible and visual alarm at the care providers' station attending each unit.

2. Corridor smoke detection is not required in smoke compartments that contain sleeping units where sleeping unit doors are equipped with automatic door-closing devices with integral smoke detectors on the unit sides installed in accordance with their listing, provided that the integral detectors perform the required alerting function.

**302.5.4 Group I-3.** An automatic and manual fire alarm system shall be installed in accordance with Section 907.2.6.3 of the *International Building Code* in existing occupancies classified as Group I-3.

**302.5.5 Group R-1.** A fire alarm system and smoke alarms shall be installed in accordance with Sections 302.5.5.1 through 302.5.5.2.1 in existing occupancies classified as Group R-1.

**302.5.5.1 Group R-1 hotel and motel manual fire alarm system.** A manual fire alarm system that activates the occupant notification system in accordance with Section 907.5 of the *International Building Code* shall be installed in existing Group R-1 hotels and motels more than three stories or with more than 20 sleeping units.

**Exceptions:**

1. Buildings less than two stories in height where all sleeping units, attics and crawl spaces are separated by 1-hour fire-resistance-rated construction and each sleeping

unit has direct access to a public way, egress court or yard.

2. Manual fire alarm boxes are not required throughout the building where the following conditions are met:

2.1. The building is equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2 of the *International Building Code*.

2.2. The notification appliances will activate upon sprinkler water flow.

2.3. Not less than one manual fire alarm box is installed at an approved location.

#### **302.5.5.1.1 Group R-1 hotel and motel automatic smoke detection**

**system.** An automatic smoke detection system that activates the occupant notification system in accordance with Section 907.5 of the *International Building Code* shall be installed in existing Group R-1 hotels and motels throughout all interior corridors serving sleeping rooms not equipped with an approved, supervised sprinkler system installed in accordance with Section 903 of the *International Building Code*.

**Exception:** An automatic smoke detection system is not required in buildings that do not have interior corridors serving sleeping units and where each sleeping unit has a means of egress door opening directly to an exit or to an exterior exit access that leads directly to an exit.

#### **302.5.5.2 Group R-1 boarding and rooming houses manual fire alarm**

**system.** A manual fire alarm system that activates the occupant notification system in accordance with Section 907.5 of the *International Building Code* shall be installed in existing Group R-1 boarding and rooming houses.

**Exception:** Buildings less than two stories in height where all sleeping units, attics and crawl spaces are separated by 1-hour fire-resistance-rated construction and each sleeping unit has direct access to a public way, egress court or yard.

#### **302.5.5.2.1 Group R-1 boarding and rooming houses automatic smoke**

**detection system.** An automatic smoke detection system that activates the occupant notification system in accordance with Section 907.5 of the *International Building Code* shall be installed in existing Group R-1 boarding and rooming houses throughout all interior corridors serving sleeping units not equipped with an approved, supervised sprinkler system installed in accordance with Section 903 of the *International Building Code*.

**Exception:** Buildings equipped with single-station smoke alarms meeting or exceeding the requirements of Section 907.2.11.1 of the *International Building Code* and where the fire alarm system includes not less than one manual fire alarm box per floor arranged to initiate the alarm.

**302.5.6 Group R-2.** A manual fire alarm system that activates the occupant notification system in accordance with Section 907.5 of the *International Building Code*

shall be installed in existing occupancies classified as Group R-2 more than three stories in height or with more than 16 dwelling or sleeping units.

**Exceptions:**

1. Where each living unit is separated from other contiguous living units by fire barriers having a fire-resistance rating of not less than 3/4 hour, and where each living unit has either its own independent exit or its own independent stairway or ramp discharging at grade.

2. A separate fire alarm system is not required in buildings that are equipped throughout with an approved supervised automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2 of the *International Building Code* and having a local alarm to notify all occupants.

3. A fire alarm system is not required in buildings that do not have interior corridors serving dwelling units and are protected by an approved automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2 of the *International Building Code*, provided that dwelling units either have a means of egress door opening directly to an exterior exit access that leads directly to the exits or are served by openended corridors designed in accordance with Section 1027.6, Exception 3 of the *International Building Code*.

4. A fire alarm system is not required in buildings that do not have interior corridors serving dwelling units, do not exceed three stories in height and comply with both of the following:

4.1. Each dwelling unit is separated from other contiguous dwelling units by fire barriers having a fire-resistance rating of not less than 3/4 hour.

4.2. Each dwelling unit is provided with hardwired, interconnected smoke alarms as required by Section 907.2.11 of the *International Building Code*.

**302.5.7 Group R-4.** A manual fire alarm system that activates the occupant notification system in accordance with Section 907.5 of the *International Building Code* shall be installed in existing Group R-4 residential care/assisted living facilities in accordance with Section 907.2.10.1 of the *International Building Code*.

**Exceptions:**

1. Where there are interconnected smoke alarms meeting the requirements of Section 907.2.11 of the *International Building Code* and there is not less than one manual fire alarm box per floor arranged to continuously sound the smoke alarms.

2. Other manually activated, continuously sounding alarms approved by the building official.

**302.6 Single- and multiple-station smoke alarms.** Single and multiple-station smoke alarms shall be installed in existing Group I-1 and R occupancies in accordance

with Sections 302.6.1 through 302.6.3.

**302.6.1 Where required.** Existing Group I-1 and R occupancies shall be provided with single-station smoke alarms in accordance with Section 907.2.11 of the *International Building Code*. Interconnection and power sources shall be in accordance with Sections 302.6.2 and 302.6.3, respectively.

**Exceptions:**

1. Where the code that was in effect at the time of construction required smoke alarms and smoke alarms complying with those requirements are already provided.
2. Where smoke alarms have been installed in occupancies and dwellings that were not required to have them at the time of construction, additional smoke alarms shall not be required provided that the existing smoke alarms comply with requirements that were in effect at the time of installation.
3. Where smoke detectors connected to a fire alarm system have been installed as a substitute for smoke alarms.

**302.6.2 Interconnection.** Where more than one smoke alarm is required to be installed within an individual dwelling or sleeping unit, the smoke alarms shall be interconnected in such a manner that the activation of one alarm will activate all of the alarms in the individual unit. Physical interconnection of smoke alarms shall not be required where listed wireless alarms are installed and all alarms sound upon activation of one alarm. The alarm shall be clearly audible in all bedrooms over background noise levels with all intervening doors closed.

**Exceptions:**

1. Interconnection is not required in buildings that are not undergoing *alterations, repairs* or construction of any kind.
2. Smoke alarms in existing areas are not required to be interconnected where *alterations or repairs* do not result in the removal of interior wall or ceiling finishes exposing the structure, unless there is an attic, crawl space or basement available that could provide access for interconnection without the removal of interior finishes.

**302.6.3 Power source.** Single-station smoke alarms shall receive their primary power from the building wiring provided that such wiring is served from a commercial source and shall be equipped with a battery backup. Smoke alarms with integral strobes that are not equipped with battery backup shall be connected to an emergency electrical system. Smoke alarms shall emit a signal when the batteries are low. Wiring shall be permanent and without a disconnecting switch other than as required for overcurrent protection.

**Exceptions:**

1. Smoke alarms are permitted to be solely battery operated in existing buildings.

where construction is not taking place.

2. Smoke alarms are permitted to be solely battery operated in buildings that are not served from a commercial power source.

3. Smoke alarms are permitted to be solely battery operated in existing areas of buildings undergoing *alterations or repairs* that do not result in the removal of interior walls or ceiling finishes exposing the structure, unless there is an attic, crawl space or basement available that could provide access for building wiring without the removal of interior finishes.

**402.5 Smoke alarms in existing portions of a building.** Where an *addition* is made to a building or structure of a Group R or I-1 occupancy, the *existing building* shall be provided with smoke alarms in accordance with Section ~~1103.8~~ 302.5 of the ~~*International Fire Code*~~ this code.

**403.10 Smoke alarms.** Individual sleeping units and individual dwelling units in Group R and I-1 occupancies shall be provided with smoke alarms in accordance with Section ~~1103.8~~ 302.5 of the ~~*International Fire Code*~~ this code.

**803.2.1 Existing vertical openings.** All existing interior vertical openings connecting two or more floors shall be enclosed with approved assemblies having a fire-resistance rating of not less than 1 hour with approved opening protectives.

• **Exceptions:**

1. Where vertical opening enclosure is not required by the ~~*International Building Code*~~ ~~or the *International Fire Code*~~.
2. Interior vertical openings other than stairways may be blocked at the floor and ceiling of the *work area* by installation of not less than 2 inches (51 mm) of solid wood or equivalent construction.
3. The enclosure shall not be required where:
  - 3.1. Connecting the main floor and mezzanines; or
  - 3.2. All of the following conditions are met:
    - 3.2.1. The communicating area has a low hazard occupancy or has a moderate hazard occupancy that is protected throughout by an automatic sprinkler system.
    - 3.2.2. The lowest or next to the lowest level is a street floor.
    - 3.2.3. The entire area is open and unobstructed in a manner such that it may be assumed that a fire in any part of the interconnected spaces will be readily obvious to all of the occupants.
    - 3.2.4. Exit capacity is sufficient to provide egress simultaneously for all occupants of all levels by considering all areas to be a single floor area for the determination of required exit capacity.
    - 3.2.5. Each floor level, considered separately, has at least one-half of its individual required exit

capacity provided by an exit or exits leading directly out of that level without having to traverse another communicating floor level or be exposed to the smoke or fire spreading from another communicating floor level.

4. In Group A occupancies, a minimum 30-minute enclosure shall be provided to protect all vertical openings not exceeding three stories.
5. In Group B occupancies, a minimum 30-minute enclosure shall be provided to protect all vertical openings not exceeding three stories. This enclosure, or the enclosure specified in Section 803.2.1, shall not be required in the following locations:
  - 5.1. Buildings not exceeding 3,000 square feet (279 m<sup>2</sup>) per floor.
  - 5.2. Buildings protected throughout by an approved automatic fire sprinkler system.
6. In Group E occupancies, the enclosure shall not be required for vertical openings not exceeding three stories when the building is protected throughout by an approved automatic fire sprinkler system.
7. In Group F occupancies, the enclosure shall not be required in the following locations:
  - 7.1. Vertical openings not exceeding three stories.
  - 7.2. Special purpose occupancies where necessary for manufacturing operations and direct access is provided to at least one protected stairway.
  - 7.3. Buildings protected throughout by an approved automatic sprinkler system.
8. In Group H occupancies, the enclosure shall not be required for vertical openings not exceeding three stories where necessary for manufacturing operations and every floor level has direct access to at least two remote enclosed stairways or other approved exits.
9. In Group M occupancies, a minimum 30-minute enclosure shall be provided to protect all vertical openings not exceeding three stories. This enclosure, or the enclosure specified in Section 803.2.1, shall not be required in the following locations:
  - 9.1. Openings connecting only two floor levels.
  - 9.2. Occupancies protected throughout by an approved automatic sprinkler system.
10. In Group R-1 occupancies, the enclosure shall not be required for vertical openings not exceeding three stories in the following locations:
  - 10.1. Buildings protected throughout by an approved automatic sprinkler system.
  - 10.2. Buildings with less 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:
    - 10.2.1. Any exit access corridor exceeding 8 feet (2438 mm) in length that serves two means of egress, one of which is an unprotected vertical

opening, shall have at least one of the means of egress separated from the vertical opening by a 1-hour fire barrier; and

10.2.2. The building is protected throughout by an automatic fire alarm system, installed and supervised in accordance with the *International Building Code*.

11. In Group R-2 occupancies, a minimum 30-minute enclosure shall be provided to protect all vertical openings not exceeding three stories. This enclosure, or the enclosure specified in Section 803.2.1, shall not be required in the following locations:
  - 11.1. Vertical openings not exceeding two stories with not more than four dwelling units per floor.
  - 11.2. Buildings protected throughout by an approved automatic sprinkler system.
  - 11.3. 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 Section 804.4.
12. One- and two-family dwellings.
13. 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.
14. Group S occupancies where vertical opening protection is not required for open parking garages and ramps.

**803.2.3 Supplemental stairway enclosure requirements.** Where the *work area* on any floor exceeds 50 percent of that floor area, stairways that are part of the means of egress serving the *work area* shall, ~~at a minimum,~~ be enclosed with smoke-tight construction on the highest *work area* floor and all floors below.

- **Exception:** Where stairway enclosure is not required by the *International Building Code* ~~or the *International Fire Code*~~.

**804.4.1 Occupancy requirements.** A fire alarm system shall be installed in accordance with Sections 804.4.1.1 through 804.4.1.7 and Section 302.6 of this code. 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 within the *work area* shall be provided and automatically activated.

- **Exceptions:**
  1. Occupancies with an existing, previously approved fire alarm system.
  2. Where selective notification is permitted, alarm-notification appliances shall be automatically activated in the areas selected.

**804.4.1.1 Group E.** ~~A fire alarm system shall be installed in In work areas of Group E occupancies classified as required by the *International Fire Code* for existing Group E occupancies.~~

**804.4.1.2 Group I-1.** ~~A fire alarm system shall be installed in In work areas of classified as Group I-1 residential care/ assisted living facilities as required by the *International Fire Code* for existing Group I-1 occupancies.~~

**804.4.1.3 Group I-2.** ~~A fire alarm system shall be installed throughout Throughout occupancies classified as Group I-2 occupancies as required by the *International Fire Code*.~~

**804.4.1.4 Group I-3.** ~~A fire alarm system shall be installed in In work areas of classified as Group I-3 occupancies as required by the *International Fire Code*.~~

**804.4.1.5 Group R-1.** ~~A fire alarm system shall be installed in Throughout occupancies classified as Group R-1 occupancies as required by the *International Fire Code* for existing Group R-1 occupancies.~~

**804.4.1.6 Group R-2.** ~~A fire alarm system shall be installed in In work areas of classified as Group R-2 apartment buildings as required by the *International Fire Code* for existing Group R-2 occupancies.~~

**804.4.1.7 Group R-4.** ~~A fire alarm system shall be installed in In work areas of classified as Group R-4 residential care/ assisted living facilities as required by the *International Fire Code* for existing Group R-4 occupancies.~~

**804.4.3 Smoke alarms.** Individual sleeping units and individual dwelling units in any *work area* in Group R and I-1 occupancies shall be provided with smoke alarms in accordance with the *International Fire Code*.

**Exception:** ~~Interconnection of smoke alarms outside of the *work area* shall not be required.~~

Section 302.5 of this code.

**Exception:** Interconnection of smoke alarms outside of the *work area* shall not be required.

**1012.5.1.1 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 *International Building Code* 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 Fire 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 *International Building Code* without an increase allowed for an automatic sprinkler system in accordance with Section 506 of the *International Building Code*.
  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 *International Building Code*.
- **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 1 hour provided the height and number of stories increases allowed for an automatic sprinkler system by Section 504 of the *International Building Code* are not used for the buildings.

**1104.1 Smoke alarms in existing portions of a building.** Where an *addition* is made to a building or structure of a Group R or I-1 occupancy, the *existing building* shall be provided with smoke alarms as required by Section ~~1103.8~~ 302.5 of the ~~International Fire Code~~ this code or Section R314 of the *International Residential Code* as applicable.

**1301.2 Conformance.** The building shall be safe for human occupancy as determined by the ~~International Fire Code~~ and building code under which the International Property Maintenance Code building or structure or the affected portion of the building or structure was constructed or previously approved. Any *repair, alteration, or change of occupancy* undertaken within the moved 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 *International Building Code* or the *International Residential Code* as applicable.

~~**1401.3.2 Compliance with other codes.** Buildings that are evaluated in accordance with this section shall comply with the *International Fire Code* and *International Property Maintenance Code*.~~

**1401.6.8.1 Categories.** The categories for automatic fire detection are:

1. Category a—None.
2. ~~Category b—Existing smoke detectors in HVAC systems and maintained in accordance with the *International Fire Code*.~~
2. Category b—Existing smoke detectors in HVAC systems and maintained in

accordance with the building code under which the building or structure or the affected portion of the building or structure was constructed or previously approved.

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.

**1401.6.14 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 ~~*International Fire Code*~~building code under which the building or structure or the affected portion of the building or structure was constructed or previously approved. Under the categories and occupancies in Table 1401.6.14, determine the appropriate value and enter that value into Table 1401.7 under Safety Parameter 1401.6.14, Elevator Control, for fire safety, means of egress and general safety. The values shall be zero for a single-story building.

**1401.6.14.1 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 ~~*International Fire Code*~~building code under which the building or structure or the affected portion of the building or structure 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.

**[BG] 1501.5 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 Building Code*~~.

**[F] 1504.1 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 Fire 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, but not limited to, the storage and use of flammable and combustible liquids.

**[F] 1504.2 Fire hazards.** The provisions of this code and of the International Statewide Fire Prevention Code shall be strictly observed to safeguard against all fire hazards attendant upon construction operations.

**Reason:** Attempt was made to remove all references to the *International Fire Code* and either delete it without substitution or replace with the appropriate code reference (i.e., VRC, IBC or SFPC) since construction requirements in the IFC are generally not enforceable, and most retrofit requirements are limited in Virginia to those identified in Chapter 17 of the VRC. When such IFC construction-related provisions were needed to make the provision work, those original referenced sections and exceptions were added as new VRC Sections 302.5 and 302.6. The numbering assumes the deletion of IEBC Section 302.2 is approved under this code change proposal. If that is not approved, then the numbers would be 302.6 and 302.7, respectively.

The "additional codes" references were deleted since VRC/VCC Chapter 1 governs what other codes are applicable, especially as it relates to the IFC and IPMC.

The revisions proposed for Section 804.4.1 is strictly formatting to streamline the provisions and should not include technical changes.

The language used regarding "building under which . . . was constructed" is identical to the language used in other proposed VRC changes. This phrase can be revised as deem appropriate to obtain support or approval as necessary.

cdpVA does not allow revisions to VRC Chapter 16 (Reference Standards), but it would be nice if the approved deleted IFC references were correlated with Chapter 16.

**Cost Impact:** None.

---

## **Workgroup Recommendation**

**Workgroup 2 Recommendation:** None

**Workgroup 2 Reason:** None

---

## **Board Decision**

None

---

**R-301.1.1 cdpVA-15**

## R-301.1.2 cdpVA-15

**Proponent :** Kenney Payne, Representing AIA-Virginia  
(kpayne@moseleyarchitects.com)

### 2015 International Existing Building Code

**301.1.2 ~~Work area~~Proportional compliance method.** *No change to text.*

**Reason:** The term "Work area" when used to describe an entire "compliance method" leads to confusion among owners, designers, reviewers, code and fire officials. "Work area" is a defined term and involves reconfigured spaces. However, not all "work" covered under the "work area" compliance method is actually "work areas!" A "work area" is but a small part of this entire compliance method, yet the entire method is named after this one concept. This is like calling the original 13 colonies the "Virginia Colonies." Virginia was but just one of the original colonies. Chapters 5 through 13 technically fall under the "Work area" compliance method; however, "work areas" only apply in Chapters 8 and 9 (in other words, 2 out of 9 chapters).

Repair: Has nothing to do with a "work area," yet it falls under the "Work area" compliance method. So, would a code/fire official be correct in interpreting a repair is a work area?

Level 1 alteration: Has nothing to do with a "work area," yet it falls under the "Work area" compliance method. So, would a code/fire official be correct in interpreting a repair is a work area?.

Addition, moved/relocated building, or a historic building: They all must be "work areas," because they fall under the "work area" compliance method.

Since it is apparent NONE of the above examples are actual "work areas" (per the definition in Chapter 2), then why confuse things by assigning them to the "Work area" compliance method? If we revise the name/title of this particular compliance method, then at least trying to connect all "work" performed under Chapters 5-13 to a "work area" should no longer be an interpretation issue.

Other than the Index (where I cannot make a code change under this cdpVA system), this is the only place the term "Work area" compliance method is used.

**Cost Impact:** Could potentially reduce costs if we can avoid interpretations that require repairs, Level 1 alterations, some Level 2 alterations, additions, etc. to be classified as "work areas."

---

## Workgroup Recommendation

**Workgroup 2 Recommendation Recommendation:** Pending

**Workgroup 2 Reason:** Editorial changes-Beahm asked why cost reduction if only editorial, Witt suggests hold till July.-Robbie suggested TRB decide

---

## Board Decision

None

---

R-301.1.2 cdpVA-15

# R-303.1 cdpVA-15

**Proponent :** Kenney Payne, Representing AIA-VA  
(kpayne@moseleyarchitects.com)

## 2015 International Building Code

### **SECTION 1511 REROOFING AND ROOF REPAIR**

**1511.1 General.** ~~Materials and methods of application used for recovering or replacing an existing reroofing and roof covering repair, as defined by Section 202 of the IEBC, shall comply with the applicable requirements of Chapter 15 and the requirements of Section 303 of the VEBC.~~

**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 percent slope) in Section 1507 for roofs that provide positive roof drainage.~~
- ~~2. Recovering or replacing an existing roof covering shall not be required to meet the requirement for secondary (emergency overflow) drains or scuppers in Section 1503.4 for roofs that provide for positive roof drainage. For the purposes of this exception, existing secondary drainage or scupper systems required in accordance with this code shall not be removed unless they are replaced by secondary drains or scuppers designed and installed in accordance with Section 1503.4.~~

~~**1511.2 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 system.~~

~~**1511.3 Roof replacement.** Roof replacement shall include the removal of all existing layers of roof coverings down to the roof deck.~~

~~**Exception:** 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.~~

~~**1511.3.1 Roof recover.** The installation of a new roof covering over an existing roof covering shall be permitted where any of the following conditions occur:~~

- ~~1. Where the new roof covering is installed in accordance with the roof covering manufacturer's approved instructions.~~
- ~~2. Complete and separate roofing systems, such as standing seam metal roof panel 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.
3. Metal panel, metal shingle and concrete and clay tile roof coverings shall be permitted to be installed over existing wood shake roofs when applied in accordance with Section 1511.4.
  4. The application of a new protective coating over an existing spray polyurethane foam roofing system shall be permitted without tear off of existing roof coverings.

**1511.3.1.1 Exceptions.** 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.

**1511.4 Roof recovering.** Where the application of a new roof covering over wood shingle or shake roofs creates a combustible concealed space, the entire existing surface shall be covered with gypsum board, mineral fiber, glass fiber or other *approved* materials securely fastened in place.

**1511.5 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 counterflashings shall not be reinstalled where rusted, damaged or deteriorated. Aggregate surfacing materials shall not be reinstalled.

**1511.6 Flashings.** Flashings shall be reconstructed in accordance with *approved* manufacturer's installation instructions. Metal flashing to which bituminous materials are to be adhered shall be primed prior to installation.

## 2015 International Existing Building Code

### SECTION 303 REROOFING AND ROOF REPAIR

**303.1 Reroofing.** Materials and methods of application used for recovering or replacing an existing roof covering shall comply with this section and the applicable requirements of Chapter 15 of the *International Building Code*.

#### **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-percent slope) in Section 1507 of the *International Building Code* for roofs that provide positive roof drainage.

2. Recovering or replacing an existing roof covering shall not be required to meet the requirement for secondary (emergency overflow) drains or scuppers in Section 1503.4 of the *International Building Code* for roofs that provide for positive roof drainage. For the purposes of this exception, existing secondary drainage or scupper systems required in accordance with the *International Building Code* shall not be removed unless they are replaced by secondary drains or scuppers designed and installed in accordance with Section 1503.4 of the *International Building Code*.

**303.2 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 system.

**303.3 Roof replacement.** Roof replacement shall include the removal of all existing layers of roof coverings down to the roof deck.

**Exception:** 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 *International Building Code*.

**303.3.1 Roof recover.** 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. Metal panel, metal shingle and concrete and clay tile roof coverings shall be permitted to be installed over existing wood shake roofs when applied in accordance with Section 706.4.

3. The application of a new protective coating over an existing spray polyurethane foam roofing system shall be permitted without tear-off of existing roof coverings.

4. Where the new roof covering is installed in accordance with the roof covering manufacturer's approved instructions.

**Exceptions.** 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.

**303.4 Roof recovering.** Where the application of a new roof covering over wood shingle or shake roofs creates a combustible concealed space, the entire existing surface shall be covered with gypsum board, mineral fiber, glass fiber or other approved materials securely fastened in place.

**303.5 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 counterflashings shall not be reinstalled where rusted, damaged or deteriorated. Aggregate surfacing materials shall not be reinstalled.

**303.6 Flashings.** Flashings shall be reconstructed in accordance with approved manufacturer's installation instructions. Metal flashing to which bituminous materials are to be adhered shall be primed prior to installation.

**303.7 Roof repair.** Roof repairs shall comply with this section. Work on nondamaged components that is necessary for the required repair of damaged components shall be considered part of the roof repair and shall not be subject to the requirements of other parts of this code.

**Exception:** Routine maintenance required by this section, 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 roof repairs in this section.

**303.7.1 Building materials and systems.** Building materials and systems shall comply with the requirements of Sections 303.7.1.1 and 303.7.1.2.

**303.7.1.1 Existing materials.** Materials already in use in a building in compliance with requirements or approvals in effect at the time of their erection or installation shall be permitted to remain in use unless determined by the building official to be unsafe.

**303.7.1.2 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, provided no hazard to life, health or property is created. Hazardous materials shall not be used where the code for new construction would not permit their use in buildings of similar occupancy, purpose and location.

## **SECTION 706 REROOFING**

### **707706707706 STRUCTURAL**

**[BS] ~~707.1706.1~~ General.** *No change to text.*

**[BS] ~~706.1~~ General.** ~~Materials and methods of application used for recovering or replacing an existing roof covering shall comply with the requirements of Chapter 15 of the *International Building Code*.~~

**Exception:** ~~Reroofing shall not be required to meet the minimum design slope requirement of one quarter unit vertical in 12 units horizontal (2 percent slope) in Section 1507 of the *International Building Code* for roofs that provide positive roof drainage.~~

**[BS] ~~707.2706.2~~ Addition or replacement of roofing or replacement of equipment.** *No change to text.*

**[BS] ~~706.2~~ 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 system.~~

**[BS] ~~706.3~~ Recovering versus replacement.** ~~New roof coverings shall not be installed without first removing all existing layers of roof coverings down to the roof deck 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 wood shake, slate, clay, cement or asbestos cement tile.~~
- ~~3. Where the existing roof has two or more applications of any type of roof covering.~~

**Exceptions:**

- ~~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. Metal panel, metal shingle and concrete and clay tile roof coverings shall be permitted to be installed over existing wood shake roofs when applied in accordance with Section 706.4.~~
- ~~3. The application of a new protective coating over an existing spray polyurethane foam roofing system shall be permitted~~

- without tear-off of existing roof coverings.
4. 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 *International Building Code*.

**[BS] 706.4 Roof recovering.** Where the application of a new roof covering over wood shingle or shake roofs creates a combustible concealed space, the entire existing surface shall be covered with gypsum board, mineral fiber, glass fiber or other approved materials securely fastened in place.

**[BS] 706.5 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 counterflashings shall not be reinstalled where rusted, damaged or deteriorated. Aggregate surfacing materials shall not be reinstalled.

**[BS] 706.6 Flashings.** Flashings shall be reconstructed in accordance with approved manufacturer's installation instructions. Metal flashing to which bituminous materials are to be adhered shall be primed prior to installation.

**[BS] 707.3 Additional requirements for reroof permits.** The requirements of this section shall apply to *alteration* work requiring reroof permits.

**[BS] 707.3.1 Bracing for unreinforced masonry bearing wall parapets.** Where a permit is issued for reroofing for more than 25 percent of the roof area of a building assigned to Seismic Design Category D, E or F that has parapets constructed of unreinforced masonry, the work shall include installation of parapet bracing to resist the reduced *International Building Code* level seismic forces as specified in Section 301.1.4.2 of this code, unless an evaluation demonstrates compliance of such items.

**[BS] 707.3.2 Roof diaphragms resisting wind loads in high-wind regions.** Where roofing materials are removed from more than 50 percent of the roof diaphragm or section of a building located where the ultimate design wind speed,  $V_{UH}$ , determined in accordance with Figure 1609.3(1) of the *International Building Code*, is greater than 115 mph (51 m/s) or in a special wind region, as defined in Section 1609 of the *International Building Code*, roof diaphragms, connections of the roof diaphragm to roof framing members, and roof to wall connections shall be evaluated for the wind loads specified in the *International Building Code*, including wind uplift. If the diaphragms and connections in their current condition are not capable of resisting at least 75 percent of those wind loads, they shall be replaced or strengthened in accordance with the loads specified in the *International Building Code*.

**Reason:** Reroofing and roof repair are clearly an "existing building" scope of work and should be in the VEBC. Therefore, reroofing and roof repair requirements (IBC Section 1511) have been relocated from the IBC to the new VEBC Section 303 and a "pointer" has been left in IBC 1511. Since "reroofing" is a defined term meaning, "the process of recovering and replacing an existing roof covering" it is redundant to repeat that same language again in the IBC 1511.1 charging paragraph and only the defined term is necessary.

Is reroofing a repair or an alteration? If an alteration, would it equate to a Level 1 or Level 2? When does a roof "repair" become an alteration? Rather than deal with such ambiguity and potential inconsistent interpretations, why not just call it - *reroofing* (as defined) and *roof repair* (as defined) and not get into how it fits within the classification of work under the VEBC. Simply put these provisions into VEBC Chapter 3, which applies to all compliance methods, and you would not need to "classify" the work as anything - repair or alteration. It is simply a reroofing or a roof repair project.

Upon a word search of the term "roof repair" (which is a defined term in the 2015 IEBC), it appears that term does not exist in the IEBC. Therefore, this code change has added requirements for a "roof repair" which essentially duplicates language already found in other IEBC sections (e.g., 401.2, 404.1, 602.1, and 602.2). Section 303 of the VEBC essentially is the same text as the 2015 IBC Section 1511 and 2015 IEBC Section 706. So, even though it is being proposed to be deleted in the IBC and Section 706 of the IEBC, it is being reinserted in the new 2015 VEBC Section 303.

2015 IEBC Section 706 was deleted and incorporated into the new VEBC Section 303.

2015 IEBC Section 707.3 was deleted in its entirety because it is completely contrary to the purpose of the VEBC as described in VRC Section 102.1. The VEBC should "incentivize, not penalize." Numerous owners want - or need - to repair a large portion or replace a large portion or all of their existing roofs, yet in doing so, they may be required to brace existing parapets and/or evaluate and provide for additional connections regarding the roof diaphragm. These requirements seem onerous and could be enough to prevent owners from repairing or replacing their roofs (I have heard of one owner already say so) - or - to have to do such repairs as "mini" projects (under the percentage limits) to avoid triggering the need to comply with these provisions. To do as "mini" projects would be extremely costly and inefficient (due to restaging, time lost, and possibly relocating occupants numerous times). Also, the VEBC should not require more than or be more stringent than the IBC; however, in the case of IEBC Section 707.3, if one were to follow the reroofing requirements found in the IBC, they would be less stringent and more flexible than those found in the VEBC. Although one could choose the Prescriptive Compliance Method (Section 403) which sends you to the IBC, the Work Area Compliance Method should not be that much more onerous when it comes to reroofing.

**Cost Impact:** By deleting the requirement for bracing of wall parapets and evaluating and providing for roof diaphragms when reroofing, or if such provisions remained, an owner might decide to create numerous "mini" projects (in lieu of just one project) to get the work done - there should be the potential for tremendous COST SAVINGS.

---

## Workgroup Recommendation

**Workgroup 2 Recommendation:** None

**Workgroup 2 Reason:** None

# Board Decision

None

R-303.1 cdpVA-15

---

# R-505.1.1 cdpVA-15

**Proponent :** Ronald Clements, Jr, Representing VBCOA VRC Committee  
(clementsro@chesterfield.gov)

## 2015 International Existing Building Code

**505.1.1 Special Provisions** A building separated horizontally in compliance with VCC section 510.2 shall be considered as separate and distinct buildings for the purpose of determining *building area* used for application of this section.

**Reason:** The current VRC is silent on how to calculate work areas in pedestal buildings designed per IBC 510. This change clarifies that the areas on either side of the horizontal assemblies should be used as the "building area" for application of the 50% calculation in 505.1.

**Cost Impact:** This will increase the cost of construction if the interpretation is that the "buildings" above and below the horizontal assemblies should not be reviewed as separate buildings when applying the 50% calculation. This will not increase the cost of construction if the interpretation is that the "buildings" above and below the horizontal assemblies should be reviewed as separate buildings when applying the 50% calculation.

---

## Workgroup Recommendation

**Workgroup 2 Recommendation:** None

**Workgroup 2 Reason:** None

---

## Board Decision

None

R-505.1.1 cdpVA-15

---

# R-808.3 cdpVA-15

**Proponent :** Johnna Grizzard (grizzardj@chesterfield.gov)

## 2015 International Existing Building Code

**808.3 Residential occupancies.** In Group R-2, R-3, R-4 and ~~R-4~~R-5 occupancies and buildings regulated by the *International Residential Code*, the requirements of Sections 808.3.1 through 808.3.7 shall be applicable only to work areas located within a dwelling unit.

**Reason:** The 2012 VCC currently permits application of the VRC for reconstruction, alteration or repair in group R-5 occupancies as an exception to VCC 103.5. There is also a forthcoming proposal for the 2015 Virginia code change cycle to more clearly specify the VRC is applicable to R-5 occupancies. The 2015 IEBC specifies that Section 808.3 is applicable to residential occupancies, and lists the occupancies: R-1, R-2, R-3, and R-4 and buildings regulated by the *International Residential Code*." Because R-5 is not a Use Group designation in the I-codes, but buildings regulated by the IRC is specified for this section, it appears the intent is for this section to apply to all residential occupancies.

**Cost Impact:** None

---

## Workgroup Recommendation

**Workgroup 2 Recommendation:** None

**Workgroup 2 Reason:** None

---

## Board Decision

None

R-808.3 cdpVA-15

---

# R-903.1 cdpVA-15

**Proponent :** Kenney Payne, Representing AIA-VA  
(kpayne@moseleyarchitects.com)

## 2015 International Existing Building Code

**903.1 Existing ~~shafts and vertical openings~~stairways.** Existing stairways that are part of the means of egress shall be enclosed in accordance with Section 803.2.1 and its Exceptions if applicable, from the highest *work area* floor to, and including, the level of exit discharge and all floors below.

**Reason:** The revision to the header is to avoid potential confusion as the charging paragraph is only about stairways, and not shafts and vertical openings.

The purpose of adding "and Exceptions if applicable" is to again avoid potential confusion where it may be interpreted that all such stairways must be enclosed, regardless of whether the exceptions would otherwise apply. In other words, could a code official interpret that the stairway must be enclosed - period - per 803.2.1, which only addresses the hourly rating - without allowing the application of the exceptions? If yes, then this code change is needed and should avoid such confusion or potentially incorrect interpretations.

**Cost Impact:** If it could be interpreted that the stairway(s) must be enclosed with rated construction without allowing the use of the exceptions, then this code change could result in COST SAVINGS.

---

### Workgroup Recommendation

**Workgroup 2 Recommendation:** None

**Workgroup 2 Reason:** None

---

### Board Decision

None

---

R-903.1 cdpVA-15

# R-904.2 cdpVA-15

**Proponent :** Kenney Payne, Representing AIA-VA  
(kpayne@moseleyarchitects.com)

## 2015 International Existing Building Code

**904.2 Fire alarm and detection systems.** Fire alarm and detection shall be provided throughout the work area in accordance with Section 907 of the *International Building Code* as required for new construction.

**904.2.1 Manual fire alarm systems.** Where required by the *International Building Code*, a manual fire alarm system shall be provided throughout the *work area*. Alarm notification appliances shall be provided on such floors and shall be automatically activated as required by the *International Building Code*.

- **Exceptions:**

1. Alarm-initiating and notification appliances shall not be required to be installed in tenant spaces outside of the *work area*.
2. Visual alarm notification appliances are not required, except where an existing alarm system is upgraded or replaced or where a new fire alarm system is installed.

**904.2.2 Automatic fire detection.** Where required by the *International Building Code* for new buildings, automatic fire detection systems shall be provided throughout the *work area*.

**Reason:** It could be interpreted that VRC Section 904.2 (the "charging" paragraph) requires installation throughout the building, as it would be required "for new construction." However, VRC Sections 904.2.1 and 904.2.2 clearly only require such installation in work areas only.

There appears to be a lack of clarity and/or the potential for a conflict that could lead to confusion, misinterpretations, and/or inconsistent interpretations. By adding "throughout the *work area*" in the charging paragraph, it clarifies the extent (work area (as defined) only) and uses the exact same terminology as the subsections.

**Cost Impact:** Potential **COST SAVINGS** if such systems are only required in work areas (which it clearly says in Sections 904.2.1 and 904.2.2), and not throughout the building (which might be interpreted under Section 904.2 because of the term "new construction").

---

## Workgroup Recommendation

**Workgroup 2 Recommendation:** None

**Workgroup 2 Reason:** None

---

# Board Decision

None

R-904.2 cdpVA-15

---