

SUPPLEMENT

DHCD WORKGROUP MEETING

2012 Code Change Cycle

October 11, 2013 at 9:30

Virginia Housing Center

SFPC:

DESCRIPTION	Page #
• SFPC 5001.3/USBC 116.2, 307.1, 425.1 – NFPA 45 – Laboratory buildings. Substitute change, comments submitted and summary of subgroup meeting. See item #21 of agenda.	1

2012 USBC:

DESCRIPTION	Page #
• USBC 103.10 IECC 101.7 – Revised code change. See item #1 of agenda.	1
• 108.1 and 3411.9.5 (IEBC 410.1) – Revised code change. See item #3 of agenda.	5
• USBC IRC M1503.4 – Make-up air. Revised code change. See item #40 of agenda.	7
• USBC IRC G2411.1 – CSST. See item #41 of agenda.	9
• IWUIC – Urban interface code. Comments submitted. See item #47 of agenda.	17
• USBC VADR – Fee for generators. Revised code change. See item #49 of agenda.	18
• Attic, Habitable – Revised code changes (was on August 22 nd workgroup agenda).	20
• Garage GFCI – Revised code change (was on August 22 nd workgroup agenda).	22

VIRGINIA DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
DIVISION OF BUILDING AND FIRE REGULATION

Code Change Form for the 2012 Code Change Cycle

Code Change Number: _____

Proponent Information

(Check one): Individual Government Entity Company

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Representing: SFMO

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Proposal Information

Code(s) and Section(s): USBC Sections 116.2, 307.1, 425.1, and SFPC Section 5001.3 **SUBSTITUTE CHANGE**

Proposed Change (including all relevant section numbers, if multiple sections):

NOTE: If Kenney Payne's code change proposal on laboratories is passed, only SFPC Section 5001.3 below would be required in this code change proposal. The corresponding USBC Section changes are addressed in Mr. Payne's proposal.

Change **USBC** Section 116.2 to read as follows:

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

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

Add new exception #14 to **USBC** Section 307.1 to read as follows:

14. Laboratory buildings and facilities in which hazardous materials are stored, used or handled when such laboratory buildings and facilities comply with Virginia Construction Code Section 425.

Add new **USBC** Section 425 to read as follows:

425.1 General. When approved as an acceptable design and construction alternative to the requirements set forth elsewhere in the Virginia Construction Code, laboratory buildings and facilities shall comply with the design and construction requirements of NFPA 45 and its referenced standards and Section 425.1.1.

425.1.1. Requirements for life safety. The life safety and construction features of laboratories and facilities shall comply with the following:

- 1. Penetrations through fire rated floor/ceiling and wall assemblies, rated window assemblies, and protection of vertical shaft openings shall comply with Chapter 7 of the VCC.**
- 2. The hourly fire separation specified in Table 5.1.1. of NFPA 45 for laboratory units shall be constructed as a fire barrier or horizontal assembly in accordance with the VCC. The floor**

assembly and supporting construction shall be of the same hourly rating as required for laboratory unit separation.

3. Emergency lighting and exit requirements shall comply with Chapter 10 of the VCC.

425.2 Quantity limitations. When used as an acceptable design and construction alternative for laboratories and facilities, the chemical inventories in each laboratory unit shall be maintained within the maximum allowable quantities specified in the applicable fire prevention or building code except as modified by NFPA 45, Chapter 10 for buildings with more than three stories.

425.2.1 Hazardous materials not listed. When hazardous materials to be stored, handled or used in laboratories or facilities are not listed in NFPA 45, the requirements for the hazardous materials not listed shall comply with the VCC.

Add the following standard to **USBC** Chapter 35, Referenced Standards:
NFPA 45-11, Standard on Fire Protection for Laboratories Using Chemicals

Change **SFPC** Section 5001.3 to read as follows:

5001.3 Performance-based design alternative. When *approved by the fire code official*, buildings and facilities where hazardous materials are stored, used or handled shall be permitted to comply with this section as an alternative to compliance with the other requirements set forth in this chapter and Chapters 51 through 67. When *approved by the building code official*, laboratories where hazardous materials are stored, used or handled shall be permitted to comply with VCC Section 425 and Exception #14 to VCC Section 307.1

Add the following standard to **SFPC** Chapter 80, Referenced Standards:
NFPA 45-11, Standard on Fire Protection for Laboratories Using Chemicals

Supporting Statement (including intent, need, and cost impact of the proposal):

This is a substitute change to what was previously submitted by the SFMO. It is a proposal developed at a August 7th meeting held at UVA, DHCD Work Group Meetings, and a subsequent exchanges of emails.

The concept in the original supporting statement is still applicable and valid. This substitute change refines the desired change and to address issues, concerns and technicalities that arose from previous meetings on the matter.

Based on input from client groups, this could save thousands of dollars in new construction and renovation costs, while at the same time, provide an equal or higher level of safety to a building's occupants.

Submittal Information

Date Submitted: 10/7/13 as a substitute to change submitted 6/3/13 and 8/21/13

The proposal may be submitted by email as an attachment, by fax, by mail, or by hand delivery.

Please submit the proposal to:

DHCD DBFR SBCO (State Building Codes Office)
600 East Main Street
Suite 300
Richmond, VA 23219

Email Address: Vernon.hodge@dhcd.virginia.gov
Fax Number: (804) 371-7092
Phone Numbers: (804) 371-7150



SUMMARY

DHCD SUBGROUP MEETINGS 2012 Code Change Cycle

NIGHTCLUB DEFINITION and NFPA 45 - LABORATORIES

September 24, 2013

Summary of Sub-group Nightclubs Meeting:

- Non-consensus on code change from Robby Dawson to delete “main use” and have defined nightclubs as where there is food and alcohol served, entertainment and space for dancing. Considered more stringent that could include impromptu or occasional dancing. Could include VFW, American Legions, Moose and wedding receptions, birthday parties, retirement and promotion parties, etc. Not supported by restaurant industry.
- Current definition with “main use”. Would like some descriptors, but no agreement on what and how. “Main use” does include accessory uses. Should there be some square footage? How might duration be a factor?
- DHCD will recommend carry-over for the 2015 USBC cycle.

Summary of Sub-group Instructional and Research Labs E and B Meeting:

- The initial discussion was to focus on Ken Payne's AIA version and not proceed with the SFMO version. The DHCD code change could be or is covered by the AIA version on pages 8 and 9 related to dispersion and how to count or account for quantities in use and storage as that has been an issue with the current H table and how fire officials inspect labs.
- Great progress was made and a new revised version **is attached** reflecting changes. The text and requirements for this focused code change only for E and B research and instructional labs in new and existing buildings will also need to be reviewed thoroughly by stakeholders.
- The code change is still non-consensus, but the revised code change may resolve some issues or it could open a round of other questions. DGS has concerns about expanded quantities on upper floors while VBCOA and VPMIA note this is still a substantial code change that was only presented to the larger group of stakeholders this summer and that many model codes are impacted to ensure it fits into the USBC format and terms and tables are properly integrated into the IBC/IFC/IMC and other model codes as applicable. A DGS paper is attached outlining some issues.
- 202 – Definitions: Need to add “research” for “laboratory unit”.
- IBC section numbers - DHCD staff will coordinate into USBC format.
- Kenny and Vernon to draft text for USBC VRC/IEBC that will coordinate with the USBC VCC and the SFPC for maintenance and operational enforcement. The most discussion to date by UVA and VT has been existing buildings with labs on upper floors and the need for some flexibility in

storage and use quantities. Existing unsprinkled buildings with labs will have 50% reduction in quantities unless the labs/buildings are sprinkled with quick-response sprinklers.

- Whether a code change is approved or not, this issue will be also carried-over for the 2015 USBC regulatory cycle for refinement.
- Most of the labs are C and D somewhere around 85% but the A and B labs are being included in the code change. Most of the attention is on C and D so this is why there is a need to still keep this matter on-the-table for the 2015 USBC.
- There are lots of sections to be referenced so the stakeholders and DHCD will need to identify missing sections and review them to avoid conflicts as we move from the NFPA to the ICC/USBC format.
- This code change will be designated for owners, RDP and code officials as optional for approval by the building official to utilize.
- Table 428.5 shows D as no separation, but under 428.5.1 - E occupancies, there is 1-hour rated construction required. Is this a conflict?
- 428.5.2 – Penetrations: delete as covered by IBC. Group concurred.
- 428.5.3 – Seals: needs standard on sealing. VBCOA, VPMIA, proponent, SFMO, universities need to review. Curbed how high? Seal with UL product?
- 428.5.4 Door and window assemblies: delete group.
- 428.5.5 – Ductwork: Review 90A and USBC VCC IBC/IMC/IFC and VRC/IEBC for comparison DHCD comment.
- 428.6 – Means of egress: Different so need VCC and VRC.
- 428.6.2 Emergency lighting: Should this be deleted?
- 428.7 – Fire protection: Are fire extinguishers still needed where sprinkled with quick-response sprinklers as USBC does exempt occupancies with quick-response sprinklers? (DHCD comment.)
- 428.8.1 – Protection: Delete #6. There are some SFPC operational impacts. It is a very unclear fragment.
- 428.8.3 – Explosion venting: Is explosion venting needed when it is covered under H in IBC? (DHCD comment.)
- Sections on pages 5, 6 and 7 (down to chemical fume hoods). Needs VPMIA/VBCO review. Does all the ventilation, supply, ducts, exhaust air and air pressure need to be in this code change or can IMC or standards be linked? (DHCD comment.)
- 428.9.3.1 - Energy conservation devices: This needs clarifying as to what this is and can it be referenced to IMC?
- Tables 428.9.8 and 428.9.8.1 - DHCD comments: Need to coordinate IBC T307.1.1 with IFC tables and new flammable and combustible liquids tables.
- 428.9.9 – Equipment: Needs work/coordination.
- 428.9.9.5 – Electric motors: Does this need to stay?
- Chapter 35 - Delete NFPA 45 and maybe also 90A.
- Need supporting statement expanded to describe focus; how is integrated into the USBC VCC and VRC and SFPC.
- Proponents increased to universities, SFMO and AIA.

VIRGINIA DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
DIVISION OF BUILDING AND FIRE REGULATION

Code Change Form for the 2012 Code Change Cycle

Code Change Number: _____

Proponent Information (Check one): Individual Government Entity Organization

Name: Kenney Payne, Claude Hutton, and others Representing: VSAIA; SFMO; UVA/W&M/VT/GMU

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Proposal Information

Code(s) and Section(s): **2012 VCC Section 116.1; and 2012 IBC: Sections 202, 304, 305, 307.1, and new Sections 305.3 and 428; and 2012 IEBC Section 1001.1 and new Sections 407.5 and 1013**

Proposed Change (including all relevant section numbers, if multiple sections):

Revisions to 2012 VCC / IBC:

Revise 2012 VCC Section 116.2 as follows: (addresses "alternatives")

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

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

Add new definitions in 2012 IBC Section 202 as follows: (introduces NFPA 45 terminology)

EDUCATIONAL LABORATORY UNIT. A laboratory unit that is used for educational purposes in Group E occupancies.

INSTRUCTIONAL LABORATORY UNIT. A laboratory unit that is used for educational purposes in Group B occupancies.

LABORATORY. A building, or portion thereof, where the use of hazardous materials on a nonproduction basis, rather than in a manufacturing process, is related to testing, analysis, teaching, research, instruction, or developmental activities. (more closely matches the definition in 2012 IMC 510.1)

LABORATORY UNIT. An enclosed space used for experiments or tests, including contiguous ancillary corridors and spaces maintained for or used by laboratory personnel within the unit. It shall be permitted to contain one or more separate *laboratory work areas*, and is permitted to be an entire building. A laboratory unit shall be classified as A, B, C, or D in accordance with Section 428.

LABORATORY WORK AREA. A room or space for testing, analysis, teaching, research, instruction, or similar developmental activities that involve the use of hazardous materials.

RESEARCH LABORATORY UNIT. A dedicated laboratory unit that is used for post-graduate purposes in Group B occupancies.

Revise list under 2012 IBC Section 304.1 as follows: (addresses Group B)

Laboratories: testing and research complying with Section 428

Add new 2012 IBC Section 305.3 as follows: (addresses Group E)

305.3 Group E, laboratories. This group includes buildings and structures or portions thereof used for educational purposes in Group E occupancies in accordance with Section 428.

Add new 2012 IBC Exception #14 to Section 307.1 as follows: (address Group H)

Exceptions: The following shall not be classified as Group H, but shall be classified as the occupancy that they most nearly resemble.

[1 through 13 unchanged]

14. Laboratory buildings and facilities in which hazardous materials are stored, dispensed, used or handled when such laboratory buildings and facilities comply with Section 428.

Revise footnote 'b' in 2012 IBC Table 307.1(1) as follows: (addresses issue of consistency in "counting" of quantities, and duplicates Vernon's suggested language)

b. The aggregate quantity in use and storage shall not exceed the quantity listed for storage, except that the amount of flammable and combustible liquids in use in instructional or educational laboratory units classified as Class C or D in accordance with Section 428 shall not contribute to the aggregate quantity listed for storage.

Add new 2012 IBC Section 428 as follows: (basically a modified repeat of the majority of NFPA 45)

SECTION 428 **LABORATORIES**

428.1 General. When approved as an acceptable design and construction alternative to the requirements set forth elsewhere in the Virginia Construction Code, laboratory buildings and facilities, laboratory units, and laboratory work areas shall comply with Section 428.

428.2 Laboratory Unit Classification. Laboratory units shall be classified based on its fire hazard in accordance with Section 428.2.1 and occupancy in accordance with Section 428.2.2.

428.2.1 Laboratory Unit Fire Hazard Classification. Laboratory units shall be classified as Class A (high fire hazard), Class B (moderate fire hazard), Class C (low fire hazard), or Class D (minimal fire hazard), according to the quantities of flammable and combustible liquids specified in Table 428.9.3 and Table 428.9.3.1.

428.2.1.1 Instructional laboratory units. Instructional laboratory units shall be classified as Class C or Class D laboratory units.

428.2.1.2 Educational laboratory units. Educational laboratory units shall be classified as Class D or shall be limited to 50 percent of the flammable and combustible liquids quantity for Class C laboratory units as indicated in Table 428.9.3 and Table 428.9.3.1.

428.2.2 Laboratory Unit occupancy classifications. Occupancy classifications of *laboratory units* shall be in accordance with Sections 428.2.2.1 through 428.2.2.3.

428.2.2.1 Group F-1. Class A, B, and C laboratory units shall be permitted to be classified as Group F-1.

428.2.2.2 Group E. Educational laboratory units shall be permitted to be classified as Group E.

428.2.2.3 Group B. Instructional laboratory units and Class D laboratory units shall be permitted to be classified as Group B.

428.3 Laboratory Work Area and Laboratory Unit Explosion Hazard Classification. A *laboratory work area* shall be considered to contain an explosion hazard if an explosion of quantities or concentrations of materials could result in serious or fatal injuries to personnel within that *laboratory work area*. A *laboratory unit* shall not be considered to contain an explosion hazard unless a *laboratory work area* within that *laboratory unit* contains an explosion hazard great enough to cause major property damage or serious injury outside that *laboratory work area*. Such quantities or concentrations include, but are not limited to, the following:

1. Storage of greater than 1 lb. (0.45 kg) of materials with an instability hazard rating of 4.
2. Use or formation of greater than 0.25 lbs. (0.11 kg) (0.25 lb) of materials with an instability hazard rating of 4.
3. Presence of highly exothermic reactions in glass or open reaction vessels involving more than 0.35 oz (10 g) of materials such as polymerizations, oxidations, nitrations, peroxidations, hydrogenations, or organo-metallic reactions.
4. Use or formation in glass or open reaction vessels involving more than 0.35 oz (10 g) of materials whose chemical structures indicate a potential hazard, but whose properties have not been established, such as salts of alkenes, triple bonds, epoxy radicals, nitro and nitroso compounds, and peroxides.
5. Presence of high-pressure reactions.
6. Other explosion hazards as determined by the *building official*.

428.4 Laboratory Unit Enclosure and fire protection. The required construction of *laboratory units* shall be in accordance with Table 428.4. All *laboratory units* shall be equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.

Table 428.4 Separation Requirements and Height Allowances for Laboratory Units

<u>Laboratory Unit^a</u>	<u>Area of Laboratory Unit</u>	<u>Fire Separation^b</u>	<u>Permitted stories above Grade</u>
<u>A</u>	<u>Less than or equal to 10,000 SF (929 m²)</u>	<u>2 hours</u>	<u>1-3^c</u>
<u>A</u>	<u>Greater than 10,000 SF (929 m²)</u>	<u>Not permitted</u>	
<u>B</u>	<u>Less than or equal to 10,000 SF (929 m²)</u>	<u>1 hour</u>	<u>1-3^c</u>
<u>B</u>	<u>Less than or equal to 10,000 SF (929 m²)</u>	<u>2 hours</u>	<u>4-6^c</u>
<u>B</u>	<u>Greater than 10,000 SF (929 m²)</u>	<u>Not permitted</u>	
<u>C</u>	<u>Unlimited</u>	<u>Not required</u>	<u>1-3</u>
<u>C</u>	<u>Unlimited</u>	<u>1 hour</u>	<u>4-6</u>
<u>C</u>	<u>Unlimited</u>	<u>2 hours</u>	<u>Over 6</u>
<u>D</u>	<u>Unlimited</u>	<u>Not required</u>	<u>Unlimited</u>

a. Refer to Section 428.2.2 for laboratory unit classification.

b. Separation in this table refers to separation from laboratory unit(s) to non-laboratory work areas and/or separations from laboratory unit(s) of equal or lower hazard classification.

c. Not allowed in structures below grade.

428.4.1 Educational occupancies. Laboratory units in Group E occupancies shall be separated from non-laboratory areas by 1-hour construction.

428.4.2 Seals. Floors, floor openings, floor penetrations, and floor firestop systems shall be sealed or curbed to prevent liquid leakage to lower floors.

428.4.3 Ductwork. Openings in fire-resistance-rated wall assemblies and horizontal assemblies for air-handling ductwork or air movement shall be protected in accordance with NFPA 90A.

428.5 Means of egress. A second means of access to an exit or exit access shall be provided from a laboratory work area if any of the following situations exist:

1. A laboratory work area contains an explosion hazard located so that an incident would block escape from or access to the laboratory work area.
2. A laboratory work area within a Class A laboratory unit which exceeds 500 SF (46.5 m²).
3. A laboratory work area within a Class B, Class C, or Class D laboratory unit which exceeds 1,000 SF (93 m²).
4. A hood in a laboratory work area is located adjacent to the primary means of exit access.
5. A compressed gas cylinder larger than lecture bottle size (approximately 2 inches × 13 inches (5 cm × 33 cm) is located such that it could prevent safe egress in the event of accidental release of cylinder contents.
6. A cryogenic container is located such that it could prevent safe egress in the event of accidental release of container contents.

428.5.1 Exit access doors. The required exit access doors of all laboratory work areas within Class A or Class B laboratory units shall swing in the direction of exit travel. The required exit access doors of all laboratory work areas within Class C or Class D laboratory units shall be permitted to swing against the direction of exit travel or shall be permitted to be a horizontal sliding door complying with Section 1008.1.4.3.

428.5.2 Emergency lighting. Emergency lighting complying with Section 1006 shall be provided for laboratory work areas requiring a second means of access to an exit or exit access.

428.6 Fire protection. All laboratory units shall be provided with portable fire extinguishers in accordance with Section 906 and as required by Section 428.6.1; fire alarm system in accordance with Section 907 and as required by Section 428.6.2; standpipe systems in accordance with Section 905 and as required by Section 428.6.3; fire safety and evacuation plans in accordance with Section 404 of the IFC; and automatic sprinkler system in accordance with Section 903.3.1.1 and as required by Section 428.6.4.

428.6.1 Portable fire extinguishers. Portable fire extinguishers shall be provided in laboratory units as follows:

1. Class A laboratory units shall be rated in accordance with NFPA 10, as extra (high) hazard.
2. Class B, C and Class D laboratory units shall be rated in accordance with NFPA 10, as ordinary (moderate) hazard.

428.6.2 Fire alarm system. A manual fire alarm system shall be provided in Class A and B laboratory units.

428.6.3 Standpipe systems. Standpipe systems shall be installed in all laboratory buildings that are two or more stories above or below the grade level or level of exit discharge.

428.6.4 Automatic sprinkler system. Automatic sprinkler system protection shall be required for all *laboratory units* in accordance with the following:

1. Class A and Class B *laboratory units* shall be in accordance with NFPA 13, as ordinary hazard (Group 2) occupancies.
2. Class C and Class D *laboratory units* shall be in accordance with NFPA 13, as ordinary hazard (Group 1) occupancies.
3. Fire sprinklers in *laboratory units* shall be the quick-response (QR) sprinkler type installed in accordance with Section [F] 903.3.2.

Exception: Where exempt in accordance with Section [F] 903.3.1.1.1, an alternative automatic fire-extinguishing system in accordance with Section [F] 904 shall be permitted.

428.7 Explosion hazard protection. When a *laboratory work area* or a *laboratory unit* contains an explosion hazard, as defined in Section 428.3, protection shall be provided in accordance with Sections 428.7.1 through 428.7.4, for the occupants of the *laboratory work area*, the *laboratory unit*, adjoining *laboratory units*, and non-*laboratory areas*.

428.7.1 Protection. Protection shall be provided by at least one of the following:

1. Limiting amounts of flammable or reactive chemicals or chemicals with unknown characteristics used in or exposed by experiments.
2. Special preventive or protective measures for the reactions, equipment, or materials themselves (e.g., high-speed fire detection with deluge sprinklers, explosion-resistant equipment or enclosures, explosion suppression, and explosion venting directed to a safe location).
3. Explosion-resistant walls or barricades in accordance with Section 428.7.2, around the *laboratory work area* containing the explosion hazard.
4. Remote control of equipment to minimize personnel exposure.
5. Sufficient deflagration venting in exterior walls to maintain the integrity of the walls separating the *laboratory work area* or *laboratory unit* from adjoining areas.
6. Conducting experiments in a detached or isolated building.

428.7.2 Explosion-Resistant Construction. Where explosion-resistant construction is provided, it shall comply with one of the following methods:

1. Reinforced concrete walls.
2. Reinforced and fully grouted concrete block walls.
3. Steel walls.
4. Steel plate walls with energy-absorbing linings.
5. Barricades, such as those used for explosives operations, constructed of reinforced concrete, sand-filled/wood-sandwich walls, wood-lined steel plate, or earthen or rock berms.
6. Specifically engineered construction assemblies, *approved by the building official*.

428.7.3 Explosion venting. Where explosion venting is provided, it shall comply with one of the following:

1. So fragments will not strike other occupied buildings or emergency response staging areas.
2. So fragments will not strike critical equipment (e.g., production, storage, utility services, and fire protection).
3. So fragments will be intercepted by blast mats, energy-absorbing barrier walls, or earthen berms.

428.7.4 Signs. Entrances to *laboratory units*, *laboratory work areas*, storage areas, and associated facilities shall be identified by signs to warn emergency response personnel of unusual or severe hazards that are not directly related to the fire hazard of contents. Signs shall be posted at doors, gates, fences, or other barriers identifying unauthorized access to the following:

1. Laboratory work areas containing an explosion hazard.
2. Laboratory units containing an explosion hazard.
3. The space between explosion vents and fragment barriers.

428.7.4.1 Identification systems. Graphic systems used to identify hazards shall comply with ANSI Z535.1; ANSI Z535.2; ANSI Z535.3; and ANSI Z535.4; or other *approved* graphic system.

428.8 Laboratory Ventilating Systems and Hood Requirements. Laboratory air supply and exhaust systems, including chemical fume hoods, special local exhaust devices, and other systems for exhausting air from *laboratory work areas* in which flammable gases, vapors, or particulate matter are released, shall comply with Sections 428.8.1 through 428.8.7.

428.8.1 Requirements. *Laboratory units* and *laboratory hoods* in which chemicals are present shall be continuously ventilated under normal operating conditions. Chemical fume hoods shall not be relied upon to provide explosion (blast) protection unless specifically designed to do so. Exhaust and supply systems shall be provided to prevent a pressure differential that would impede egress or ingress when either system fails or during a fire or emergency event, including reduced operational modes or shutdown of either the supply or the exhaust ventilation system. The release of chemical vapors into the *laboratory* shall be controlled by enclosure(s) or captured to prevent any flammable and/or combustible concentrations of vapors from reaching any source of ignition.

428.8.2 Supply systems. Laboratory ventilation systems shall be provided to prevent chemical fumes, vapors, or gases originating from the laboratory from being recirculated. Fresh air intakes shall be located and configured to avoid drawing in chemicals or products of combustion coming either from the *laboratory* building itself or from other structures and devices. Air supply diffusion devices shall be located to avoid air currents that would adversely affect the performance of chemical fume hoods, exhaust systems, and fire detection or fire-extinguishing systems.

428.8.2.1 Air pressure. The air pressure in the *laboratory work areas* shall be negative with respect to corridors and non-*laboratory* areas of the *laboratory unit* except in the following instances:

1. Where operations such as those requiring clean rooms preclude a negative pressure relative to surrounding areas, alternate means shall be provided to prevent escape of the atmosphere in the *laboratory work area* or *laboratory unit* to the surrounding spaces.
2. The desired static pressure level with respect to corridors and non-*laboratory* areas shall be permitted to undergo momentary variations as the ventilation system components respond to door openings, changes in chemical fume hood sash positions, and other activities that can for a short term affect the static pressure level and its negative relationship.
3. *Laboratory work areas* located within a designated electrically classified hazardous area with a positive air pressure system shall be permitted to be positive with respect to adjacent corridors.

428.8.3 Exhaust air discharge. Air exhausted from chemical fume hoods and other special local exhaust systems shall not be recirculated, and shall comply with the following:

1. Air exhausted from *laboratory work areas* shall not pass unducted through other areas.
2. Air from *laboratory units* and *laboratory work areas* in which chemicals are present shall be continuously discharged through duct systems maintained at a negative pressure relative to the pressure of normally occupied areas of the building.

3. Positive pressure portions of the lab hood exhaust systems (e.g., fans, coils, flexible connections, and ductwork) located within the *laboratory* building shall be sealed airtight or located in a continuously mechanically ventilated room.
4. Chemical fume hood face velocities and exhaust volumes shall be sufficient to contain contaminants generated within the hood and exhaust them outside of the *laboratory* building.
5. The hood shall provide containment of the possible hazards and protection for personnel at all times when chemicals are present in the hood.
6. Special local exhaust systems, such as snorkels or "elephant trunks," shall have sufficient capture velocities to entrain the chemical being released.
7. Canopy hoods shall not be used in lieu of chemical fume hoods.
8. Class II, Type B2 biological safety cabinets listed by the National Sanitation Foundation as meeting NSF/ANSI 49, Class II (Laminar Flow) Biosafety Cabinetry, shall be permitted to be used in lieu of chemical fume hoods.
9. Laminar flow cabinets shall not be used in lieu of chemical fume hoods.
10. Air exhausted from chemical fume hoods and special exhaust systems shall be discharged above the roof at a location, height, and velocity sufficient to prevent re-entry of chemicals and to prevent exposures to personnel.

428.8.3.1 Energy Conservation Devices. Where provided, energy conservation devices shall be in accordance with Section 514 of the IMC.

428.8.4 Duct Construction for Hoods and Local Exhaust Systems. Ducts from chemical fume hoods and from local exhaust systems shall be constructed entirely of noncombustible materials except as follows:

1. Flexible ducts of combustible construction shall be permitted to be used for special local exhaust systems within a *laboratory work area*.
2. Combustible ducts shall be permitted to be used if enclosed in a shaft of noncombustible or limited-combustible construction where they pass through non-*laboratory* areas or through *laboratory units* other than the one they serve.
3. Combustible ducts shall be permitted to be used if all areas through which they pass are protected with an *approved* automatic fire-extinguishing system.

428.8.4.1 Ducts. Combustible ducts or duct linings shall have a flame spread index of 25 or less when tested in accordance with ASTM E 84 or ANSI/UL 723. Linings and coatings containing fill as fiberglass, mineral wool, foam, or other similar material that could accumulate chemical deposits shall not be permitted within laboratory exhaust systems. Duct velocities of *laboratory* exhaust systems shall be of such high velocities to minimize the deposition of liquids or condensable solids in the exhaust systems during normal operations in the chemical fume hood. Ducts shall be protected against mechanical damage. Flexible connectors containing pockets in which conveyed material can collect shall not be used in any concealed space or where strong oxidizing chemicals (e.g., perchloric acid) are used. Controls and dampers, where required for balancing or control of the exhaust system, shall be of a type that, in the event of failure, will fail open to provide continuous draft. Hand holes, where installed for damper, sprinkler, or fusible link inspection or resetting and for residue clean-out purposes, shall be equipped with tight-fitting covers provided with substantial fasteners.

428.8.5 Manifolding of Chemical Fume Hood and Ducts. Exhaust ducts from each *laboratory unit* shall be separately ducted to a point outside the building, to a mechanical room, or to a shaft. Exhaust ducts from chemical fume hoods and other exhaust systems within the same *laboratory unit* shall be permitted to be combined within that *laboratory unit*. Connection to a common chemical fume hood exhaust duct system shall be permitted to occur within a building in the following locations:

1.
2. Mechanical room protection shall not be less than the required protection of the laboratory served by the mechanical room in accordance with Table 428.4.
3. Shaft enclosure in accordance with Section 713.
4. A point outside the building.

428.8.6 Exhausters (Fans), Controls, Velocities, and Discharge. Fans conveying both corrosive and flammable or combustible materials shall be permitted to be lined with or constructed of corrosion-resistant materials having a flame spread index of 25 or less when tested in accordance with ASTM E 84 or ANSI/UL 723, and shall comply with the following:

1. Fans shall be located and arranged so as to provide access for repairs, cleaning, inspection, and maintenance.
2. Where flammable gases, flammable vapors, or combustible dusts are passed through the fans, the rotating element shall be of nonferrous or spark-resistant construction; alternatively, the casing shall be constructed of or lined with such material.
3. Where solid materials pass through the fan that would produce a spark, both the rotating element and the casing shall be constructed of such material.
4. Nonferrous or spark-resistant materials shall have a flame spread index of 25 or less when tested in accordance with ASTM E 84 or ANSI/UL 723.
5. Motors and their controls shall be located outside the location where flammable or combustible vapors or combustible dusts are generated or conveyed, unless specifically approved for that location and use.
6. Fans shall be marked with an arrow or other means to indicate direction of rotation and with the location of chemical fume hoods and exhaust systems served.

428.8.7 Chemical fume hoods. Chemical fume hood design and construction shall comply with Section 510 of the IMC. Storage of chemicals in the fume hood shall be prohibited. Automatic fire dampers shall not be used in chemical fume hood exhaust systems.

428.9 Chemical storage. Chemical quantities in each *laboratory unit* shall be within the maximum allowable quantities per Table 307.1(1), Table 307.1(2), and this Section 428.9.

428.9.1 Liquids. Class I flammable liquids and Class II combustible liquids that are not in use inside of *laboratory units* shall be stored in safety cans; in approved storage cabinets constructed in accordance with NFPA 30 and ANSI/UL 1275; or in an inside liquid storage area. Liquid waste containers stored in *laboratory work areas* shall not exceed 5 gallons (20 L).

428.9.2 Storage cabinets. Storage cabinets located in laboratories shall not be required to be vented for fire protection purposes.

428.9.3 Quantity limitations. The density and total amount of flammable and combustible liquids allowed in *laboratory work areas* and in the *laboratory unit* outside of flammable liquid storage rooms or areas shall not exceed the quantities in Table 428.9.3 for the respective class of laboratory.

**Table 428.9.3 Maximum Quantities of Flammable and Combustible Liquids
in Laboratory Units Outside of Inside Liquid Storage Rooms or Areas**

<u>Laboratory Unit Fire Hazard Class</u>	<u>Flammable and Combustible Liquid Class^a</u>	<u>Quantities in Use^a</u>		<u>Quantities in Use and Storage^a</u>	
		<u>Maximum Quantity^b per 100 SF of Laboratory Unit^c</u>	<u>Maximum Quantity^b per Laboratory Unit</u>	<u>Maximum Quantity^b per 100 SF of Laboratory Unit^c</u>	<u>Maximum Quantity^b per Laboratory Unit</u>
		<u>Gallons</u>	<u>Gallons</u>	<u>Gallons</u>	<u>Gallons</u>
<u>A</u> (high fire hazard)	<u>I</u> I, II, and IIIA	<u>10</u>	<u>480</u>	<u>20</u>	<u>480</u>
<u>B^d</u> (moderate fire hazard)	<u>I</u> I, II, and IIIA	<u>5</u>	<u>300</u>	<u>10</u>	<u>480</u>
<u>C^e</u> (low fire hazard)	<u>I</u> I, II, and IIIA	<u>2</u>	<u>150</u>	<u>4</u>	<u>300</u>
<u>D^e</u> (minimal fire hazard)	<u>I</u> I, II, and IIIA	<u>1</u>	<u>75</u>	<u>2</u>	<u>150</u>

a. The maximum amount allowed in open systems is limited to 10 percent of the quantities listed.

b. See Section 428.2 for additional requirements for *educational laboratories* and *instructional laboratories*.

c. The quantities per 100 SF do not imply the quantities must be within that 100 SF area; the quantities per 100 SF are for calculation purposes to determine the total quantity allowed per *laboratory work area* and the total amount overall in the *laboratory unit*.

d. Reduce quantities by 50 percent for Class B *laboratory units* located above the 3rd story of a building.

e. Reduce quantities by 25 percent for Class C and Class D *laboratory units* located on the 4th–6th story of a building and reduce quantities by 50 percent for Class C and Class D *laboratory units* located above the 6th story of a building.

428.9.3.1 Containers. Manufactured container types, not including transfer containers, and maximum capacities for flammable and combustible liquids shall comply with Table 428.9.3.1 except as follows:

1. Glass containers as large as 1 gallon (4 L) shall be permitted if all the following conditions are present:
 - a. Excessive corrosion or degradation of a metal or an approved plastic container would result.
 - b. The glass container size allowed in Table 428.9.3.1 is not available.
 - c. The glass containers are required for purity purposes.
2. Containers of not more than 60 gallons (227 L) capacity shall be permitted in a separate area inside the building if the inside area meets the requirements of NFPA 30.
3. In educational and instructional *laboratory work areas*, containers for Class I or Class II liquids shall not exceed the following capacity:
 - a. Safety cans of 2.1 gallons (8 L).
 - b. Other containers of 1 gallon (4 L).

Table 428.9.3.1 Maximum Allowable Manufactured Container Capacity^d

Container Type	Flammable Liquids ^a			Combustible Liquids ^a	
	IA	IB	IC	II	IIIA
Glass	1 pint ^b	1 quart ^b	1 gallon	1 gallon	5 gallons
Metal (other than DOT drums) or approved plastic	1 gallon	5 gallons	5 gallons	5 gallons	5 gallons
Safety cans	2.6 gallons ^c	5 gallons ^c	5 gallons ^c	5 gallons ^c	5 gallons
Metal container (DOT specification)	1 gallon	5 gallons ^c	5 gallons ^c	60 gallons ^c	60 gallons
Polyethylene (DOT Specification 34, UN 1H1, or as authorized by DOT special permit)	1 gallon	5 gallons ^c	5 gallons ^c	60 gallons ^c	60 gallons
Pressurized liquid dispensing container	5 gallons	60 gallons	60 gallons	60 gallons	60 gallons

a. See Chapter 2 for definitions of the various classes of flammable and combustible liquids.

b. See Sections 428.9.3.1.1 and 428.9.3.1.2.

c. See Section 428.9.3.1.3.

d. Does not apply to non-manufactured transfer containers.

428.10 Equipment. Equipment and associated apparatus used with flammable and combustible liquids shall be provided in accordance with Section 428.10.1 through 428.10.5.

428.10.1 Storage cabinets. Storage cabinets used for the storage of flammable and combustible liquids shall be constructed in accordance with NFPA 30.

428.10.2 Refrigerated equipment. Flammable liquids stored in refrigerated equipment shall be stored in closed containers.

428.10.3 Laboratory heating equipment. Laboratory heating equipment, including ovens, furnaces, environmental chambers, and other heated enclosures, shall not be provided to heat, store, or test flammable or combustible liquids or aerosols containing flammable gases unless the equipment is designed or modified to prevent internal explosion.

428.10.4 Baths. Baths handling flammable liquids or combustible liquids heated to their flash points shall be located in a chemical fume hood or shall be vented to a safe location to control vapors.

428.10.5 Electric motors. Electric motors shall be suitable for Class I, Division 2 locations when flammable and combustible liquids or flammable gas concentrations can produce hazardous concentrations of flammable mixtures.

Exception: Electric motors shall be permitted if located in chemical fume hoods or provided with special local ventilation that will prevent flammable concentrations of gases or vapors from reaching the motor.

Add the following standards to 2012 IBC Chapter 35, Referenced Standards:

NFPA 30-08 Flammable and Combustible Liquids Code

NFPA 90A-09 Standard for the Installation of Air Conditioning and Ventilating Systems

Revisions to the 2012 IEBC:

Add new 2012 IEBC Section 407.5 as follows: (ties in existing buildings – prescriptive method change of occupancy)

407.5 Laboratories. Where the quantities of hazardous materials posing a physical hazard exceed those maximum allowable quantities that were in compliance with requirements or approvals in effect at the time of their erection or installation, such laboratories shall be permitted to be in accordance with Section 428.

Revise 2012 IEBC Section 1001.1 as follows: (ties in existing buildings – change of occupancy)

1001.1 Scope. The provisions of this chapter shall apply where a change of occupancy occurs, as defined in Section 202, including:

1. Where the occupancy classification is not changed; or
2. Where there is a change in occupancy classification or the occupancy group designation changes; or
3. Where the quantities of hazardous materials posing a physical hazard exceed those maximum allowable quantities that were in compliance with requirements or approvals in effect at the time of their erection or installation.

Add new Section 1013 to 2012 IEBC as follows: (ties in existing buildings)

[F] SECTION 1013 **HAZARDOUS MATERIALS**

[F] 1013.1 Scope. The provisions of this section shall apply when hazardous materials posing a physical hazard exceed those maximum allowable quantities that were in compliance with requirements or approvals in effect at the time of their erection or installation.

1013.1.2 Hazardous materials located in control areas or sprinklered buildings. Where such hazardous materials are located within a control area or *control areas*, or within a building or portion thereof which is equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1, the amounts shall not exceed those maximum allowable quantities in Section 428 of the VCC.

1013.1.2 Hazardous materials not located in control areas or sprinklered buildings. Where such hazardous materials are not located within a control area or *control areas*, or are not located within a building or portion thereof which is equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1, the amounts shall not exceed those maximum allowable quantities in Table 1013.1.2. (this Table duplicates the table from NFPA 45 – 2000 edition – where there were no sprinkler systems)

**Table 1013.1.2 Maximum Quantities of Flammable and Combustible Liquids
in Nonsprinklered or Non-Control Area Laboratory Units Outside of Inside Liquid Storage Areas**

Laboratory Unit Fire Hazard Class	Flammable and Combustible Liquid Class^a	Quantities in Use^a		Quantities in Use and Storage^a	
		Maximum Quantity per 100 SF of Laboratory Unit^b	Maximum Quantity per Laboratory Unit	Maximum Quantity per 100 SF of Laboratory Unit^b	Maximum Quantity per Laboratory Unit
		Gallons	Gallons	Gallons	Gallons
A (high fire hazard)	I I, II, and IIIA	Not permitted	Not permitted	Not permitted	Not permitted
B (moderate fire hazard)	I I, II, and IIIA	Not permitted	Not permitted	Not permitted	Not permitted
C^c (low fire hazard)	I I, II, and IIIA	<u>2</u>	<u>75</u>	<u>4</u>	<u>150</u>
D^c (minimal fire hazard)	I I, II, and IIIA	<u>1</u>	<u>37.5</u>	<u>2</u>	<u>75</u>

a. The maximum amount allowed in open systems is limited to 10 percent of the quantities listed.

b. The quantities per 100 SF do not imply the quantities must be within that 100 SF area; the quantities per 100 SF are for calculation purposes to determine the total quantity allowed per laboratory work area and the total amount overall in the laboratory unit.

c. Reduce quantities by 25 percent for Class C and Class D laboratory units located on the 4th–6th story of a building and reduce quantities by 50 percent for Class C and Class D laboratory units located above the 6th story of a building.

Supporting Statement (including intent, need, and impact of the proposal):

“All truth passes through three stages before it is recognized.

First, it is ridiculed.

Second, it is violently opposed.

Third, it is accepted as being self-evident.”

- Arthur Schopenhauer

This revised (changes from the original VSAIA proposal have been highlighted and red commentary has been added) proposal is a result of a workgroup meeting held on September 24, 2013, consisting of various representatives of the SFMO, Virginia universities, VBCOA, VPMIA, DGS/BCOM, VSAIA, and DHCD.

[Note]: VCC already added Sections 425-426; and assuming the short-term holding areas code change is approved (which would be Section 427), this proposed code change is using Section 428. If short-term holding areas are not approved, then this proposed code change would be Section 427.

NFPA 45 is a nationally recognized laboratory safety standard. Adding language that mostly duplicates or, in a few cases, is very similar to NFPA 45, gives designers and owners/operators of laboratories a reliable means to secure the safety of laboratories in buildings built before the building codes addressed the "control area" concept, and in some cases, before sprinklered buildings were required.

This proposed code change, which largely duplicates NFPA 45, allows for greater number of laboratories and larger quantities than allowed under the IBC on upper level floors, but also requires additional fire protection than would otherwise be required by the IBC.

It also classifies laboratories into four "Fire Hazard Classes": A, B, C, or D. At upper level floors, the fire separation requirements become greater if the Fire Hazard Class increases. In this regard, this concept allows the firefighter or inspector the ability to quickly evaluate the level of hazard of each laboratory.

For example, a lab with an "A" Fire Hazard Classification could not be greater than 10,000 sq. ft., with a two hour separation on floors 1 -3 only, and would not be allowed on higher floors. The maximum quantity of Class I liquids for use and storage would be 20 gallons per 100 sq. ft.

A lab with a "D" classification could be larger, with more of them on any given story, and would not require fire separation (however, other fire protection is required). The maximum gallons in use and storage of Class I liquids would be 2 gallons per 100 sq. ft.

This proposal also recognizes that in *instructional* and *educational* laboratories, the amounts of flammable and combustible liquids in use are usually limited and/or adequately dispersed throughout the laboratory area, and potentially do not represent a fire hazard exceeding that of other occupancies; therefore, the amounts in use should not factor into in the computation for control area requirements – which is how the IBC is being interpreted and enforced.

Essentially, those who may question whether to support this code proposal should ask themselves this question: "Do I believe laboratories (*not* classified as Group H) designed, constructed, and operated in accordance with NFPA 45 is an acceptable *alternative* to the IBC, which primarily utilizes the concept of "control areas" in lieu of "laboratory units and work areas," and where the IBC basically addresses "industrial-related" laboratories, and not instructional- or educational-related laboratories.

Below are responses to selected comments previously heard regarding this code change proposal:

- *High-rise laboratories are constructed throughout the USA – how do they do it?*
 - Response: Either by limiting the quantities on those upper stories or allowing NFPA 45 as an alternative approach. If a lab in a high-rise required larger quantities, the 2012 IBC would not allow for such an approach. The only known "published standard" dealing directly with such labs is NFPA 45.
- *Why not allow the owner and/or designer to ask for a code modification to use NFPA 45, rather than go this route?*
 - Response: If a code modification is pursued, the owner and/or designer would have to justify the request by demonstrating to the building official that the alternative met "the spirit and functional intent of the code . . . and public health, welfare and safety are assured." Currently, the only means of justification would be to utilize NFPA 45. The building official can base their decision on "nationally recognized model codes and standards" – of which, NFPA 45 is –a s allowed under 2012 VCC 106.3.

We heard someone say, "*Basically, we are codifying a modification request.*" Perhaps that is true; however, the goal of a statewide uniform building code is so all jurisdictions, building officials, owners, and designers, can plan their projects with an understanding of how a code requirement will be interpreted and/or enforced. If this code proposal is approved, it will go a long way in getting us closer to a "uniform" approach.

- *I don't like it and I will not accept it.*
 - Response: Since this code change is an "alternative" approach, per Section 428.1 (When approved as an acceptable design and construction alternative), the building official would have to "approve" it first. If a building official does not like this approach, they do not have to accept it.

- *NFPA 45 appears to be more costly than the IBC.*
 - Response: In some respects, this may be true. However, it would be up to the owner and/or designer to perform a cost evaluation weighed against the function and use of the facility to determine whether those potential increased costs would allow the owner/users to actually utilize their building the way they need to use it. In other words, the increased costs may be worth it if they can actually use the upper floors of their buildings for labs.

In other respects, the IBC may cost more. By limiting both the number of labs and quantities of materials the owners/users can use on upper floors, they cannot utilize their lab buildings the way it was intended. Although this may be difficult to place a price tag on this intangible, it is a costly proposition, and usually results in reduced grants, student enrollments, etc.

- *We should not locate fire protection requirements in Chapter 4 – we do not do that anywhere else.*
 - Response: Chapter 4 is titled, "Special Detailed Requirements based on Use and Occupancy." Chapter 4 is full of examples where various "other" code requirements are included within Chapter 4:

Malls (separation, sprinkler system, finishes, signs, emergency systems, standpipe system, smoke control, means of egress, standby power, emergency voice/alarm communication systems, occupant loads)

High-rises (ratings, construction, enclosures, SFRM, sprinkler system, emergency systems, smoke control, fire alarm system, standpipe system, emergency voice/alarm communication systems, emergency power, elevators)

Atriums (sprinkler system, fire alarm system, smoke control, enclosure/separation, standby power)

The list goes on (underground buildings, Group I-2, Group I-3, Stages, Amusement buildings, Hazardous materials (and its related "control areas"), Group H, Ambulatory care facilities, and storm shelters – all of which include requirements that are normally addressed elsewhere in the building code – and are 'special' to the various occupancies.

- This code change is no different in that respect, and is the main reason why Chapter 4 was selected to locate "laboratories." However, if it would garner additional support, we would be receptive to locating this in the Appendix, if said Appendix is incorporated into the USBC.

- *NFPA 45 allows reduced fire-rated construction requirements without mitigating circumstances.*
 - 2012 IBC does not require "control areas," by themselves, to be sprinkled. This code change proposal (and NFPA 45) requires all labs to be sprinkled (refer to Section 428.6.4). So, although there may be more lab units/areas on upper floors with potentially higher quantities, with no or reduced separation requirements, those same labs **MUST** be sprinkled. There is no such requirement to sprinkle control areas unless other parts of the code require such sprinkling.

There are additional means of egress (428.5), fire protection measures (428.6), and fire explosion protection (428.7) that are not required of control areas by themselves. Also, the quantities are greatly reduced in accordance with footnotes 'd' and 'e' of Table 428.9.3.

- *Is this code change proposal intended to be retroactively applied?*
 - Response: Currently, there is no language suggesting or requiring this code change be retroactively applied.

Please refer to the attached documentation from some of the Virginia universities, supporting an alternative solution and incorporating NFPA 45 as that alternative.

May need to make equivalent changes to SFPC, including operational language.

Cost impact: This proposal should result in lower costs to owners of research laboratories that are currently limited in fully utilizing their existing (and new) buildings. It is estimated that approximately 80% of labs in Virginia would fall under the Class C or D classification under this code change (and NFPA 45). This could potentially save thousands of dollars in new construction and renovation costs, while providing an equivalent level of safety to the occupants.

Per 2012 VCC 102.1, ". . . the purpose of the USBC is . . . provided that buildings and structures should be permitted to be constructed at the least possible costs consistent with recognized standards . . ." [emphasis added]. Therefore, if this code change proposal (which is based largely on the "recognized standard" NFPA 45) results in the least possible cost, then it would meet the "purpose" of the USBC.

Date Submitted: October 2, 2013





COMMONWEALTH of VIRGINIA

Department of General Services

DIVISION OF ENGINEERING AND BUILDINGS
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24 September 2013

The Bureau of Capital Outlay Management (BCOM), the State Building Official, is not supportive of this proposed 'Code Change'.

BCOM has participated as a member of this 'working group' since early August of this year.

BCOM has voiced concerns at each of the meetings attended and early E-mail discussions.

The acceptance of NFPA 45 as an alternative method of compliance raises many concerns for the health and safety of the occupants of the facility and First Responders.

The acceptance of NFPA 45 would permit buildings with quantities of Hazardous Materials that exceed the Virginia Construction Code (VCC) thresholds to be provided without or with reduced Fire Rated Construction that would be required by the VCC, without additional mitigating circumstances and which would be classified by the VCC as 'High Hazard Group H' Use and Occupancy Classification, to be classified as 'Business B' Use and Occupancy Classification.

BCOM understands that the VCC and the Virginia Statewide Fire Prevention Code (VFPC) significantly limit the quantities of Hazardous Materials within buildings, limiting its intended use. BCOM also understands that there are other Design Guidelines/Standards in addition to NFPA 45 that are indicated to be appropriate to 'Laboratories' as defined by the Virginia Mechanical Code (VMC) 510.1 (a facility where the use of chemicals is related to testing, analysis, teaching, or developmental activities...on a nonproduction basis), that are acceptable to the 'Research Community' and provide measures for mitigating risk.

Having an alternate to the VCC and VFPC specific for Laboratories would be good, but since the application of NFPA 45 is not a good alternative, not adopting something so flawed at this time is better than adopting a flawed code which cannot be reasonably applied to be equal to the ICC/IBC/VCC/VFPC.

BCOM recommends that the Code solution for this issue be moved to the 2015 code cycle for continued development.

Some of items that are the bases for BCOM's position are as follows:

1. NFPA 45's definition of Flammable Liquids is very different than the VCC's definition.

The VCC defines Flammable Liquids as a Class IA Flammable Liquid, a Class IB Flammable Liquid, or a Class IC Flammable Liquid.

NFPA 45 establishes Flammable Liquids as a single definition that includes the 3 Classes of Flammable Liquids established by the VCC.

The VCC regulates the Class IA Flammable Liquids more rigorously than the Class IB or Class IC Flammable Liquids.

The VCC Table 307.1(1) *Maximum Allowable Quantity Per Control Area of Hazardous Material Posing a Physical Hazard 'Material'* that would satisfy the NFPA 45 Definition of Flammable Liquids would be "Flammable Liquid Combination (IA, IB, IC)". This quantity, without modification, is indicated as 120 gallons. Footnote 'h' to Table 307.1(1) for this material cites 'containing not more than the maximum allowable quantity per control area of Class IA, Class IB, or Class IC Flammable Liquids'. VCC Table 307.1(1) limits Class IA Flammable Liquids to 30 gallons of the 120 gallon "Flammable Liquid Combination" quantity.

As that NFPA 45 does not regulate Flammable Liquids by Class; the entire 120 gallons could be what the VCC would define as Class IA Flammable Liquids.

All things being equal, just the application of the NFPA 45's Definition of Flammable Liquids permits an increase of Class IA Flammable Liquids (the most flammable liquids regulated) to 400% of that which is permitted by the VCC.

2. Increased Quantity of Flammable Liquids Permitted with Reduced or No Fire Separation Requirements

Per NFPA 45 Table 5.1.1 *Separation Requirements and Height Allowances for Laboratory Units*, a 'Laboratory Unit D' is permitted to be of any size, is permitted on any story of the building and Fire Separations are not required, however the building is to be protected throughout with an NFPA 13 Fire Sprinkler System.

Per NFPA 45 Table 10.1.1(b) *Maximum Quantities of Flammable and Combustible Liquids in Laboratory Units Outside of Inside Liquid Storage Areas*, the quantity of Class I Flammable Liquids permitted per 'Laboratory Unit D' is 1 gallon per 100 sqft to a maximum quantity of 75 gallons. Footnote 'e' requires that the quantities be reduced by 50% for C and D laboratory units located above the 6th floor. The resulting quantity would be 0.5 gallons per 100 sqft to a maximum of 37.5 gallons per laboratory unit. Assuming a 20,000 sqft floor plate with 5,000 sqft core area and Laboratory Units of 500 sqft in size; 30 Laboratory Units could result in a floor capacity of 75 gallons where fire rated separations between laboratory units are not required.

VCC 414.2 *Control Areas*, defines the maximum number of Control Areas permitted on a given floor and the Maximum Allowable Quantity (MAQ) of Hazardous Materials for that Floor.

The maximum number of Control Area permitted on the 7th floor of a building is 2 and the MAQ (modified for sprinklers only) is 5% of Table 307.1.1(1). Where each Control Area is separated with 2 hr Fire Barriers and Horizontal Assemblies. The allowable quantity of Class I Flammable Liquid as defined by NFPA 45 (Combination Class IA, IB, IC) is 12 gallons per Control Area with a floor maximum of 24 gallons. When considering Class IA Flammable Liquids the allowable quantity is 3 gallons per Control Area with a floor maximum of 6 gallons.

75 gallons of Class IA Flammable Liquids permitted by NFPA 45 without requiring fire rated separations between the laboratory units vs 6 gallons of Class IA Flammable Liquids permitted by the VCC with 2 hr fire rated separations between Control Areas....Increased Hazard!

3. NFPA 45 views the other Hazardous Materials defined within VCC Table 307.1(1) and/or VCC Table 307.1(2) as being regulated where a 'Control Area' is equivalent to a 'Laboratory Unit'.

NFPA 45 Section 9.2.3.1 Storage reads "This Section requires the Chemical Inventories in each Laboratory Unit to be maintained within the maximum allowable quantities specified in the applicable fire prevention code or building code except as modified in Chapter 10 for buildings more than three stories". NFPA 45 Section A9.2.3.1 reads "the maximum allowable quantities of hazardous materials for an individual laboratory unit would be equal to the baseline maximum quantities established for a Control Area". NFPA 45 Section 9.2.3.1.3 reads "the maximum allowable quantities shall be reduced by 50 percent for Class C and Class D laboratory units located above the sixth floor".

Based on the above NFPA 45 sections the other Hazardous Materials defined within VCC Table 307.1(1) and/or VCC Table 307.1(2), such as 'Highly Toxic' materials would be limited to 50% of the defined Maximum Allowable Quantities on the 7th floor of a building. NFPA 45 would limit Highly Toxic materials to ½ gallon 'Storage' per Laboratory Unit. NFPA 45 Table 5.1.1 does not limit the area of a Class D laboratory, does not require fire separations between Laboratory Units. Assuming a 20,000 sqft floor plate with 5,000 sqft core area and Laboratory Units of 500 sqft in size; 30 Laboratory Units could result in a floor capacity of 15 gallons of Highly Toxic Materials.

VCC Table 414.2.2 permits 2 Control Areas per floor with the Maximum Allowable Quantity of Hazardous Material of 5%. The resulting (not modified) quantity of Highly Toxic Materials permitted would be 0.05 gallons per Control Area or 0.1 gallons for the floor.

How are the multipliers permitted by VCC Table 307.1(1) and/or VCC Table 307.1(2) to be applied?

15 gallons of Highly Toxic Material permitted by NFPA 45 without requiring fire rated separations between the laboratory units vs 0.1 gallons of Highly Toxic Material permitted by the VCC with 2 hr fire rated separations between Control AreasIncreased Hazard!

4. Some questions pertaining to the application of NFPA 45

Is NFPA 45 Section 1.4.1 Retroactivity to be applied? This Section where specified would permit the provisions of this Standard to be retroactive to existing buildings.

There appears to be a conflict in the construction of the duct from chemical fume hoods between NFPA 45 Section 8.5 and NFPA 45 Section 8.10.3

5. Alternative Methods Currently Available to the Building Official

The VCC does provide a vehicle to permit unusual conditions to be considered to be consistent with the intent of the VCC with mitigating circumstances that reduce the associated risk. A 'Code Modification' or 'Code Waiver' is used by BCOM to accomplish this on a specific and individual basis.

In consideration of the proposed 'Code Change' one has to ask:

Does this proposed 'Code Change' result in a safer building for the occupants than what is prescribed by the VCC?

Does this proposed 'Code Change' result in a safer building for the First Responders than what is prescribed by the VCC?

Would I as the Code Official support the proposed 'Code Change' as a 'Code Modification' to VCC Sections 307, 414, & 415 without additional requirements to a building under my jurisdiction?

J. Christopher Raha, P.E., C.B.O., C.F.C.O
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Bureau of Capital Outlay Management

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804.786.4134

September 17, 2013

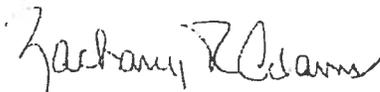
Claude O. Hutton, P.E., MBA, CBO, CFO
Fire Marshal Manager
State Fire Marshal's Office - Western & S.W.Region
VA. Department of Fire Programs
945 H. North Main Street, Marion VA 24354

Dear Claude:

I am writing in support of the State Fire Marshall's Office's efforts to incorporate NFPA 45 into the VCC and SFPC as an alternative means of compliance with the requirements for the handling, storage and use of hazardous materials. As you are aware, many of our existing research buildings were built prior to the introduction of the control area concept; as such, it is very difficult to determine what quantities of chemicals are reasonable and prudent from a code perspective, and application of the current code requirements in these older buildings would significantly impact our research programs. NFPA 45 would provide a consistent framework by which Virginia Tech could manage chemicals used in research in many of these older buildings. Also, use of NFPA 45 in new construction would provide greater latitude by which research could be performed in multi story buildings by allowing chemicals to be managed by their density in lieu of strict quantity limits.

We appreciate the work you have done developing proposed code changes that would provide universities within the Commonwealth of Virginia a tool that would facilitate our compliance efforts.

Sincerely,



Zachary R. Adams, PE, CSP, CIH
Assistant Director

Invent the Future

August 19, 2013

Ron Reynolds, MPA, MPH, CBO, CFO
Deputy, State Fire Marshal's Office
1005 Technology Park Drive
Glen Allen, VA 23059
Office 804-612-7268
Fax 804-371-3367

Re: NFPA 45 Code Change Proposals for Laboratories - 2012 Building and Fire Codes

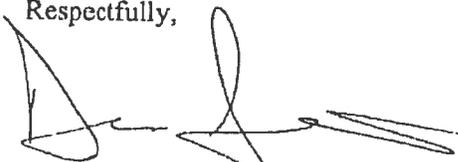
Mr. Reynolds,

The incorporation of NFPA 45 Standard on Fire Protection for Laboratories Using Chemicals as an alternative, or exception, to the VCC requirements for the handling, storage, and use of hazardous materials is strongly desired by George Mason University due to the age of our buildings and activities conducted therein. Many of our buildings were constructed prior to the development of the control area concept and are therefore not designed to incorporate multiple control areas, especially in buildings with three or more stories.

At George Mason University we conduct routine inspections of laboratories and enforce, to the extent possible, the storage of hazardous chemicals in accordance with the Virginia Statewide Fire Prevention Code. In rare cases laboratories may exceed MAQ due to the construction date of campus buildings and the institutions focus on research and laboratory instruction. University laboratories that do or have the potential to exceed MAQ are sprinklered and provided flammable storage cabinets. In our professional assessment the adoption of NFPA 45 will continue to maintain a high standard of safety that can mitigate fires to the same extent that the current code attempts to achieve while allowing flexibility for unique activities such as research and teaching in university settings.

We support the State Fire Marshalls Office's request to incorporate NFPA 45 into the VCC on the grounds that it will be mutually beneficially for all parties concerned and allow a regulated, safe, and practical alternative to the burden of the current regulatory requirement. If I can be of any further assistance with regard to this matter please feel free to contact me at your convenience.

Respectfully,



David Farris, MBA, CHMM
Director Emergency Management and Fire Safety

From: Dillman, Robert P [mailto:dillman@wm.edu]
Sent: Tuesday, August 06, 2013 3:55 PM
To: 'Mays, Delphine (daa3x)'; gdean@dhcd.state.va.us; Gall, Elaine (ebg5x); Gerald Drumheller (gerald@virginia.edu); hinson@vt.edu; Allen, Ralph (roa2s); Reynolds, Ron (VDFF)
Cc: Dillman, Robert P; Rudloff, David W
Subject: RE: NFPA 45 Code Change Proposal Meeting

I received a call from Gerald Drumheller about this issue. I support incorporating the portions of NFPA 45 into the Code that would give Fire Marshals, Building Officials and EH&S folks more latitude with respect to quantities of flammables and combustibles.

Bob Dillman

(William & Mary Building Official)

UVA Bullets Supporting NFPA 45

NFPA 45 provides a mechanism to control behavior and regulate chemicals in a manner that allows for quantities/density of chemicals needed for research methodology while maintaining a safe environment.

NFPA 45 looks at density of chemicals while allowing quantity levels needed in current (today's) research environment.

Several of our facilities were built prior to the development and implementation of the control area concept. The current fire code, if applied to existing facilities, would preclude and eliminate (shut down) research in many facilities that have always been utilized for research.

NFPA 45 was created specifically for laboratories by professionals. NFPA 45 was designed to achieve comprehensive laboratory fire prevention and protection to occupants and emergency personnel. NFPA 45 allows for the safe use of chemicals while not serving as an impediment to research.

University has a firm commitment to training and safe lab practices. Lab Safety Group coupled with the Fire Safety group performs inspections and lab visitations coupled with educational programs for lab personnel.

UVA has developed a "Sign Database" that tracks and indicates the type and amount of chemicals that are in the labs. Each lab has signage that indicates the classification of the lab, hazards, etc. This is a great tool for emergency response crews if they are called for an incident in a lab. UVA works closely with the Charlottesville Fire Department to insure they are educated to the fire risks in laboratories, coordinate emergency responses and guidelines, offer technical expertise during incidents, etc.

Gerald Drumheller

UVA Fire Marshal and Training Coordinator

University of Virginia

Office of Environmental Health & Safety

PO Box 400322

Charlottesville Va 22904-4322

Ph – 434.982.4914 Fax – 434-243-1735

E-mail: Gerald@virginia.edu

Date prepared: 10/8/13

USBC SECTION OF AGENDA

VIRGINIA DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
DIVISION OF BUILDING AND FIRE REGULATION

Code Change Form for the 2012 Code Change Cycle

Code Change Number: _____

Proponent Information

(Check one): Individual Government Entity Company

Name: Michael Redifer

Representing: City of Newport News

Mailing Address: 2400 Washington Avenue 3rd flr Newport News, VA 23607

Email Address: mredifer@nngov.com

Telephone Number: 757-926-8861

Proposal Information

Code(s) and Section(s): Virginia Construction Code Section 103.10

Proposed Change (including all relevant section numbers, if multiple sections):

Add Items 7 and 8 to 103.10 as follows (no changes to existing text)

7. Sections C101.4 (excluding Section C101.4.3), C101.5, R101.4 (excluding Section R101.4.3) and R101.5 of the IECC.
8. Section N1101 (excluding Section N1101.3) of the IRC.

Supporting Statement (including intent, need, and cost impact of the proposal):

Section 101.7 deletes administrative provisions of the referenced model codes in order to reduce potential conflict with Chapter 1 of the VCC. Specific administrative and testing provisions contained within the model codes are incorporated by reference through Section 103.10. Important scoping provisions are contained within Chapter 1 of the IECC. Among them are exemptions for historic and low energy buildings. Without this proposed change, applying these exemptions is questionable and without the exemptions the VCC becomes significantly more restrictive than the model code and results in increased costs. Additionally, depending on the scope of work involved, Sections C101.4.3 and R101.4.3 can be more restrictive than the VCC has traditionally been applied with respect to alterations so the exclusion of these provisions is provided to ensure that retrofitting of windows, insulation, etc. is not required when the scope of work involves what historically has been exempted from current code by the VCC. The proposed Item 8 accomplishes the same intent in Chapter 11 of the IRC which is extracted from the IECC. It is anticipated that these provisions will decrease the cost of construction for affected buildings and will be cost neutral for unaffected buildings.

NOTE:

Although referencing only the section numbers of the IECC is in keeping with the structure of VCC 103.10, the following full text from IECC Sections C101.4, C101.5, R101.4 and R101.5 is provided in an effort to eliminate the need to refer to another document while considering this proposal. Note that C101.4.3 and R101.4.3 are identified as being Sections which are specifically EXCLUDED from the proposed change.

C101.4 Applicability. Where, in any specific case, different sections of this code specify different materials, methods of construction or other requirements, the most restrictive shall govern. Where there is a conflict between the general requirement and a specific requirement, the specific requirement shall govern.

C101.4.1 Existing buildings. Except as specified in this chapter, this code shall not be used to require the removal, *alteration* or abandonment of, nor prevent the continued use and maintenance of, an existing building or building system lawfully in existence at the time of adoption of this code.

C101.4.2 Historic buildings. Any building or structure that is listed in the State or National Register of Historic Places; designated as a historic property under local or state designation law or survey; certified as a contributing resource with a National Register listed or locally designated historic district; or with an opinion or certification that the property is eligible to be listed on the National or State Registers of Historic Places either individually or as a contributing building to a historic district by the State Historic Preservation Officer or Keeper of the National Register of Historic Places, are exempt from this code.

C101.4.3 (EXCLUDED FROM CODE CHANGE PROPOSAL) Additions, alterations, renovations or repairs. Additions, alterations, renovations or repairs to an existing building, building system or portion thereof shall conform to the provisions of this code as they relate to new construction without requiring the unaltered portion(s) of the existing building or building system to comply with this code. Additions, alterations, renovations or repairs shall not create an unsafe or hazardous condition or overload existing building systems. An addition shall be deemed to comply with this code if the addition alone complies or if the existing building and addition comply with this code as a single building.

Exception: The following need not comply provided the energy use of the building is not increased:

1. Storm windows installed over existing fenestration.
2. Glass only replacements in an existing sash and frame.
3. Existing ceiling, wall or floor cavities exposed during construction provided that these cavities are filled with insulation.
4. Construction where the existing roof, wall or floor cavity is not exposed.
5. Reroofing for roofs where neither the sheathing nor the insulation is exposed. Roofs without insulation in the cavity and where the sheathing or insulation is exposed during reroofing shall be insulated either above or below the sheathing.
6. Replacement of existing doors that separate *conditioned space* from the exterior shall not require the installation of a vestibule or revolving door, provided, however, that an existing vestibule that separates a *conditioned space* from the exterior shall not be removed.
7. Alterations that replace less than 50 percent of the luminaires in a space, provided that such alterations do not increase the installed interior lighting power.
8. Alterations that replace only the bulb and ballast within existing luminaires in a space provided that the *alteration* does not increase the installed interior lighting power.

C101.4.4 Change in occupancy or use. Spaces undergoing a change in occupancy that would result in an increase in demand for either fossil fuel or electrical energy shall comply with this code. Where the use in a space changes from one use in Table C405.5.2 (1) or (2) to another use in Table C405.5.2 (1) or (2), the installed lighting wattage shall comply with Section C405.5.

C101.4.5 Change in space conditioning. Any nonconditioned space that is altered to become *conditioned space* shall be required to be brought into full compliance with this code.

C101.4.6 Mixed occupancy. Where a building includes both *residential* and *commercial* occupancies, each occupancy shall be separately considered and meet the applicable provisions of IECC – Commercial Provisions or IECC – Residential Provisions.

C101.5 Compliance. *Residential buildings* shall meet the provisions of IECC – Residential Provisions. *Commercial buildings* shall meet the provisions of IECC – Commercial Provisions.

C101.5.1 Compliance materials. The *code official* shall be permitted to approve specific computer software, working sheets, compliance manuals and other similar materials that meet the intent of this code.

C101.5.2 Low energy buildings. The following buildings, or portions thereof, separated from the remainder of the building by *building thermal envelope* assemblies complying with this code shall be exempt from the *building thermal envelope* provisions of this code:

1. Those with a peak design rate of energy usage less than 3.4 Btu/h-ft² (10.7 W/m²) or 1.0 watt/ft² (10.7 W/m²) of floor area for space conditioning purposes.
2. Those that do not contain *conditioned space*.

R101.4 Applicability. Where, in any specific case, different sections of this code specify different materials, methods of construction or other requirements, the most restrictive shall govern. Where there is a conflict between the general requirement and a specific requirement, the specific requirement shall govern.

R101.4.1 Existing buildings. Except as specified in this chapter, this code shall not be used to require the removal, *alteration* or abandonment of, nor prevent the continued use and maintenance of, an existing building or building system lawfully in existence at the time of adoption of this code.

R101.4.2 Historic buildings. Any building or structure that is listed in the State or National Register of Historic Places; designated as a historic property under local or state designation law or survey; certified as a contributing resource with a National Register listed or locally designated historic district; or with an opinion or certification that the property is eligible to be listed on the National or State Registers of Historic Places either individually or as a contributing building to a historic district by the State Historic Preservation Officer or Keeper of the National Register of Historic Places, are exempt from this code.

R101.4.3 (EXCLUDED FROM CODE CHANGE PROPOSAL) Additions, alterations, renovations or repairs. Additions, alterations, renovations or repairs to an existing building, building system or portion thereof shall conform to the provisions of this code as they relate to new construction without requiring the unaltered portion(s) of the existing building or building system to comply with this code. Additions, alterations, renovations or repairs shall not create an unsafe or hazardous condition or overload existing building systems. An addition shall be deemed to comply with this code if the addition alone complies or if the existing building and addition comply with this code as a single building.

Exception: The following need not comply provided the energy use of the building is not increased:

1. Storm windows installed over existing fenestration.
2. Glass only replacements in an existing sash and frame.
3. Existing ceiling, wall or floor cavities exposed during construction provided that these cavities are filled with insulation.
4. Construction where the existing roof, wall or floor cavity is not exposed.
5. Reroofing for roofs where neither the sheathing nor the insulation is exposed. Roofs without insulation in the cavity and where the sheathing or insulation is exposed during reroofing shall be insulated either above or below the sheathing.
6. Replacement of existing doors that separate *conditioned space* from the exterior shall not require the installation of a vestibule or revolving door, provided, however, that an existing

- vestibule that separates a *conditioned space* from the exterior shall not be removed.
7. Alterations that replace less than 50 percent of the luminaires in a space, provided that such alterations do not increase the installed interior lighting power.
 8. Alterations that replace only the bulb and ballast within existing luminaires in a space provided that the *alteration* does not increase the installed interior lighting power.

R101.4.4 Change in occupancy or use. Spaces undergoing a change in occupancy that would result in an increase in demand for either fossil fuel or electrical energy shall comply with this code.

R101.4.5 Change in space conditioning. Any nonconditioned space that is altered to become *conditioned space* shall be required to be brought into full compliance with this code.

R101.4.6 Mixed occupancy. Where a building includes both *residential* and *commercial* occupancies, each occupancy shall be separately considered and meet the applicable provisions of IECC – Commercial Provisions or IECC – Residential Provisions.

R101.5 Compliance. *Residential buildings* shall meet the provisions of IECC – Residential Provisions. *Commercial buildings* shall meet the provisions of IECC – Commercial Provisions.

R101.5.1 Compliance materials. The *code official* shall be permitted to approve specific computer software, working sheets, compliance manuals and other similar materials that meet the intent of this code.

R101.5.2 Low energy buildings. The following buildings, or portions thereof, separated from the remainder of the building by *building thermal envelope* assemblies complying with this code shall be exempt from the *building thermal envelope* provisions of this code:

1. Those with a peak design rate of energy usage less than 3.4 Btu/h-ft² (10.7 W/m²) or 1.0 watt/ft² (10.7 W/m²) of floor area for space conditioning purposes.
2. Those that do not contain *conditioned space*.

Submittal Information

Date Submitted: November 29, 2012 (revised 1/3/13 and 4/16/13 and 10/7/13)

The proposal may be submitted by email as an attachment, by fax, by mail, or by hand delivery.

Please submit the proposal to:

DHCD DBFR SBCO (State Building Codes Office)
600 East Main Street
Suite 300
Richmond, VA 23219

Email Address: Vernon.hodge@dhcd.virginia.gov
Fax Number: (804) 371-7092
Phone Numbers: (804) 371-7150



VIRGINIA DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
DIVISION OF BUILDING AND FIRE REGULATION

Code Change Form for the 2012 Code Change Cycle

Code Change Number: _____

Proponent Information

(Check one): Individual Government Entity Company

Name (Representing): *Ken Fredgren*, Chairman, Reston Accessibility Committee of Reston Citizens Association, 703-391-9019, fredgren.k@gmail.com. (Lead contact.)

Teri Barker-Morgan, Program Manager, Virginia Board for People with Disabilities, Richmond, 804-786-9381, Teri.Barker@vbpd.virginia.gov.

Gayl Brunk, Executive Director, Valley Associates for Independent Living (VAIL), Harrisonburg, 540-433-6513, gayl@govail.org.

Marcia DuBois, Program Coordinator, Community Based Services-Field Rehabilitative Services, Department for Aging and Rehabilitative Services, Richmond, 804-662-7083, Marcia.DuBois@dars.virginia.gov.

Karen Michalski-Karney, Executive Director, Blue Ridge Independent Living Center, Roanoke, 540-342-1231, kmichalski@brilc.org.

Proposal Information

Code(s) and Section(s): USBC, Virginia Construction Code Sections 108.1 and 3411.9.5

Proposed Change (including all relevant section numbers, if multiple sections):

Add new Item #5 to Section 108.1 and add new Section 3411.9.5 to read as follows:

5. Restriping parking lots of public accommodations and commercial facilities which would be required to provide accessible parking spaces if newly constructed.

3411.9.5 Accessible parking spaces. When existing parking lots of public accommodations and commercial facilities are restriped, accessible parking spaces shall be provided as required for newly constructed parking lots.

Supporting Statement (including intent, need, and cost impact of the proposal):

The original proposal resulted from the initial review by DHCD workgroups of proposals submitted by a legislative study group (the HJR 648 Work Group). This edited proposal is offered as a clarification of the compromise version submitted in December, 2012, by groups involved in the HJR 648 study.

The compromise is to limit the language in the proposal to only that in the U.S. Department of Justice publication, "ADA Business Brief: Restriping Parking Lots," which only covers restriping, and requires the action prescribed in this proposed code update. The HJR 648 study group proposal included reconfiguring and resurfacing of parking lots, which may be more difficult to enforce and extend further than the Department of Justice's concern.

"Public accommodations and commercial facilities" designated above are the purview of Title III of the Americans with Disabilities Act, which title does not include residential occupancies.

Illustrating the need for this code change, the following data on Accessible Parking Placards was collected from the DMV in September, 2013, by Teri Barker of the Virginia Board for People with Disabilities:

Current Active Placards		
(9/27/13)		
Placard Type	Count	% of Total
Permanent	462,624	93.84%
Institutional	5,605	1.14%
Temporary	24,776	5.03%
Total	493,005	100%

The number of permanent placards has increased by approximately 14% since 2009. The data will appear in the transportation chapter of the VBPD 2014 assessment of the disability service system.

Submittal Information

Date Submitted: _____

The proposal may be submitted by email as an attachment, by fax, by mail, or by hand delivery.

Please submit the proposal to:

DHCD DBFR SBCO (State Building Codes Office)
 600 East Main Street
 Suite 300
 Richmond, VA 23219

Email Address: Vernon.hodge@dhcd.virginia.gov
 Fax Number: (804) 371-7092
 Phone Numbers: (804) 371-7150



VIRGINIA DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
DIVISION OF BUILDING AND FIRE REGULATION

Code Change Form for the 2012 Code Change Cycle

Code Change Number: _____

Proponent Information (Check one): Individual Government Entity Company

Name: Mike Toalson-Randy Melvin

Representing: HBA of Virginia

Mailing Address: 707 East Franklin Street, Richmond, VA 23219

Email Address: mltoalson@hbav.com
randy.melvin@whihomes.com

Telephone Number: 804 643 2797
410 365 7781

Proposal Information

Code(s) and Section(s): IRC Section Number: M1503.4 Makeup Air Required and M1503.4.1 Location (new)

Proposed Change (including all relevant section numbers, if multiple sections):

Modify the section as shown below:

M1503.4 Makeup air required. Exhaust hood systems capable of exhausting ~~in excess of 600~~ more than 400 cubic feet per minute (0.19 m³/s) shall be provided with makeup air at a rate approximately equal to the exhaust air rate in excess of 400 cubic feet per minute. Such makeup air systems shall be equipped with a means of closure and shall be automatically controlled to start and operate simultaneously with the exhaust system.

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

1. Where the floor area within the air barrier of a dwelling unit is at least 1500 square feet, and where natural draft or mechanical draft space-or water-heating appliances are not located within the air barrier.
2. Where the floor area within the air barrier of a dwelling unit is at least 3000 square feet, and where natural draft space-or water-heating appliances are not located within the air barrier.

M1503.4.1 Location Kitchen exhaust makeup air shall be provided in the same room as the exhaust system or in a room or duct system communicating through one or more permanent openings with the room in which such exhaust system is located. Permanent openings shall be at least of the same net cross-sectional area as the required area of the makeup air openings.

Supporting Statement (including intent, need, and cost impact of the proposal):

As originally written in the 2012 IRC, section M1503.4 allows range hoods up to 400 cfm to be installed without makeup air. It would be consistent to require makeup air equaling the excess of 400 cfm for larger capacity fans. Essentially, there would be no difference between the effect a 400 cfm fan has on a house and a 600 cfm fan with 200 cfm of makeup air. This would also improve the feasibility and acceptance of this code section as well as cut down on the amount of wasted energy and potential occupant discomfort caused by needlessly introducing excessive amounts of unconditioned air.

Section M1503.4.1 clarifies that that the makeup air enter the home, elsewhere in the home other that the room the range hood is located in as long as it has a clear pathway to the room the range hood is located in. The concern driving this code change is that kitchen exhaust makeup air has only been a commercial concept until fairly recently.

Makeup air in a commercial kitchen has very specific requirements which are not necessary in a residential setting. For example, the makeup air opening in a commercial kitchen needs to be located in the direct vicinity of the draft hood. Homeowners, however, have valid reasons for not wanting the opening in the kitchen, including comfort, practicality, and aesthetics. Locating the opening in another room or bringing the makeup air in through the duct system allows the unconditioned air to mix and temper which is vital in harsher climates. When these openings are required in the kitchen, there is a much greater possibility that they will be covered or otherwise disabled. Please also see the proposed code change for IRC M1508.1 Venting and Depressurization

Submittal Information

Date Revised September 18, 2013 originally submitted: February 18, 2013

The proposal may be submitted by email as an attachment, by fax, by mail, or by hand delivery.

Please submit the proposal to:

DHCD DBFR SBCO (State Building Codes Office)
600 East Main Street
Suite 300
Richmond, VA 23219

Email Address: Vernon.hodge@dhcd.virginia.gov
Fax Number: (804) 371-7092
Phone Numbers: (804) 371-7150





January 24, 2013

TO MEMBERS OF THE Z21/83 TECHNICAL COMMITTEE:

LETTER BALLOT FOR ACTION

Due Date for Returning Ballot – February 25, 2013

Action Requested

Approve proposed revisions to American National Standard/CSA Standard for Gas Piping Systems Using Corrugated Stainless Steel Tubing (CSST), ANSI LC 1•CSA 6.26. If approved by the Committee, ANSI and the IGAC, this will be the Third Edition of the standard.

Background

Attached is a copy of the proposed revisions that were posted for Review and Comment in September 2012, and approved to be submitted to the Z21/83 and CSA Technical Committees for their consideration during the Z21/CSA Joint Technical Advisory Group On Standards For Gas Piping Systems Using Corrugated Stainless Steel Tubing (CSST) meeting held on December 10, 2012 meeting.

Conclusion

Please keep in mind that you are being asked to vote on the proposed revisions to ANSI LC 1•CSA 6.26, and your vote should reflect your position on this item only.

In accordance with CSA America Procedures, your reasons for a disapproving vote must be included with your ballot.

Sincerely,

Shannon M. Corcoran
Project Manager

FOR REVIEW AND COMMENT ONLY

Not for publication. This draft text is for circulation for review and comment only and has not been published or otherwise officially promulgated. All rights reserved. This document may be reproduced for information purposes.

Proposed Revisions to

AMERICAN NATIONAL STANDARD/CSA STANDARD FOR GAS PIPING SYSTEMS USING CORRUGATED STAINLESS STEEL TUBING, ANSI LC 1•CSA 6.26

NOTE: The following draft revisions were adopted for distribution for review and comment by the Z21/CSA Joint Technical Advisory Group On Standards For Gas Piping Systems Using Corrugated Stainless Steel Tubing at its July 16, 2012 meeting. These revisions are based on the American National Standard/CSA Standard for Gas Piping Systems Using Corrugated Stainless Steel Tubing (CSST), ANSI LC 1-2005•CSA 6.26-2005, addendum “a”, ANSI LC 1a-2009•CSA 6.26a-2009, and addendum “b”, ANSI LC 1b-2011•CSA 6.26b-2011.

Proposed deletions are shown in ~~strikeout~~ and additions are shaded and underlined

Part I: Construction

1.10 Installer Training

The manufacturer shall establish and maintain an installer training program and a database of installers who have completed the manufacturer's training requirements. An identification card shall be supplied to each installer who has completed the manufacturer's training requirements, and a record of the installer's contact data shall be maintained in the database. The identification card shall include the following information:

- CSST manufacturer's name and telephone number
- CSST product(s)/brand(s) covered by training
- Unique serial number for the identification card (recorded in database)
- Installer's name and the date of training or card issuance (recorded in database), and
- Statement that the named installer has completed the manufacturer's training program to install [insert manufacturer's name or brand] CSST

***RATIONALE:** Training of installers is a manufacturer-based requirement, and therefore it transcends any other installer qualifications imposed by the country, state or local jurisdiction such as licensing, education or apprenticeship. CSST systems have unique features, including fitting attachments proprietary to each manufacturer, which are not interchangeable between brands. The requirement has been modified and moved to the body of the Standard and not in Exhibit B since training is required whether the installer is US-based or Canada-based. The training requirement was modified to create auditable action items for the certifying agency such as a database and a training program.*

1.2 Materials

1.2.6

For tubing which includes a nonmetallic coating or covering, the coating shall comply with the international color designation of yellow. A jacket or covering applied to the tubing shall be either yellow or black, and marked in a contrasting color.

***RATIONALE:** To recognize alternate color jackets that are currently available in the marketplace consistent with other commercial gas-piping products.*

Part II: Performance

2.15 Arc Resistant Jacket or Covering System (Optional)

2.15.1 General

2.15.1.1 Unless otherwise specified, all testing shall be performed in accordance with the general requirements of ANSI LC-1 and as stipulated in Part II Performance.

2.15.1.2 Tubing which has an arc resistant jacket or covering system as an alternate direct-bonding means (henceforth referred to as the "jacket") shall comply with the following tests.

2.15.1.3 Unless otherwise specified, the jacket shall comply with the following tests with the tubing, jacket, and fitting(s) assembled as a final installation and in accordance with the manufacturer's instructions.

2.15.1.4 Testing shall be performed on samples of tubing sizes ½-inch and 1-inch in diameter. Each test sample shall be at least three feet in length or as specified within the Method of Test.

2.15.2 Resistance of Jacket Material To Extreme Environment(s)

2.15.2.1 Resistance of Jacket Assembly to Extreme Temperature Cycles

Test specimens of the jacket material shall be prepared (based on the fabrication technique used to apply the jacket) and subjected to exposure to low temperature in accordance and compliance with ASTM D746-07 for Brittleness Temperature of Plastics and Elastomers by Impact. The manufacturer shall present a test report from an accredited testing laboratory to the listing agency including a statement on the minimum embrittlement temperature.

2.15.2.2 Resistance of Jacket Assembly to Corrosion

The tubing, jacket and fitting assembly (assembled per the manufacturer's instructions) shall be subjected to the *Standard Practice for Operating Salt Spray (Fog) Apparatus, ASTM B117-97*, for not less than 96 hours without evidence of pitting, flaking, cracking or signs of corrosive attack in accordance with Part 1.2.5, and then shall be subsequently subjected to and pass Part 2.15.3 Electrical Tests. Two samples of each size shall be prepared and subjected to the prescribed test. Products that do not incorporate a metallic layer or component as part of the jacket are not required to be tested to 2.15.2.2. The manufacturer shall present a test report from an accredited testing laboratory to the listing agency and deliver the test samples to the laboratory performing the Electrical Tests.

2.15.3 Electrical Tests

2.15.3.1 Robustness Against Arcing (Indirect Lightning)

Tubing, jacket and fitting assemblies shall withstand electrical arcing, in accordance with the following method of test without perforation of the tubing and without leakage in excess of that specified in Part 2.2, Leakage. The test samples subjected to the salt spray exposure (if applicable) in Part 2.15.2.2 Resistance of Jacket Assembly to Corrosion shall be used in the testing. Other samples shall be used if no samples are required to be subjected to salt spray exposure in Part 2.15.2.2. Testing shall be performed by an accredited lightning testing laboratory acceptable to the listing agency.

Method of Test

For arc robustness determination, a electrical waveform (Current vs. Time) shall be utilized. (NOTE: Additional testing intended to address a wider range of possible transient sources and behaviors may be considered, but this has not been included in the prescribed Method of Test.) The waveform is defined by its rise-time to peak current and fall-time to 50 percent of peak amplitude. The selected waveform is 10 μ s x1000 μ s.

Generator Calibration:

An electrical test generator and appropriate measurement equipment shall be assembled to generate the waveform under consideration and to record generator output. (See Figure 1 for schematic.) The generator assembly shall utilize an electrode of 1/4 in diameter attached to the output of the generator (i.e. live terminal). The test sample is grounded to the generator with a minimum AWG 6 copper conductor or equivalently sized braided strap. The test sample shall be supported in such a manner to prevent arcing or conduction from the test sample to adjacent equipment.

A length of copper pipe is installed as the test sample, with a 1/8 in gap between the copper pipe and the generator electrode. The generator is charged to the desired level, and discharged through the electrode to the copper pipe (via an arc) and then to ground. Arc attachment to the tubing shall be verified. Arc attachment to nearby equipment or to end connections on the copper tubing invalidates this test run. The recorded generator output is verified against the desired waveform. Adjustments to the generator assembly are made and re-tested until the generator output matches the desired waveform output.

Testing:

The test sample is installed with the electrode placed over a straight portion of the sample, with a 1/8 in gap between the exterior of the jacket and the generator electrode. (Refer to Figure 1) The generator is charged to the desired level, and discharged through the electrode to the test assembly (via arc) and to ground. Arc attachment to

shall be installed within the drag zone. The test apparatus shall be solidly secured to the table/floor to prevent movement or shaking of the assembly during the pull tests.

Two test specimens of each size, each consisting of a 15-ft length of tubing, shall be prepared. Each test specimen shall be “snaked” through the three offset holes before starting the test. The length of tubing is then pulled, by hand, through the drag zone until the end of the test specimen exits the last member. The rate of pull should be approximately 1 to 2 feet per second.

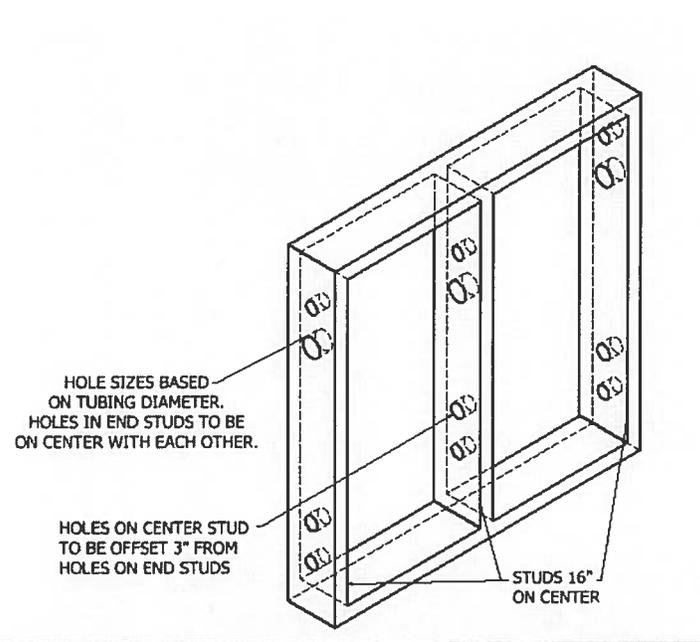


Figure 2 Set-Up for Tubing Wear Test

Upon completion of the pull test, the tubing and jacket shall be inspected for physical damage. Any tearing or ripping of the jacket exposing the underlying stainless steel tubing indicates non-compliance with this requirement.

RATIONALE: *Some CSST products have been developed that use a coating or covering system to provide an alternate means of direct-bonding. If such a coating is provided as part of the CSST system, the added tests address the durability and integrity of the coating. The performance requirements and acceptance criteria represent minimally acceptable values that have been developed by independent sources. The International Code Council Evaluation Services have developed such testing methods and listing criteria (LC1024 – Listing Criteria for CSST Utilizing a Protective Jacket) that are being used to list current products. The proposed test methods are similar to testing widely used in the lightning analysis industry and have been recommended by independent lightning experts.*

Exhibit B: Items Unique to United States

~~**B.1** The installation shall be done by a qualified installer, who has passed the manufacturer's certification/training program.~~

RATIONALE: *Training of installers is a manufacturer-based requirement, and therefore it transcends any other installer qualifications imposed by the country, state or local jurisdiction such as licensing, education or apprenticeship. CSST systems have unique features, including fitting attachments proprietary to each manufacturer, which are not interchangeable between brands. The requirement has been modified and moved to the body of the Standard and not in Exhibit B since training is required whether the installer is US-based or Canada-based. The training requirement was modified to create auditable action items for the certifying agency such as a database and a training program.*

1. *Adoption of the International Wildland-Urban Interface Code (IWUIC)*
 - a. *We believe the adoption of an entire “code” without being vetted through some committee begs for confusion and unanticipated consequences. This is especially true for a code such as this one that dictates construction materials and other construction requirements that may be contrary to the ICC and/or the USBC.*
 - b. *This model code should first be vetted through a committee or ad-hoc group of potentially affected stakeholders – similar to what Virginia did with the International Existing Building Code (IEBC).*
 - c. *Some areas of concern are as follows:*
 - i. *Appears there may be numerous conflicts with current USBC requirements (e.g., retroactive requirements; maintenance requirements; existing conditions; Section 202 to name a few; and fire apparatus roads - 403.1)*
 - ii. *Is the mapping of these areas up-to-date? We believe updated mapping should be conducted prior to incorporating the IWUIC into the USBC to determine its potential impact to construction throughout Virginia.*
 - iii. *It appears Section 404.1 (water sources) could prove problematic for numerous rural areas.*
 - iv. *Requirements for a Fire Protection Plan (Section 405) will certainly add additional costs to all proposed buildings and/or developments.*
 - v. *Chapter 5 includes requirements for how and of what materials buildings can be constructed with.*
 1. *How does this comport with the VCC, IBC and/or IRC?*
 - vi. *Sprinkler systems would be required for all buildings meeting certain criteria (Section 602).*
 1. *How does this comport with the VCC, IBC and/or IRC?*
 - vii. *Defensible space would reduce the size of a number of buildings and/or developments.*
 1. *It may be possible now to control and/or limit development and/or growth through this code.*
 1. *Is this the ultimate intent, and if so, it appears this is best handled as a zoning issue – not a code issue.*
 - viii. *Would the appendices be adopted?*
 - d. *Although we endorse the concept of trying to protect such wildland areas, we believe Virginia should not adopt the IWUIC without a vetting process to address the concerns noted above, as well as others.*

Thank you.

Kenney

J. Kenneth Payne, Jr., AIA, LEED AP BD+C

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VIRGINIA DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
DIVISION OF BUILDING AND FIRE REGULATION

Code Change Form for the 2012 Code Change Cycle

Code Change Number: _____

Proponent Information (Check one): Individual Government Entity Company

Name: Casey Littlefield Representing: _____

Mailing Address: 1003 Rock Spring Rd Bumpass, VA 23024

Email Address: caseylittlefieldmcp@gmail.com Telephone Number: 804-387-9107

Proposal Information

Code(s) and Section(s): VCC and VADR

Proposed Change (including all relevant section numbers, if multiple sections):

Add new Section 107.1.3 to the VCC to read:

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

Change Section 13VAC5-31-75 of the VADR to read:

13VAC5-31-75. Local building department.

A. In accordance with §§ 36-98.3 and 36-105 of the Code of Virginia, the local building department shall be responsible for the enforcement of this chapter and may charge fees for such enforcement activity. The total amount charged for any one permit to operate an amusement device or devices or the renewal of such permit shall not exceed the following, except that when a private inspector is used, the fees shall be reduced by 50%.

1. \$25 for each kiddie ride covered by the permit;
2. \$35 for each circular ride or flat-ride less than 20 feet in height covered by the permit
3. \$55 for each spectacular ride covered by the permit that cannot be inspected as a circular ride or flat-ride in subdivision 2 of this subsection due to complexity or height; and
4. \$150 for each coaster covered by the permit that exceeds 30 feet in height.
5. The local building department may charge an additional fee for permits and inspections of generators and associated wiring for amusement device events. Generators subject to these fees are those used exclusively with amusement devices subject to this code and are inspected by the local building department. The fee charged by the local governing body per event set up for the inspection of all generators and associated electrical components shall not exceed \$165.00 per event and shall not exceed the actual cost to perform the inspection(s).

Exception: Small portable generators serving only cord and plug connected equipment loads.

Supporting Statement (including intent, need, and cost impact of the proposal):

This proposal addresses the concerns of operators of amusement devices that some local building departments are requiring electrical permits under the VCC for generators used with amusement devices and are using the fee schedule established by the local government for electrical permits to charge separate fees for such permits. This proposal only addresses the fee aspect of this situation and clarifies that fees may not be charged under the VCC for any electrical permits issued by the local building department for generators and associated wiring used with amusement devices. The proposal does however establish a new fee under the VADR for inspecting such generators when the local building department does the inspection

After reviewing the current VBCOA Admin Committee proposal that was comprised of previous code submittals for the generator fee, I have removed the wattage requirement (6500 or larger) for portable generators and made an exception for all small portable generators. These are the type typically found at local hardware stores and range from 1,000 to 15,000 watts and mainly used by the inflatable industry. The typical wattage we see for small generators is between 5,500 and 10,000 watts. With the new requirements for a once a year inspection required for inflatables, the current proposal doesn't make sense to require an inspection for the generator but not be required to perform an inspection on the inflatable.

The exception would not include trailer or vehicle mounted generators as Grounding Electrodes are required to be connected to these.

Submittal Information

Date Submitted: 10-1-2013

The proposal may be submitted by email as an attachment, by fax, by mail, or by hand delivery.

Please submit the proposal to:

DHCD DBFR SBCO (State Building Codes Office)
600 East Main Street
Suite 300
Richmond, VA 23219

Email Address: Vernon.hodge@dhcd.virginia.gov
Fax Number: (804) 371-7092
Phone Numbers: (804) 371-7150



VIRGINIA DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
DIVISION OF BUILDING AND FIRE REGULATION

Code Change Form for the 2012 Code Change Cycle

Code Change Number: _____

Proponent Information

(Check one): Individual Government Entity Company

Name: VBCOA IRC Committee

Proposal Information

Code(s) and Section(s): VCC (IRC)

Proposed Change (including all relevant section numbers, if multiple sections):

Change the definition of "Attic, habitable" in the IRC to read as shown below:

ATTIC, HABITABLE. A finished or unfinished area, not considered a *story*, complying with all of the following requirements:

1. The occupiable floor area is at least 70 square feet (17m²), in accordance with Section R304,
2. The occupiable floor area has a ceiling height in accordance with Section R305, and
3. The occupiable space is enclosed by the roof assembly above, knee walls (if applicable) on the sides and the floor-ceiling assembly below.

Habitable attics greater than 1/3 of the area of the story below shall not be permitted in dwellings or townhouses that are three stories above grade plane in height.

Supporting Statement (including intent, need, and cost impact of the proposal):

The intent of this proposal is to restore the number of habitable area stories above grade to three, consistent with scope of the IRC. R101.2 'Scope' limits the application of the IRC to one- and two-family dwellings and townhouses "not more than three stories above grade plane in height"...; the current language in the 'Attic, Habitable' definition: "not considered a story" allows for an additional habitable level above the three story limitation, or in practical terms - a fourth story. However, language is added to permit a habitable attic above the third floor if such attic is less than 1/3 of the area of the story below.

Cost impact: There is no cost impact in this change.

Submittal Information

Please submit the proposal to:

DHCD DBFR SBCO (State Building Codes Office)

600 East Main Street

Suite 300

Richmond, VA 23219

Email Address: Vernon.hodge@dhcd.virginia.gov

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VIRGINIA DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
DIVISION OF BUILDING AND FIRE REGULATION

Code Change Form for the 2012 Code Change Cycle

Code Change Number: _____

Proponent Information

(Check one): Individual Government Entity Company

Name: VBCOA IRC Committee (with DHCD Suggested Revision in Bold)

Proposal Information

Code(s) and Section(s): VCC (IRC)

Proposed Change (including all relevant section numbers, if multiple sections):

Change the definition of "Attic, habitable" in the IRC to read as shown below:

ATTIC, HABITABLE. A finished or unfinished area, not considered a *story*, complying with all of the following requirements:

1. The occupiable floor area is at least 70 square feet (17m²), in accordance with Section R304,
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Habitable attics **greater than 1/3 of the area of the story below** shall not be permitted in dwellings or townhouses that are three stories above grade plane in height.

Supporting Statement (including intent, need, and cost impact of the proposal):

The intent of this proposal is to restore the number of habitable area stories above grade to three, consistent with scope of the IRC. R101.2 'Scope' limits the application of the IRC to one- and two-family dwellings and townhouses "not more than three stories above grade plane in height"...; the current language in the 'Attic, Habitable' definition: "not considered a story" allows for an additional habitable level above the three story limitation, or in practical terms - a fourth story. **However, language is added to permit a habitable attic above the third floor if such attic is not less than 1/3 of the area of the story below.**

Cost impact: There is no cost impact in this change.

Submittal Information

Please submit the proposal to:

DHCD DBFR SBCO (State Building Codes Office)

600 East Main Street

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Richmond, VA 23219

Email Address: Vernon.hodge@dhcd.virginia.gov

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VIRGINIA DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
DIVISION OF BUILDING AND FIRE REGULATION

Code Change Form for the 2012 Code Change Cycle

Code Change Number: _____

Proponent Information

(Check one): Individual Government Entity Company

Name: DHCD Staff

Representing: _____

Proposal Information

Code(s) and Section(s): VCC, IRC Section E3902.2

Proposed Change (including all relevant section numbers, if multiple sections):

Add the following exception to Section E3902.2 of the IRC:

E3902.2 Garage and accessory building receptacles. All 125-volt single-phase, 15- and 20-ampere receptacles installed in garages and grade-level portions of unfinished accessory buildings used for storage or work areas shall have ground-fault circuit-interrupter protection for personnel.

Exceptions:

1. One receptacle in a garage on a dedicated circuit for refrigeration appliances.
2. A single (simplex) receptacle for garage door opening equipment.

Supporting Statement (including intent, need, and cost impact of the proposal):

This proposal is based on discussion at the May 20, 2013 BHCD meeting where it was suggested that the need for GFCI protection is minimal when outlets are used solely for refrigeration appliances in garages or for garage door opening equipment and the exception would prevent nuisance tripping of GFCI devices which can lead to loss of freezer contents or the ability of a garage door opener to operate. This revised exception is based on testimony presented at the September 23rd public hearing. It provides clarity on the wiring methods.

Submittal Information

Date Submitted: June 18, 2013 (Revised September 24, 2013)

The proposal may be submitted by email as an attachment, by fax, by mail, or by hand delivery.

Please submit the proposal to:

DHCD DBFR SBCO (State Building Codes Office)
600 East Main Street
Suite 300
Richmond, VA 23219

Email Address: Vernon.hodge@dhcd.virginia.gov
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