

AGENDA
 CODES AND STANDARDS COMMITTEE
 2009 CODE CHANGE CYCLE – BOOK 2
 June 22, 2009

OPENING STATEMENT

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VIRGINIA DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
Division of Building and Fire Regulation

DEVELOPMENT OF THE 2009 BUILDING AND FIRE REGULATIONS

STAFF RECOMMENDATIONS FOR THE BASE DOCUMENT OF THE
VIRGINIA MANUFACTURED HOME SAFETY REGULATIONS

(Only those provisions with changes are shown)

13 VAC 5-95-10. Definitions.

A. The following words and terms when used in this chapter shall have the following meanings unless the context clearly indicates otherwise:

“Act” or “the Act” means the National Manufactured Housing Construction and Safety Standards Act of 1974, Title VI of the Housing and Community Development Act of 1974 (42 USC § 5401 et seq.).

“Administrator” means the Director of DHCD or his designee.

“DHCD” means the Virginia Department of Housing and Community Development.

“Dealer” means any person engaged in the sale, lease, or distribution of manufactured homes primarily to persons who in good faith purchase or lease a manufactured home for purposes other than resale.

“Defect” means a failure to comply with an applicable federal manufactured home construction and safety standard that renders the manufactured home or any part of the home unfit for the ordinary use of which it was intended, but does not result in an imminent risk of death or severe personal injury to occupants of the affected home.

“Design Approval Primary Inspection Agency” or “DAPIA” means a state agency or private organization that has been accepted by the Secretary, in accordance with the federal regulation, to evaluate and either approve or disapprove manufactured home designs and quality control procedures.

~~“Distributor” means any person engaged in the sale and distribution of manufactured homes for resale.~~

“Federal installation standards” means the federal Model Manufactured Home Installation Standards (24 CFR Part 3285) or any set of state standards that the Secretary has determined provide protection to the residents of manufactured homes that equals or exceeds the protection provided by the installation standards.

“Federal regulation” means the federal Manufactured Home Procedural and Enforcement Regulations, enacted May 13, 1976, under authority granted by § 625 of the Act, and designated as Part 3282, Chapter XX, Title 24 of HUD's regulations (24 CFR Part 3282). (Part 3282 consists of subparts A through L, with sections numbered 3282.1 through 3282.554, and has an effective date of June 15, 1976.)

“HUD” means the United States Department of Housing and Urban Development.

"Imminent safety hazard" means a hazard that presents an imminent and unreasonable risk of death or severe personal injury that may or may not be related to failure to comply with an applicable federal manufactured home construction or safety standard.

“Installation” means completion of work to include but not limited to stabilize, support, anchor, and close up a manufactured home and to join sections of a multi-section manufactured home, when any such work is governed by the federal installation standards or by state installation standards that are certified as part of a qualifying installation program.

“Installer” means the person or entity who is retained to engage in, or who engages in, the business of directing, supervising, controlling, or correcting the initial installation of a manufactured home.

“Label” or “certification label” means the approved form of certification by the manufacturer that, under 24 CFR 3282.362(e)(2)(i) § 3280.11 of the Manufactured Home Procedural and Enforcement Regulations federal standards, is permanently affixed to each transportable section of each manufactured home manufactured for sale to a purchaser in the United States.

“Local code building official” means the officer or other designated authority charged with the administration and enforcement of USBC, or duly authorized representative.

“Manufactured home” means a structure subject to federal regulation, which is transportable in one or more sections; is eight body feet or more in width and 40 body feet or more in length in the traveling mode, or is 320 or more square feet when erected on site; is built on a permanent chassis; is designed to be used as a single-family dwelling, with or without a permanent foundation, when connected to the required utilities; and includes the plumbing, heating, air conditioning, and electrical systems contained in the structure.

“Manufacturer” means any person engaged in manufacturing or assembling manufactured homes, including any person engaged in importing manufactured homes.

“Manufacturer’s installation instructions” means DAPIA-approved instructions provided by the home manufacturer that accompany each new manufactured home and detail the home manufacturer requirements for support and anchoring systems and other work completed at the installation site to comply with the federal installation standards and the federal standards.

“Noncompliance” means a failure of a manufactured home to comply with a federal manufactured home construction or safety standard that does not constitute a defect, serious defect, or imminent safety hazard.

“Purchaser” means the first person purchasing a manufactured home in good faith for purposes other than resale.

“Recreational vehicles” means vehicles which meet all of the following criteria:

1. Built on a single chassis.
2. 400 square feet or less when measured at the largest horizontal projections.
3. Self-propelled or permanently towable by a light duty truck.
4. Designed primarily not for use as a permanent dwelling but as temporary living quarters for recreational, camping, travel or seasonal use.

(Remainder of section unchanged)

13 VAC 5-95-20. Application and enforcement.

A. This chapter shall apply to manufactured homes ~~as defined in 13VAC5-95-10 and 13VAC5-95-20~~.

(Subsections B and C unchanged)

D. DHCD is delegated all lawful authority for the enforcement of the federal standards pertaining to manufactured homes by the administrator according to § 36-85.5 of the Code of Virginia. The Division of Building and Fire Regulation of DHCD is designated as a state administrative agency in the HUD enforcement program, and shall act as an agent of HUD. The administrator is authorized to perform the activities required of an SAA by the HUD enforcement plan including, but not limited to, investigation, inspections, citation of violations, handling of complaints, conducting hearings, supervising remedial actions, monitoring, and making such reports as may be required.

E. All local ~~code~~ building officials are authorized by § 36-85.11 of the Code of Virginia to enforce the provisions of this chapter ~~within the limits of their jurisdiction. Such local code officials shall enforce this chapter, subject to the general oversight of the Division of Building and Fire Regulation and shall not permit the use of any manufactured home containing a serious defect or imminent safety hazard within their jurisdiction. and shall be responsible for and~~ authorized to do the following:

1. Verify through inspection that a manufactured home displays the required HUD label.
2. Determine whether the manufactured home has been damaged in transit to a degree that may make it unsafe. If the manufactured home has been damaged, then the local building official is authorized to require tests for tightness of plumbing systems and gas piping, and electrical short circuits at meter connections.

3. Prevent the use or occupancy of a manufactured home which in the opinion of the local building official contains a serious defect or imminent safety hazard and notify the administrator immediately.

4. Notify the administrator of any apparent violations of this chapter to include defects and noncompliance.

F. Mounting and anchoring In accordance with § 36-99 of the Code of Virginia, all site work associated with the installation of manufactured homes shall be in accordance with the applicable requirements of is subject to the USBC. Also, as set out by the USBC, all administrative requirements for permits, inspections and certificate of occupancy are applicable.

G. Recreational vehicles are not subject to this chapter.

13 VAC 5-95-30. Effect of label.

~~A. In accordance with § 36-85.11 of the Code of Virginia, manufactured homes displaying the certification label as prescribed in the federal standards shall be accepted in all localities as meeting the requirements of the Manufactured Housing Construction and Safety Standards Law (Chapter 4.1 (§ 36-85.2 et seq.) of Title 36 of the Code of Virginia), which shall supersede the building codes of the counties, municipalities and state agencies. In addition, as a requirement of this chapter, local code officials shall carry out the following functions with respect to manufactured homes displaying the HUD label, provided such functions do not involve disassembly of the homes or parts of the homes, change of design, or result in the imposition of more stringent conditions than those required by the federal regulations.~~

~~1. Verify through inspection that the manufactured home has not been damaged in transit to a degree that would render it unsafe. If the manufactured home has been damaged, then the local code official is authorized to require tests for tightness of plumbing systems and gas piping, and electrical short circuits at meter connections.~~

~~2. Verify through inspection that (i) supplemental components required by the manufacturer's installation instructions or this chapter are properly provided, (ii) manufacturer's installation or erection instructions are followed, and (iii) any special conditions or limitations of use stipulated by the manufacturer's installation instructions or the label in accordance with the standards or this chapter are followed.~~

~~B. Local code officials are required by the USBC to enforce applicable requirements of the USBC for utility connections, site preparation, foundations, stoops, decks, porches, alterations and additions to existing manufactured homes, building permits, skirting, certificates of use and occupancy, and all other applicable requirements, except those governing the design and construction of the labeled units. In addition, local code officials shall verify that a manufactured home displays the required HUD label.~~

13 VAC 5-95-40. Report to DHCD.

Whenever any manufactured home is moved from a local jurisdiction before a noted violation has been corrected, the local ~~code~~ building official shall make a prompt report of the

circumstances to the administrator. The report shall include a list of uncorrected violations, all information pertinent to identification and manufacture of the home contained on the label and the data plate, the destination of the home if known, and the name of the party responsible for moving it.

13 VAC 5-95-50. Alterations.

A. No ~~distributor~~ installer, broker or dealer shall perform or cause to be performed on a new manufactured home any alteration affecting one or more requirements set forth in the federal standards, except those alterations approved by the administrator.

B. In handling and approving dealer requests for alterations on a new manufactured home, the administrator may be assisted by local ~~code~~ building officials. The local ~~code~~ building official shall report violations of subsection A of this section and failures to conform to the terms of their approval to the administrator.

C. In accordance with § 36-99 of the Code of Virginia and in accordance with the USBC, alterations, additions and repairs associated with used manufactured homes are regulated by the USBC and not this chapter. The USBC provides for administrative requirements for permits, inspections and certificates of occupancy and allows the use of Appendix E of the International Residential Code, entitled, "Manufactured Housing Used As Dwellings" as an acceptable alternative to the general requirements of the USBC for construction work associated with additions, alterations and repairs to used manufactured homes.

13 VAC 5-95-60. Installations.

~~Distributors or Brokers, dealers installing or installers setting up a new manufactured home shall perform such installation in accordance with the manufacturer's installation instructions or other support and anchoring system approved by the local code official in accordance with the USBC.~~

13 VAC 5-95-70. ~~Prohibited resale.~~ (Repealed.)

~~No distributor or dealer shall offer for resale any manufactured home possessing a serious defect or imminent safety hazard.~~

13 VAC 5-95-80. Lot inspections.

At any time during regular business hours when a manufactured home is located on a dealer's or ~~distributor's~~ broker's lot and offered for sale, the administrator shall have authority to inspect such home for transit damages, seal tampering, violations of the federal standards and the dealer's or ~~distributor's~~ broker's compliance with applicable state and federal laws and regulations. The administrator shall give written notice to the dealer or ~~distributor~~ broker when any home inspected does not comply with the federal standards.

13 VAC 5-95-90. Consumer complaints ~~;~~ on-site inspections.

A. The administrator shall receive all consumer complaints on new manufactured homes reported to DHCD by owners, dealers, ~~distributors~~ brokers, ~~code~~ local building officials, and

other state or federal agencies. The administrator may request such reports to be submitted by letter or on a report form supplied by DHCD or in other format acceptable to the administrator .

B. The administrator may conduct, or cause to be conducted, an on-site inspection of a manufactured home at the request of the owner reporting a complaint with the home or under the following conditions with the permission of the owner of the home:

1. The dealer, ~~distributor~~ broker or manufacturer requests an on-site inspection;
2. The reported complaint indicates extensive and serious noncompliances;
3. Consumer complaints lead the administrator to suspect that a class of homes may be similarly affected; or
4. Review of manufacturer's records, corrective action, and consumer complaint records leads the administrator to suspect secondary or associated noncompliances may also exist in a class of homes.

C. When conducting an on-site inspection of a home involving a consumer complaint, the administrator may request the dealer, ~~distributor~~ installer , broker and manufacturer of the home to have a representative present to coordinate the inspection and investigation of the consumer complaint.

D. After reviewing the complaint report or the on-site inspection of the home involved, the administrator shall, where possible, indicate the cause of any nonconformance and, where possible, indicate the responsibility of the manufacturer, dealer, ~~distributor~~ installer , broker or owner for the noncompliance and any corrective action necessary.

(Subsection E unchanged)

F. The administrator shall assist the owner, dealer, ~~distributor~~ installer , broker and manufacturer in resolving consumer complaints. The administrator shall monitor the manufacturer's performance to assure compliance with Subpart I of the federal regulations for consumer complaint handling and shall take such actions as are necessary to assure compliance of all involved parties with applicable state and federal regulations.

13 VAC 5-95-100. Violation; appeal; penalty.

~~A. Where the administrator finds any violation of the provisions of this chapter, a notice of violation shall be issued. This notice of violation shall order the party responsible to bring the unit into compliance, within a reasonable time. In accordance with § 36-85.12 of the Code of Virginia, it shall be unlawful for any person, firm or corporation, to violate any provisions of this law, the rules and regulations enacted under authority of this law, or the Federal Law and Regulations. Any person, firm or corporation violating any provision of said laws, rules and regulations, or any final order issued there under, shall be liable for civil penalty not to exceed \$1,000 for each violation. Each violation shall constitute a separate violation with respect to each manufactured home or with respect to each failure or refusal to allow or to perform an act required by the legislation or regulations. The maximum civil penalty may not exceed one~~

million dollars for any related series of violations occurring within one year from the date of the first violation. An individual or a director, officer, or agent of a corporation who knowingly and willfully violates Section 610 of the National Manufactured Housing Construction and Safety Standards Act in a manner which threatens the health or safety of any purchaser shall be deemed guilty of a Class 1 misdemeanor and upon conviction fined not more than \$1,000 or imprisoned not more than one year, or both.

~~B. Parties aggrieved by the findings of the notice of violation may appeal to~~ In accordance with § 36-114 of the Code of Virginia, the State Building Code Technical Review Board, which shall act on the appeal in accordance with the provisions of the USBC. The aggrieved party shall file the appeal within 10 days of the receipt of the notice of violation. Unless the notice of violation is revoked by the review board, the aggrieved party must comply with the stipulations of the notice of violation have the power and duty to hear all appeals from decisions arising under the application of this chapter . Appeals concerning application of the federal regulations or federal standards by the administrator shall be in accordance with the federal regulations.

~~C. Any person, firm or corporation violating any provisions of this chapter shall, upon conviction, be considered guilty of a misdemeanor in accordance with § 36-85.12 of the Code of Virginia.~~

VIRGINIA DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
Division of Building and Fire Regulation

DEVELOPMENT OF THE 2009 BUILDING AND FIRE REGULATIONS

STAFF RECOMMENDATIONS FOR THE BASE DOCUMENT OF THE
VIRGINIA INDUSTRIALIZED BUILDING SAFETY REGULATIONS

(Only those provisions with changes are shown)

13 VAC 5-91-10. Definitions.

The following words and terms when used in this chapter shall have the following meaning unless the context clearly indicates otherwise.

“Administrator” means the Director of DHCD or his designee.

“Approved” as applied to a material, device, method of construction, registered building, or as otherwise used in this chapter means approved by the administrator.

“Building official” means the officer or other designated authority charged with the administration and enforcement of the USBC, or duly authorized representative.

“Compliance assurance agency” means an architect or professional engineer registered in Virginia, or an organization, determined by DHCD to be specially qualified by reason of facilities, personnel, experience, and demonstrated reliability, to investigate, test and evaluate industrialized buildings; to list such buildings complying with standards at least equal to this chapter; to provide adequate follow-up services at the point of manufacture to ensure that production units are in full compliance; and to provide a label as evidence of compliance on each ~~registered industrialized building~~ manufactured section or module .

(Remainder of section unchanged)

13 VAC 5-91-40. Inspection and enforcement.

A. The SBCAO is designated as the administrator's representative for the enforcement of this chapter and shall act as the building official for registered industrialized buildings. It shall have authority to make such inspections during reasonable hours at the manufacturing facilities and at building sites where industrialized buildings are being installed. The SBCAO shall have authority to issue inspection reports for correction of violations caused by the manufacturer and to take such other actions as are required to enforce this chapter.

(Remainder of section unchanged)

13 VAC 5-91-50. ~~Factory and field inspections~~ Right of entry and examination by Administrator

~~A. The SBCAO shall conduct such inspections of factories producing industrialized buildings as may be necessary during reasonable hours to determine whether the designated compliance assurance agency is performing its evaluation and compliance assurance functions in a satisfactory manner.~~

~~B. The SBCAO may also make inspections during reasonable hours to determine whether unoccupied industrialized buildings are in compliance with this chapter. Such inspections may include, but are not limited to, industrialized buildings on dealer lots or industrialized buildings that are otherwise offered for sale to the public. Occupied industrialized buildings may be inspected by the SBCAO at the request of the owners or occupants.~~

In accordance with § 36-82 of the Code of Virginia, the administrator shall have the right, at all reasonable hours, to enter into any industrialized building upon permission of any person who has authority or shares the use, access or control over the building, or upon request from local officials having jurisdiction, for examination as to compliance with this chapter.

13 VAC 5-91-60. ~~Violations~~ Notice of violation .

~~Where~~ In accordance with § 36-82 of the Code of Virginia, whenever the administrator finds shall find any violation of the provisions of this chapter, a notice of violation shall be issued. This notice of violation shall order the party responsible he shall order the person responsible therefore to bring the unit building into compliance within a reasonable time , to be fixed in the order . In addition, as a requirement of this chapter, the administrator may request assistance from the building official for enforcement of this section.

13 VAC 5-91-70. Appeals.

~~A. In accordance with § 36-82.1 of the Code of Virginia, appeals from building officials, compliance assurance agencies or manufacturers of industrialized buildings concerning DHCD's application of this chapter shall be heard by the State Review Board established by § 36-108 of the Code of Virginia. The State Review Board shall have the power and duty to render its decision in any such appeal, which decision shall be final if no further appeal is made. In addition, as a requirement of this chapter, appeals shall be submitted to the State Review Board within 21 calendar days of receipt of DHCD's decision. A copy of the decision of DHCD to be appealed shall be submitted with the application for appeal. Failure to submit an application for appeal within the time limit established by this section shall constitute acceptance of DHCD's decision.~~

~~B. Procedures of the State Review Board are in accordance with Article 2 (§ 36-108 et seq.) of Chapter 6 of Title 36 of the Code of Virginia. Decisions of the State Review Board shall be final if no appeal is made therefrom.~~

13 VAC 5-91-100. Duties and responsibilities of building officials in the installation or erection of a registered industrialized building.

~~A. All building officials are authorized by § 36-81 of the Code of Virginia to enforce the provisions of this chapter and shall carry out the following functions provided such functions do not involve disassembly of the registered building or a change in its design or result in the~~

~~imposition of more stringent conditions than those required by the compliance assurance agency or by this chapter. be responsible for and authorized to do the following:~~

1. Verify through inspection that the registered industrialized building displays the required state registration seal and the proper label of the compliance assurance agency ~~and~~ .

2. Verify through inspection that the registered industrialized building has not been damaged in transit to a degree that would render it unsafe. If the building has been damaged, then the building official is authorized to require tests for tightness of plumbing systems and gas piping and tests for damaged or loose wires, or both, in the electrical system short circuits at meter connections .

~~2. Verify through inspection that (i) supplemental components required by the data plate or by the installation instructions are properly provided and properly installed, (ii) the construction work associated with the installation of the building and the instructions from the manufacturer for the installation and erection of the building are followed, and (iii) any special conditions or limitations of use for the building that are stipulated in the manufacturer's instructions or by the data plate and authorized by this chapter are followed.~~

3. Prevent the use or occupancy of a registered industrialized building which in the opinion of the building official contains a serious defect or imminent safety hazard and notify the SBCAO immediately.

4. Notify the SBCAO of any apparent violations of this chapter to include defects and noncompliance.

~~B. Building officials are authorized to require submission of plans and specifications for details of items needed to comprise the finished building that are not included or specified in the manufacturer's installation instructions such as footings, foundations, supporting structures and proper anchorage. They may require such architectural and engineering services as may be necessary to assure that the footings, foundations and supporting structures, proper anchorage and other components necessary to comprise the finished building are designed in accordance with the applicable provisions of this chapter.~~

~~C. When a building official determines that a violation of any provision of this section is present, the responsible person shall be notified and given a reasonable time to correct the violation. If the violation is not corrected, the building official shall institute the appropriate proceedings to require correction or abatement of the violation and may prohibit the occupancy of the building until the violation is corrected. In accordance with 13VAC5-91-60, the administrator shall also have the authority to compel correction of violations of this section and may be contacted by the building official for assistance. In accordance with § 36-99 of the Code of Virginia and the USBC, all site work associated with the installation or erection of an industrialized building is subject to the USBC. In addition, under the USBC, all administrative requirements for permits, inspections and certificates of occupancy are also applicable.~~

13 VAC 5-91-120. Unregistered industrialized buildings.

(Subsection A unchanged)

B. Unregistered industrialized buildings offered for sale in this Commonwealth shall be marked by a warning sign to prospective purchasers that the building is not registered in accordance with this chapter and must be inspected and approved by the building official. The sign shall be of a size and form approved by the administrator and shall be conspicuously posted on the exterior of the unit near the main entrance door. This requirement shall not apply to residential accessory buildings.

C. An existing unregistered industrialized building may be registered in accordance with the following:

(Subdivision 1 unchanged)

2. Where an unregistered building was not approved under an industrialized building program of another state, and the date of manufacture can be verified, the compliance assurance agency shall inspect the building, including any disassembly necessary, to determine whether there is compliance with the construction requirements of this chapter that were in effect on the date of manufacture of the building. When factory plans are available, then disassembly is not required to the extent that the factory plans can be verified to reflect the actual construction of the building. When compliance with the construction requirements of this chapter that were in effect on the date of manufacture of the building is achieved, the compliance assurance agency shall prepare a report documenting compliance, outlining any changes made to the building, and certifying the building in accordance with clauses (i) through (iv) of subdivision 1 of this subsection.

(Remainder of section unchanged)

13 VAC 5-91-160. Use of model codes and standards.

A. Industrialized buildings produced after ~~May 1, 2008~~ (date to be inserted), ~~shall be reasonably safe for the users and shall provide reasonable protection to the public against hazards to life, health and property. Compliance comply~~ with all applicable requirements of the following codes and standards, subject to the specified time limitations, ~~shall be acceptable evidence of compliance with this provision :~~

The following codes and standards may be used until ~~August 1, 2008~~ (date to be inserted) :

1. ICC International Building Code -- 2003 2006 Edition
2. ICC International Plumbing Code -- 2003 2006 Edition
3. ICC International Mechanical Code -- 2003 2006 Edition
4. National Fire Protection Association Standard Number 70 (National Electrical Code) -- 2002 2005 Edition
5. ICC International Residential Code -- 2003 2006 Edition

B. The following documents are adopted and incorporated by reference to be an enforceable part of this chapter:

1. ICC International Building Code -- ~~2006~~ 2009 Edition
2. ICC International Plumbing Code – ~~2006~~ 2009 Edition
3. ICC International Mechanical Code – ~~2006~~ 2009 Edition
4. National Electrical Code -- ~~2005~~ 2008 Edition
5. ICC International Residential Code – ~~2006~~ 2009 Edition

The codes and standards referenced above may be procured from:

International Code Council, Inc.
500 New Jersey Avenue, NW, 6th Floor
Washington, DC 20001-2070

13 VAC 5-91-200. Information required by the administrator.

All of the following information and criteria will be considered by the administrator in designating compliance assurance agencies:

(Subdivisions 1 and 2 unchanged)

3. Description of qualifications of personnel and their responsibilities, including an assurance that personnel involved in system analysis, design and plans review, compliance assurance inspections, and their supervisors comply with the requirements of the American Society for Testing and Material (ASTM) Standard Number ~~E541-01~~ E541-08 – Standard Specification for Agencies Engaged in System Analysis and Compliance Assurance for Manufactured Building or shall obtain ICC or DHCD certifications in the appropriate subject area within 18 months of employment and maintain such certifications in an active status .

(Subdivisions 4-8 unchanged)

The ASTM Standard Number ~~E541-01~~ E541-08 may be procured from:

American Society for Testing and Materials
100 Barr Harbor Drive
West Conshohocken, PA 19428-2959

13 VAC 5-91-210. Compliance assurance agency certification label.

Every manufactured section or module of a registered industrialized building shall be marked with a label supplied by the compliance assurance agency that includes the name and address of the compliance assurance agency and the certification label number.

13 VAC 5-91-220. Mounting of label.

To the extent practicable, the label shall be installed so that it cannot be removed without destroying it. The label shall be applied in the vicinity of the electrical distribution panel or in another location that is readily accessible for inspection. When a building is comprised of more than one section or module, the required ~~label~~ labels may be furnished as a single label for the entire placed in one location in the completed building ~~provided each section or module is marked by the compliance assurance agency in a clearly identifiable manner provided with or on the label .~~

13 VAC 5-91-245. Manufacturer's data plate.

A. All of the following information shall be placed on a permanent manufacturer's data plate in the vicinity of the electrical distribution panel or in some other location that is readily accessible for inspection. The compliance assurance agency shall approve the form and location of the data plate and shall ensure that the data plate is complete:

(Subdivisions 1-6 unchanged)

~~7.~~ 7. Design live roof load, design floor live load and ~~,~~ design wind load speed and design ground snow load .

~~8. Seismic design zone number.~~

~~9. Thermal transmittance values or thermal resistance ("R") values.~~

~~10.~~ 9. Special conditions or limitations concerning the use of the building under the codes and standards applicable to the building; however, a list of such conditions or limitations that are furnished separately with the building shall satisfy this requirement.

~~11.~~ 10. Special instructions for handling, installation and erection of the building,; however, a list of such instructions that are furnished separately with the building shall satisfy this requirement.

~~12.~~ 11. Designation of electrical service ratings, directions for water and drain connections and, where applicable, identification of permissible type of gas for appliances.

~~13.~~ 12. Name of manufacturer and model designation of major factory installed appliances.

(Remainder of section unchanged)

13 VAC 5-91-260. Registration seal for industrialized buildings.

A. Registered industrialized buildings shall be marked with ~~an~~ approved registration seal seals issued by the SBCAO. The ~~seal~~ seals shall be applied by the manufacturer to a registered industrialized building intended for sale or use in Virginia prior to the shipment of the building from the place of manufacture.

B. Registered industrialized buildings shall bear a one registration seal ~~for each dwelling unit in residential occupancies. For nonresidential occupancies, a registration seal is required for each registered~~ on each manufactured section or module, or, as an alternative, the registration seal for each manufactured section or module may be placed in one location in the completed building.

C. Approved registration seals may be purchased from the SBCAO in advance of use. The fee for each registration seal shall be ~~\$75~~ \$50 . Fees shall be submitted by checks shall be made payable to "Treasurer of Virginia - " or shall be submitted by electronic means. Payment for the seals must be received by the SBCAO before the seals can be sent to the user.

(Remainder of section unchanged)

State Building Code Administrative Office
Division of Building and Fire Regulation
Virginia Department of Housing and Community Development
May 2009

**Staff Report to the Codes and Standards Committee of the Board of Housing and
Community Development**

Code Change for Testing the Electrical System in Industrialized Buildings Damaged in Transit

Discussion:

At the Codes and Standards Committee May 18, 2009 meeting in reviewing staff suggested changes to the Industrialized Building Safety Regulations (IBSR), staff was requested to consider clearer language for the testing of electrical systems of industrialized buildings damaged in transit.

The existing and long-standing language in the IBSR was: “require tests for damaged or loose wires, or both, in the electrical system.” The staff suggested new language was: “require tests for electrical short circuits at meter connections.”

The staff suggested new language was actually taken from the Manufactured Home Safety Regulations (MHSR), in § 13 VAC 5-95-30. The change to the IBSR would then make both regulations consistent.

After further research, staff has determined that the appropriate language for damaged manufactured homes, taken from the HUD’s Manufactured Home Construction and Safety Standards is: “require an operational test to ensure that all luminaries and receptacles are operable.”

Recommendation:

Staff recommends that both the IBSR and the MHSR be changed to use the HUD language.

If approved, both regulations would read:

1. Verify through inspection ... is authorized to require tests for tightness of plumbing systems and gas piping and an operational test to ensure that all luminaries and receptacles are operable.

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

Code Change Form for the 2009 Code Change Cycle

Code Change Number: _____

Proponent Information

(Check one): Individual Government Entity Company

Name: Staff

Representing: Division of Building and Fire Regulations

Mailing Address: 501 No. Second St., Richmond, VA

Email Address: taso@dhcd.virginia.gov

Telephone Number: (804) 371-7150

Proposal Information

Code(s) and Section(s): 13VAC 5-91 Industrialized Building Safety Regulations, 13 VAC 5-91-20. Application and compliance.

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

A. ~~This chapter shall apply to industrialized buildings. The following provisions are in~~ In accordance with § 36-81 of the Code of Virginia, ~~Registered~~ registered industrialized buildings shall be acceptable in all localities as meeting the requirements of the Industrialized Building Safety Law (Chapter 4 (§ 36-70 et seq.) of Title 36 of the Code of Virginia), which shall supersede the building codes and regulations of the counties, municipalities and state agencies. Local requirements affecting industrialized buildings, including zoning, utility connections, preparation of the site and maintenance of the unit shall remain in full force and effect. All building officials are authorized to and shall enforce the provisions of ~~this law, and the rules and regulations made in pursuance thereof~~ the Industrialized Building Safety Law (Chapter 4 (§ 36-70 et seq.) of Title 36 of the Code of Virginia) and this chapter.

B. ~~In accordance with § 36-78 of the Code of Virginia, No~~ no person, firm or corporation shall offer for sale or rental, or sell or rent, any industrialized building subject to any provisions of this chapter ~~if the industrialized building is not in compliance with any such provisions~~ unless it conforms with the applicable provisions of this chapter .

C. ~~In accordance with subsection A of this section, the provisions of the USBC shall not be applicable to the design and construction of registered industrialized buildings. However, the provisions of this chapter do not prohibit the administrative provisions of the USBC for permits, inspections, certificates of occupancy and other matters from being applicable to the extent they are not addressed by the requirements of this chapter. Additionally, the provisions of this chapter do not prohibit alterations and additions to existing industrialized buildings from being regulated by the USBC or building officials from requiring the submission of plans and specifications for the model involved in electronic or other available format to aid in the evaluation of the proposed addition or alteration.~~

D. ~~§ 36-78 of the Code of Virginia, Industrialized buildings~~ any industrialized building constructed ~~prior to~~ before January 1, 1972, shall remain subject to the ordinances, laws or regulations in effect at the time such industrialized building was constructed. ~~Additionally, the provisions of this chapter do not prohibit pertinent provisions of the USBC from being applicable when such industrialized buildings are relocated.~~ Additionally, as a requirement of this chapter, any industrialized building bearing the label of a compliance assurance agency shall remain subject to the provisions of this chapter which were effective when such building was constructed, regardless of whether the building has been relocated.

D. In accordance with § 36-99 of the Code of Virginia and in accordance with the USBC, the installation or erection of industrialized buildings and alterations, additions or repairs to industrialized buildings are regulated by the USBC and not this chapter. The USBC provides for administrative requirements for permits, inspections and certificates of occupancy for such work.

E. Shipping containers and portable on demand storage (PODS) containers are not subject to this chapter.

Supporting Statement (including intent, need, and impact of the proposal):
Update the language to make regulation easier to read and understand. In addition regulation was updated to reference newest I-codes

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 TASO (Technical Assistance and Services Office)
The Jackson Center
501 N. 2nd Street
Richmond, VA 23219-1321

Email Address: taso@dhcd.virginia.gov
Fax Number: (804) 371-7092
Phone Numbers: (804) 371-7140 or (804) 371-7150



VIRGINIA DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
Division of Building and Fire Regulation

DEVELOPMENT OF THE 2009 BUILDING AND FIRE REGULATIONS

STAFF RECOMMENDATIONS FOR THE BASE DOCUMENT OF THE
VIRGINIA AMUSEMENT DEVICE REGULATIONS

(Only those provisions with changes are shown)

13 VAC 5-31-20. Definitions.

A. The following words and terms when used in this chapter shall have the following meanings unless the context clearly indicates otherwise:

“Amusement device” means (i) a device or structure open to the public by which persons are conveyed or moved in an unusual manner for diversion and (ii) passenger tramways.

“Bungee cord” means the elastic rope to which the jumper is attached which lengthens and shortens to produce a bouncing action.

“Carabineer” means a shaped metal device with a gate used to connect sections of a bungee cord, jump rigging, equipment, or safety gear.

“DHCD” means the Virginia Department of Housing and Community Development.

“Kiddie ride” means an amusement device where the passenger or patron height is limited to 54 inches or less, the design capacity of passengers or patrons is 12 or less and the assembly time for the device is two hours or less.

(Remainder of section unchanged)

13 VAC 5-31-50. Certification of amusement device inspectors.

A. Any person, including local building department personnel, inspecting an amusement device relative to a certificate of inspection shall possess a valid certificate of competence certification as an amusement device inspector from the Virginia Board of Housing and Community Development in accordance with the Virginia Certification Standards (13 VAC 5-21) .

B. Local building department personnel enforcing this chapter and private inspectors shall attend 16 hours every two years of continuing education and periodic maintenance training courses approved or required as designated by DHCD. Additional continuing education hours shall not be required if more than one certificate is held. In addition to the periodic certification maintenance training required above, local building department personnel and private inspectors shall attend 16 hours every two years of continuing education as approved by DHCD. If local building department personnel or private inspectors possess more than one BHCD certificate, the 16 hours shall satisfy the continuing education requirement for all BHCD certificates.

13 VAC 5-31-75. Local building department.

(Subsections A and B unchanged)

C. A permit application shall be made to the local building department at least five days before the date in which the applicant intends to operate an amusement device. The application shall include the name of the owner, operator or other person assuming responsibility for the device or devices, a general description of the device or devices including any serial or identification numbers available, the location of the property on which the device or devices will be operated and the length of time of operation. The permit application shall indicate whether a private inspector will be utilized. If a private inspector is not utilized, the applicant shall give reasonable notice when an inspection is sought and may stipulate the day such inspection is requested provided it is during the normal operating hours of the local building department. In addition to the information required on the permit application, the applicant shall provide proof of liability insurance of an amount not less than \$100,000 per person and \$1,000,000 in the aggregate for each amusement device insuring the owner or operator against liability for injury suffered by persons riding the amusement device or by persons in, on, under or near the amusement device; per occurrence or proof of equivalent financial responsibility. The local building department shall be notified of any change in the liability insurance or financial responsibility during the period covered by the permit.

D. Notwithstanding the provisions of subsection C of this section, a permit application is not required for a kiddie ride in which the passenger height is 54 inches or less, the design capacity is for 12 passengers or less and that can be assembled in two hours or less, provided the kiddie ride has an unexpired certificate of inspection issued by any local building department in this Commonwealth. In such cases, the local building department shall be notified prior to the operation of the kiddie ride and the information required on a permit application as listed in subsection C of this section shall be provided to the local building department.

(Subsection E unchanged)

F. In addition to obtaining a certificate of inspection in conjunction with a permit application for amusement devices permanently fixed to a site, a new certificate of inspection shall also be obtained prior to the operation of an amusement device following a major modification, prior to each seasonal operation of a device, at least once during the operating season and prior to resuming the operation of a device following an order from a local building department to cease operation. This requirement shall not apply to kiddie rides meeting the conditions outlined in subsection D of this section.

G. For amusement devices manufactured prior to 1978, the owner or operator shall have the information required by §§ 2.1 through 2.6 of ASTM F628 ~~F628~~ F698 available at the time of inspection. In addition, the operator of any amusement device shall be responsible for obtaining all manufacturer's notifications, service bulletins and safety alerts issued pursuant to ASTM F853 and the operator shall comply with all recommendations and requirements set out in those documents. A copy of all such documents shall be made available during an inspection.

VIRGINIA DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
Division of Building and Fire Regulation

DEVELOPMENT OF THE 2009 BUILDING AND FIRE REGULATIONS

STAFF RECOMMENDATIONS FOR THE BASE DOCUMENT OF THE
VIRGINIA CERTIFICATION STANDARDS

(Only those provisions with changes are shown)

13 VAC 5-21-51. Issuance of certificates.

A. Certificates will be issued when an applicant has complied with the applicable requirements of this chapter. Certificate holders will be classified as active or inactive. An active certificate holder is a person who is certified and who has attended all periodic maintenance training courses designated by the department and completed the required continuing education subsequent to becoming certified. An inactive certificate holder is a person who is certified but who has not attended all such periodic maintenance training courses or completed the required continuing education subsequent to becoming certified . An inactive certificate holder may request reinstatement as an active certificate holder after completing make-up training courses authorized by the department. Provisional certificates may also be issued in accordance with subsection C of this section.

B. All certificates issued since June 1978 are considered to be valid unless revoked or suspended, except that provisional certificates shall remain valid as set out under subsection C of this section.

C. A provisional certificate may be issued to (i) a person who has been directed by the department to obtain a certificate; (ii) an applicant requesting a certificate under the alternative examination or training provisions of 13VAC5-21-45; or (iii) an applicant when the required training has not been provided or offered.

Such a provisional certificate may be issued when the applicant has (i) provided the written endorsement or documentation required by 13VAC5-21-31, (ii) satisfactorily completed the code academy core module, and (iii) completed any training through the code academy or through other providers determined to warrant the issuance of the provisional certificate.

The provisional certificate is valid for a period of one year after the date of issuance and shall only be issued once to any individual, except that a provisional certificate shall remain valid when the required training has not been provided or offered.

VIRGINIA DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
Division of Building and Fire Regulation

DEVELOPMENT OF THE 2009 BUILDING AND FIRE REGULATIONS

STAFF RECOMMENDATIONS FOR THE BASE DOCUMENT OF THE
VIRGINIA STATEWIDE FIRE PREVENTION CODE
(Only those provisions with changes are shown)

13 VAC 5-51-21. Section 102.0. Applicability.

(Subsections A-D unchanged)

E. 102.4. Referenced codes and standards: The codes and standards referenced in the IFC shall be those listed in Chapter 45 ~~47~~ and considered part of the requirements of the SFPC to the prescribed extent of each such reference. Where differences occur between the provisions of this code and the referenced standards, the provisions of this code shall apply.

(Remainder of section unchanged)

13 VAC 5-51-31. Section 103.0. Incorporation by reference.

A. 103.1. General: The following document is adopted and incorporated by reference to be an enforceable part of the SFPC:

The International Fire Code -- ~~2006~~ 2009 Edition, hereinafter referred to as "IFC," published by the International Code Council, Inc., 500 New Jersey Avenue, NW, 6th Floor, Washington, DC 20001-2070, 1-888 422-7233.

(Remainder of section unchanged)

13 VAC 5-51-130. IFC Section 202.0. Definitions.

(No change to subsections A and B)

C. Change the following definitions to read:

~~Canopy: A structure or architectural projection of rigid construction over which a covering is attached that provides weather protection, identity or decoration and may be structurally independent or supported by attachment to a building on one end by not less than one stanchion on the outer end.~~

(No change to remainder of section)

13 VAC 5-51-131. IFC Chapter 3. Precautions Against Fire.

(No change to subsection A)

~~B. Change Section 304.3.2 to read:~~

~~304.3.2. Capacity exceeding 5.88 cubic feet. Containers with a capacity exceeding 5.88 cubic feet (44 gallons) (0.17 m³) shall be provided with lids. Containers and lids shall be constructed of noncombustible materials or approved combustible materials.~~

(No change to remainder of section)

13 VAC 5-51-132. IFC Chapter 4. Emergency Planning and Preparedness.

(No change to subsection A)

B. Add item 14 to Section 404.2 to read:

~~14.~~ 15. SRCF.

(No change to remainder of section)

13 VAC 5-51-133. IFC Chapter 5. Fire Service Features.

(No change to subsections A and B)

C. Change Section ~~508.5.1~~ 507.5.1 to read:

~~508.5.1.~~ 507.5.1. Where required. Fire hydrant systems shall be located and installed as directed by the fire department. Fire hydrant systems shall conform to the written standards of the jurisdiction and the fire department.

(No change to subsection D)

E. Add Change Section ~~511~~ 510 to read:

Section ~~511.~~ 510.

Maintenance of In-Building Emergency Communication Equipment.

~~511.1.~~ 510.1. General. In-building emergency communication equipment shall be maintained in accordance with USBC and the provisions of this section.

~~511.2.~~ 510.2. Additional in-building emergency communications installations. If it is determined by the locality that increased amplification of their emergency communication system is needed, the building owner shall allow the locality access as well as provide appropriate space within the building to install and maintain necessary additional communication equipment by the locality. If the building owner denies the locality access or appropriate space, or both, the building owner shall be responsible for the installation and maintenance of these additional systems.

~~511.3.~~ 510.3. Field tests. After providing reasonable notice to the owner or their representative, the fire official, police chief, or their agents shall have the right during normal business hours, or other mutually agreed upon time, to enter onto the property to conduct field tests to verify that the required level of radio coverage is present at no cost to the owner.

13 VAC 5-51-135. IFC Chapter 9. Fire Protection Systems.

(No change to subsections A-G)

H. Change Section ~~907.20.2~~ 907.9.2 to read:

~~907.20.2.~~ 907.9.2 Testing. Testing shall be performed in accordance with the schedules in Chapter 10 of NFPA 72 or more frequently where required by the fire code official. Where automatic testing is performed at least weekly by a remotely monitored fire alarm control unit specifically listed for the application, the manual testing frequency shall be permitted to be extended to annual. In Group R-1 occupancies, battery-powered single station smoke detectors shall be tested and inspected at one-month intervals.

Exception: Devices or equipment that are inaccessible for safety considerations shall be tested during scheduled shutdowns where approved by the fire code official, but not less than every 18 months.

13 VAC 5-51-143. IFC Chapter 24. ~~Tents, Canopies and Other Membrane Structures.~~
(Repealed.)

A. ~~Change the title of Chapter 24 to read "Tents and Membrane Structures."~~

B. ~~Change Section 2401.1 to read:~~

~~2401.1. Scope. Tents and membrane structures shall comply with this chapter. The provisions of Section 2403 are applicable only to temporary membrane structures. The provisions of Section 2404 are applicable to temporary and permanent membrane structures.~~

C. ~~Delete the definition of the term "Canopy" in Section 2402.1 and change the definition of the term "Tent" in Section 2402.1 to read:~~

~~Tent: Any structure, enclosure or shelter, other than a canopy, with or without sidewalls or drops constructed of fabric or pliable material supported by any manner except by air or the contents it protects.~~

D. ~~Change the title of Section 2403 to read "Temporary Tents and Membrane Structures."~~

E. ~~Change Section 2403.1 to read:~~

~~2403.1. General. All temporary tents and membrane structures shall comply with this section.~~

F. ~~Change Section 2403.2 to read:~~

~~2403.2. Approval required. Tents and membrane structures having an area in excess of 200 square feet (19 m²) shall not be erected, operated or maintained for any purpose without first obtaining a permit and approval from the fire code official.~~

~~Exception: Tents used exclusively for recreational camping purposes.~~

~~G. Change Section 2403.5 to read:~~

~~2403.5. Use period. Temporary tents and air supported, air inflated or tensioned membrane structures shall not be erected for a period of more than 180 days within a 12-month period on a single premises.~~

~~H. Change Section 2403.6 to read:~~

~~2403.6. Construction documents. A detailed site and floor plan for tents or membrane structures with an occupant load of 50 or more shall be provided with each application for approval. The tent or membrane structure floor plan shall indicate details of the means of egress facilities, seating capacity, arrangement of the seating and location and type of heating and electrical equipment.~~

~~I. Change Sections 2403.8, 2403.8.2 and 2403.8.5 to read:~~

~~2403.8. Access, location and parking. Access location and parking for temporary tents and membrane structures shall be in accordance with this section.~~

~~2403.8.2. Location. Tents or membrane structures shall not be located within 20 feet (6096 mm) of lot lines, buildings, other tents or membrane structures, parked vehicles or internal combustion engines. For the purpose of determining required distances, support ropes and guy wires shall be considered as part of the temporary membrane structure or tent.~~

~~Exceptions:~~

~~1. Separation distance between membrane structures and tents not used for cooking, is not required when the aggregate floor area does not exceed 15,000 square feet (1394 m²).~~

~~2. Membrane structures or tents need not be separated from buildings when all of the following conditions are met:~~

~~2.1. The aggregate floor area of the membrane structure or tent shall not exceed 10,000 square feet (929 m²).~~

~~2.2. The aggregate floor area of the building and membrane structure or tent shall not exceed the allowable floor area including increases as indicated in the International Building Code.~~

~~2.3. Required means of egress provisions are provided for both the building and the membrane structure or tent, including travel distances.~~

~~2.4. Fire apparatus access roads are provided in accordance with Section 503.~~

2403.8.5. Fire break. An unobstructed fire break passageway or fire road not less than 12 feet (3658 mm) wide and free from guy ropes or other obstructions shall be maintained on all sides of all tents and membrane structures unless otherwise approved by the fire code official.

J. Change Section 2403.9 to read:

2403.9. Anchorage required. Tents or membrane structures and their appurtenances shall be adequately roped, braced and anchored to withstand the elements of weather and prevent against collapsing. Documentation of structural stability shall be furnished to the fire code official on request.

K. Change Section 2403.11 to read:

2403.11. Seating arrangements. Seating in tents or membrane structures shall be in accordance with Chapter 10.

L. Change Sections 2403.12, 2403.12.1, 2403.12.2 and Table 2403.2 to read:

2403.12. Means of egress. Means of egress for temporary tents and membrane structures shall be in accordance with Sections 2403.12.1 through 2403.12.8.

2403.12.1. Distribution. Exits shall be spaced at approximately equal intervals around the perimeter of the tent or membrane structure, and shall be located such that all points are 100 feet (30 480 mm) or less from an exit.

2403.12.2. Number. Tents or membrane structures or a usable portion thereof shall have at least one exit and not less than the number of exits required by Table 2403.12.2. The total width of means of egress in inches (mm) shall not be less than the total occupant load served by a means of egress multiplied by 0.2 inches (5 mm) per person.

Table 2403.12.2. Minimum Number of Means of Egress and Means of Egress Widths from Temporary Membrane Structures and Tents.			
Occupant Load	Minimum Number of Means of Egress	Minimum Width of Each Means of Egress (inches)	Minimum Width of Each Means of Egress (inches)
		Tent	Membrane Structure
10 to 199	2	72	36
200 to 499	3	72	72
500 to 999	4	96	72
1,000 to 1,999	5	120	96
2,000 to 2,999	6	120	96
Over 3,000 ^a	7	120	96

For SI: 1 inch = 25.4 mm
 a When the occupant load exceeds 3,000, the total width of means of egress (in inches) shall not be less than the total occupant load multiplied by 0.2 inches per person.

M. Change the title of Section 2404 to read "Temporary and Permanent Tents and Membrane Structures."

N. Change Section 2404.1 to read:

~~2404.1. General. All tents and membrane structures, both temporary and permanent, shall be in accordance with this section. Permanent tents and membrane structures shall also comply with the International Building Code.~~

O. Change Section 2404.2 to read:

~~2404.2. Flame propagation performance treatment. Before a permit is granted, the owner or agent shall file with the fire code official a certificate executed by an approved testing laboratory certifying that the tents and membrane structures and their appurtenances, sidewalls, drops and tarpaulins, floor coverings, bunting and combustible decorative materials and effects, including sawdust when used on floors or passageways, shall be composed of material meeting the flame propagation performance criteria of NFPA 701 or shall be treated with a flame retardant in an approved manner and meet the flame propagation performance criteria of NFPA 701, and that such flame propagation performance criteria are effective for the period specified by the permit.~~

P. Change Section 2404.3 to read:

~~2404.3. Label. Membrane structures or tents shall have a permanently affixed label bearing the identification of size and fabric or material type.~~

Q. Change Section 2404.4 to read:

~~2404.4. Certification. An affidavit or affirmation shall be submitted to the fire code official and a copy retained on the premises on which the tent or air supported structure is located. The affidavit shall attest to the following information relative to the flame propagation performance criteria of the fabric:~~

- ~~1. Names and address of the owners of the tent or air supported structure.~~
- ~~2. Date the fabric was last treated with flame retardant solution.~~
- ~~3. Trade name or kind of chemical used in treatment.~~
- ~~4. Name of person or firm treating the material.~~
- ~~5. Name of testing agency and test standard by which the fabric was tested.~~

R. Change Section 2404.5 to read:

~~2404.5. Combustible materials. Hay, straw, shavings or similar combustible materials shall not be located within any tent or membrane structure containing an assembly occupancy, except the materials necessary for the daily feeding and care of animals. Sawdust and shavings utilized for a~~

~~public performance or exhibit shall not be prohibited provided the sawdust and shavings are kept damp. Combustible materials shall not be permitted under stands or seats at any time. The areas within and adjacent to the tent or air-supported structure shall be maintained clear of all combustible materials or vegetation that could create a fire hazard within 20 feet (6096 mm) of the structure. Combustible trash shall be removed at least once a day from the structure during the period the structure is occupied by the public.~~

~~S. Change Section 2404.6 to read:~~

~~2404.6. Smoking. Smoking shall not be permitted in tents or membrane structures. Approved "No Smoking" signs shall be conspicuously posted in accordance with Section 310.~~

~~T. Change Section 2404.7 to read:~~

~~2404.7. Open or exposed flame. Open flame or other devices emitting flame, fire or heat or any flammable or combustible liquids, gas, charcoal or other cooking device or any other unapproved devices shall not be permitted inside or located within 20 feet (6096 mm) of the tent or membrane structures while open to the public unless approved by the fire code official.~~

~~U. Change Section 2404.8 to read:~~

~~2404.8. Fireworks. Fireworks shall not be used within 100 feet (30 480 mm) of tents or membrane structures.~~

~~V. Change Section 2404.10 to read:~~

~~2404.10. Safety film. Motion pictures shall not be displayed in tents or membrane structures unless the motion picture film is safety film.~~

~~W. Change Sections 2404.15.2, 2404.15.5 and 2404.15.6 to read:~~

~~2404.15.2. Venting. Gas, liquid and solid fuel burning equipment designed to be vented shall be vented to the outside air as specified in the International Fuel Gas Code and the International Mechanical Code. Such vents shall be equipped with approved spark arresters when required. Where vents or flues are used, all portions of the tent or membrane structure shall be not less than 12 inches (305 mm) from the flue or vent.~~

~~2404.15.5. Cooking tents. Tents where cooking is performed shall be separated from other tents or membrane structures by a minimum of 20 feet (6096 mm).~~

~~2404.15.6. Outdoor cooking. Outdoor cooking that produces sparks or grease-laden vapors shall not be performed within 20 feet (6096 mm) of a tent or membrane structure.~~

~~X. Change Sections 2404.16.2 and 2404.16.3 to read:~~

~~2404.16.2. Location of containers. LP gas containers shall be located outside. Safety release valves shall be pointed away from the tent or membrane structure.~~

~~2404.16.3. Protection and security. Portable LP-gas containers, piping, valves and fittings which are located outside and are being used to fuel equipment inside a tent or membrane structure shall be adequately protected to prevent tampering, damage by vehicles or other hazards and shall be located in an approved location. Portable LP-gas containers shall be securely fastened in place to prevent unauthorized movement.~~

~~Y. Change Sections 2404.17.1, 2404.17.2 and 2404.17.3 to read:~~

~~2404.17.1. Use. Flammable liquid fueled equipment shall not be used in tents or membrane structures.~~

~~2404.17.2. Flammable and combustible liquid storage. Flammable and combustible liquids shall be stored outside in an approved manner not less than 50 feet (15 240 mm) from tents or membrane structures. Storage shall be in accordance with Chapter 34.~~

~~2404.17.3. Refueling. Refueling shall be performed in an approved location not less than 20 feet (6096 mm) from tents or membrane structures.~~

~~Z. Change Sections 2404.18, 2404.18.2 and 2404.18.5 to read:~~

~~2404.18. Display of motor vehicles. Liquid and gas fueled vehicles and equipment used for display within tents or membrane structures shall be in accordance with Sections 2404.18.1 through 2404.18.5.3.~~

~~2404.18.2. Fuel systems. Vehicles or equipment shall not be fueled or defueled within the tent or membrane structure.~~

~~2404.18.5. Competitions and demonstrations. Liquid and gas fueled vehicles and equipment used for competition or demonstration within a tent or membrane structure shall comply with Sections 2404.18.5.1 through 2404.18.5.3.~~

~~AA. Change Section 2404.19 to read:~~

~~2404.19. Separation of generators. Generators and other internal combustion power sources shall be separated from tents or membrane structures by a minimum of 20 feet (6096 mm) and shall be isolated from contact with the public by fencing, enclosure or other approved means.~~

~~BB. Change Section 2404.20 to read:~~

~~2404.20. Standby personnel. When, in the opinion of the fire code official, it is essential for public safety in a tent or membrane structure used as a place of assembly or any other use where people congregate, because of the number of persons, or the nature of the performance, exhibition, display, contest or activity, the owner, agent or lessee shall employ one or more qualified persons, as required and approved, to remain on duty during the times such places are open to the public, or when such activity is being conducted.~~

~~Before each performance or the start of such activity, standby personnel shall keep diligent watch for fires during the time such place is open to the public or such activity is being~~

~~conducted and take prompt measures for extinguishment of fires that occur and assist in the evacuation of the public from the structure.~~

~~There shall be trained crowd managers or crowd manager supervisors at a ratio of one crowd manager/supervisor for every 250 occupants, as approved.~~

CC. Change Section 2404.21 to read:

~~2404.21. Vegetation removal. Combustible vegetation shall be removed from the area occupied by a tent or membrane structure, and from areas within 30 feet (9144 mm) of such structures.~~

DD. Change Section 2404.22 to read:

~~2404.22. Waste material. The floor surface inside tents or membrane structures and the grounds outside and within a 30-foot (9144 mm) perimeter shall be kept clear of combustible waste. Such waste shall be stored in approved containers until removed from the premises.~~

13 VAC 5-51-145. IFC Chapter 27. Hazardous Materials - General Provisions.

A. Change Add the following language to the end of Section 2701.5.1 to read:

~~2701.5.1. Hazardous Materials Management Plan. Where required by the fire code official, each application for a permit shall include a Hazardous Materials Management Plan (HMMP). The HMMP shall be maintained onsite for use by emergency responders, and shall be updated not less than annually. The HMMP shall include a facility site plan designating the following:~~

- ~~1. Storage and use areas.~~
- ~~2. Maximum amount of each material stored or used in each area.~~
- ~~3. Range of container sizes.~~
- ~~4. Locations of emergency isolation and mitigation valves and devices.~~
- ~~5. Product conveying piping containing liquids or gases, other than utility-owned fuel gas lines and low-pressure fuel gas lines.~~
- ~~6. On and off positions of valves for valves that are of the self-indicating type.~~
- ~~7. Storage plan showing the intended storage arrangement, including the location and dimensions of aisles.~~
- ~~8. The location and type of emergency equipment. The plans shall be legible and drawn approximately to scale. Separate distribution systems are allowed to be shown on separate pages.~~

B. Change Add the following language to the end of Section 2701.5.2 to read:

~~2701.5.2. Hazardous Materials Inventory Statement (HMIS). Where required by the fire code official, an application for a permit shall include an HMIS, such as SARA (Superfund Amendments and Reauthorization Act of 1986) Title III, Tier II Report, or other approved statement. The HMIS shall be maintained onsite or readily available through another means where approved by the fire code official for use by temporary responders, and shall be updated not less than annually. The HMIS shall include the following information:~~

- ~~1. Manufacturer's name.~~
- ~~2. Chemical name, trade names, hazardous ingredients.~~
- ~~3. Hazard classification.~~
- ~~4. MSDS or equivalent.~~
- ~~5. United Nations (UN), North America (NA) or the Chemical Abstract Service (CAS) identification number.~~
- ~~6. Maximum quantity stored or used on site at one time.~~
- ~~7. Storage conditions related to the storage type, temperature and pressure.~~

(Remainder of section unchanged)

13 VAC 5-51-150. IFC Chapter 33. Explosives and Fireworks.

(No change to subsections A-S)

~~T. Delete Section 3308.11.~~

13VAC5-51-155. IFC Chapter ~~45~~ 47 . Referenced Standards.

Change the referenced standards as follows (standards not shown remain the same):

Standard reference number	Title	Referenced in code section number
CGA C-6 (2001)	Standards for Visual Inspection of Steel Compressed Gas Cylinders	3806.4
NFPA 10-07	Portable Fire Extinguishers	Table 901.6.1, 906.2, 906.3, Table 906.3(1), Table 906.3(2), 2106.3
NFPA 13-07	Installation of Sprinkler Systems	Table 704.1, 903.3.1.1, 903.3.2, 903.3.5.1.1, 903.3.5.2, 904.11, 905.3.4, 907.9, 2301.1, 2304.2, Table 2306.2, 2306.9, 2307.2, 2307.2.1, 2308.2.2, 2308.2.2.1,

		2310.1, 2501.1, 2804.1, 2806.5.7, 3404.3.3.9, Table 3404.3.6.3(7), 3404.3.7.5.1, 3404.3.8.4
NFPA 13D-07	Installation of Sprinkler Systems in One and Two-Family Dwellings and Manufactured Homes	903.3.1.3, 903.3.5.1.1
NFPA 13R-07	Installation of Sprinkler Systems in Residential Occupancies up to and Including Four Stories in Height	903.3.1.2, 903.3.5.1.1, 903.3.5.1.2, 903.4
NFPA 14-07	Installation of Standpipe and Hose Systems	905.2, 905.3.4, 905.4.2, 905.8
NFPA 20-07	Installation of Stationary Pumps for Fire Protection	913.1, 913.2, 913.5.1
NFPA 24-07	Installation of Private Fire Service Mains and their Appurtenances	508.2.1, 1909.5
NFPA 25-08	Inspection, Testing and Maintenance of Water-based Fire Protection Systems	508.5.3, Table 901.6.1, 904.7.1, 912.6, 913.5
NFPA 30B-07	Manufacture and Storage of Aerosol Products	2801.1, 2803.1, 2804.1, Table 2804.3.1, Table 2804.3.2, Table 2804.3.2.2, 2804.4.1, 2804.5.2, 2804.6, Table 2806.2, 2806.2.3, 2806.3.2, Table 2806.4, 2806.5.1, 2806.5.6, 2807.1
NFPA 33-07	Spray Application Using Flammable or Combustible Materials	1504.3.2
NFPA 72-07	National Fire Alarm Code	509.1, Table 901.6.1, 903.4.1, 904.3.5, 907.2, 907.2.1.1, 907.2.10, 907.2.10.4, 907.2.11.2, 907.2.11.3, 907.2.12.2.3, 907.2.12.3, 907.3, 907.5, 907.6, 907.10.2, 907.11, 907.15, 907.17, 907.18, 907.20, 907.20.2, 907.20.5
NFPA 704-07	Identification of the Hazards of Materials for Emergency Response	606.7, 1802.1, 2404.2, 2703.2.2.1, 2703.2.2.2, 2703.5, 2703.10.2, 2705.1.10, 2705.2.1.1, 2705.4.4, 3203.4.1, 3404.2.3.2

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Division of Building and Fire Regulation

DEVELOPMENT OF THE 2009 BUILDING AND FIRE REGULATIONS

STAFF RECOMMENDATIONS FOR THE BASE DOCUMENT OF THE
VIRGINIA UNIFORM STATEWIDE BUILDING CODE
PART II – REHABILITATION (Virginia Rehabilitation Code)

(Only those provisions with changes are shown)

13 VAC 5-63-400. Chapter 1 Administration; Section 101 General.

(Subsection A unchanged)

B. Section 101.2 Incorporation by reference. Chapters 2 - 15 of the ~~2006~~ 2009 International Existing Building Code, published by the International Code Council, Inc., are adopted and incorporated by reference to be an enforceable part of the Virginia Rehabilitation Code. The term “IEBC” means the ~~2006~~ 2009 International Existing Building Code, published by the International Code Council, Inc. Any codes and standards referenced in the IEBC are also considered to be part of the incorporation by reference, except that such codes and standards are used only to the prescribed extent of each such reference.

(Remainder of section unchanged)

13 VAC 5-63-434. Chapter 7 Alterations -- Level 2.

A. ~~Change Section 704.2.1 of the IEBC to read:~~

~~704.2.1 High-rise buildings. In high-rise buildings, work areas that include either exits or corridors shared by more than one tenant or exits or corridors that serve an occupant load greater than 30 shall be provided with automatic sprinkler protection in the entire work area where the work area is located on a floor that has a sufficient sprinkler water supply system from an existing standpipe or a sprinkler riser serving that floor.~~

B. ~~Change Section 704.2.2 of the IEBC to read:~~

~~704.2.2 Groups A, E, F-1, H, I, M, R-1, R-2, R-4, S-1 and S-2. In buildings with occupancies in Groups A, E, F-1, H, I, M, R-1, R-2, R-4, S-1 and S-2, work areas that include either exits or corridors shared by more than one tenant or exits or corridors that serve an occupant load greater than 30 shall be provided with automatic sprinkler protection where all of the following conditions occur:~~

~~1. The work area is required to be provided with automatic sprinkler protection in accordance with the International Building Code as applicable to new construction;~~

~~2. The work area exceeds 50 percent of the floor area; and~~

~~3. The building has sufficient municipal water supply for design of a fire sprinkler system available to the floor without installation of a new fire pump.~~

~~Exception: Work areas in Group R occupancies three stories or less in height.~~

~~C. Change Section 704.2.3 of the IEBC to read:~~

~~704.2.3 Windowless stories. Work located in a windowless story, as determined in accordance with the International Building Code, shall be sprinklered where the work area is required to be sprinklered under the provisions of the International Building Code for newly constructed buildings and the building has a sufficient municipal water supply available without installation of a new fire pump.~~

~~D. Change Section 704.2.4 of the IEBC to read:~~

~~704.2.4 Other required suppression systems. In buildings and areas listed in Table 903.2.13 of the International Building Code, work areas that include either exits or corridors shared by more than one tenant or exit or corridors serving an occupant load greater than 30 shall be provided with sprinkler protection under the following conditions:~~

- ~~1. The work area is required to be provided with automatic sprinkler protection in accordance with the International Building Code applicable to new construction; and~~
- ~~2. The building has sufficient municipal water supply for design of a fire sprinkler system available to the floor without installation of a new fire pump.~~

~~E. Change Section 704.2.5 of the IEBC to read:~~

~~704.2.5 Supervision. Fire sprinkler systems required by this section shall be supervised by one of the following methods:~~

- ~~1. Approved central station system in accordance with NFPA 72;~~
- ~~2. Approved proprietary system in accordance with NFPA 72;~~
- ~~3. Approved remote station system of the jurisdiction in accordance with NFPA 72 ; or~~
- ~~4. When approved by the code official, approved local alarm service that will cause the sounding of an alarm in accordance with NFPA 72.~~

~~Exception: Supervision is not required for the following:~~

- ~~1. Underground gate valve with roadway boxes.~~
- ~~2. Halogenated extinguishing systems.~~
- ~~3. Carbon dioxide extinguishing systems.~~

~~4. Dry and wet chemical extinguishing systems.~~

~~5. Automatic sprinkler systems installed in accordance with NFPA 13R where a common supply main is used to supply both domestic and automatic sprinkler systems and a separate shutoff valve for the automatic sprinkler system is not provided.~~

~~F. Change Exception 2 of Section 705.2 to read:~~

~~2. Means of egress conforming to the requirements of the International Building Code building code under which the building was constructed shall be considered compliant means of egress.~~

~~G. B. Change Item 7 of Section 705.3.1.1 of the IEBC to read:~~

~~7. In Group R-2, H-4, H-5 and I occupancies and in rooming houses and childcare centers, a single exit is permitted in a one-story building with a maximum occupant load of 10 and the exit access travel distance does not exceed 75 feet (22 860 mm). In dwelling units within Group R-2 buildings, an occupant load of 12 shall be permitted to be substituted for the occupant load established above and, in addition, staff of such family day homes shall not be counted for the purposes of establishing occupant loads.~~

~~13 VAC 5-63-436. Chapter 8 Alterations—Level 3. (Repealed.)~~

~~A. Change Section 804.1 of the IEBC to read:~~

~~804.1 Automatic sprinkler systems. Automatic sprinkler systems shall be provided in all work areas when required by Section 704.2 or by this section.~~

~~B. Change Section 804.1.2 of the IEBC to read:~~

~~804.1.2 Rubbish and linen chutes. Rubbish and linen chutes located in the work area shall be provided with sprinkler protection where protection or other approved fire suppression systems of the rubbish or linen chute would be required under the provisions of the International Building Code for new construction.~~

~~13 VAC 5-63-437. Chapter 9 Change of occupancy. (Repealed.)~~

~~Change Exception 4 of Section 912.4.1 of the IEBC to read:~~

~~4. Existing corridor walls constructed on both sides of wood lath and plaster in good condition or 1/2-inch-thick (12.7 mm) gypsum wallboard shall be permitted. Such walls shall either terminate at the underside of a ceiling of equivalent construction or shall extend to the underside of the floor or roof next above.~~

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VIRGINIA UNIFORM STATEWIDE BUILDING CODE
PART III – MAINTENANCE (Virginia Maintenance Code)

(Only those provisions with changes are shown)

13 VAC 5-63-450. Chapter 1 Administration; Section 101 General.

(Subsection A unchanged)

B. Section 101.2 Incorporation by reference. Chapters 2 - 8 of the ~~2006~~ 2009 International Property Maintenance Code, published by the International Code Council, Inc., are adopted and incorporated by reference to be an enforceable part of the Virginia Maintenance Code. The term “IPMC” means the ~~2006~~ 2009 International Property Maintenance Code, published by the International Code Council, Inc. Any codes and standards referenced in the IPMC are also considered to be part of the incorporation by reference, except that such codes and standards are used only to the prescribed extent of each such reference.

(Remainder of section unchanged)

13 VAC 5-63-480. Section 104 Enforcement, generally.

A. Section 104.1 Scope of enforcement. This section establishes the requirements for enforcement of this code in accordance with § 36-105 of the Code of Virginia ~~7.1~~. The local governing body may also inspect and enforce the provisions of the USBC for existing buildings and structures, whether occupied or not. Such inspection and enforcement shall be carried out by an agency or department designated by the local governing body.

If the local building department receives a complaint that a violation of this code exists that is an immediate and imminent threat to the health or safety of the owner or tenant of a residential dwelling unit or a nearby residential dwelling unit, and the owner or tenant of the residential dwelling unit that is the subject of the complaint has refused to allow the code official or his agent to have access to the subject dwelling, the code official or his agent may present sworn testimony to a court of competent jurisdiction and request that the court grant the code official or his agent an inspection warrant to enable the code official or his agent to enter the subject dwelling for the purpose of determining whether violations of this code exist. The code official or his agent shall make a reasonable effort to obtain consent from the owner or tenant of the subject dwelling prior to seeking the issuance of an inspection warrant under this section.

Note: Generally, official action must be taken by the local government to enforce the Virginia Maintenance Code. Consultation with the legal counsel of the jurisdiction when initiating or changing such action is advised.

B. Section 104.1.1 Transfer of ownership. In accordance with § 36-105 of the Code of Virginia, if the local building department has initiated an enforcement action against the owner of a building or structure and such owner subsequently transfers the ownership of the building or structure to an entity in which the owner holds an ownership interest greater than 50%, the pending enforcement action shall continue to be enforced against the owner.

(Subsection C unchanged)

D. Section 104.3 State buildings. In accordance with § 36-98.1 of the Code of Virginia, this code shall be applicable to state-owned buildings and structures. Acting through the Division of Engineering and Buildings, the Department of General Services shall function as the building official for state-owned buildings.

E. Section 104.3.1 Certification of state enforcement personnel. State enforcement personnel shall comply with the applicable requirements of Sections 104.4.2 through 104.4.4 for certification, periodic maintenance training and continuing education.

F. Section 104.4 Local enforcing agency. In jurisdictions enforcing this code, the local governing body shall designate the agency within the local government responsible for such enforcement and appoint a code official. The local governing body may also utilize technical assistants to assist the code official in the enforcement of this code. A permanently appointed code official shall not be removed from office except for cause after having been afforded a full opportunity to be heard on specific and relevant charges by and before the appointing authority. DHCD shall be notified by the appointing authority within 30 days of the appointment or release of a permanent or acting code official and within 60 days after retaining or terminating a technical assistant.

Note: Code officials and technical assistants are subject to sanctions in accordance with the VCS.

~~F. G.~~ Section 104.4.1 Qualifications of code official and technical assistants. The code official shall have at least five years of building experience as a licensed professional engineer or architect, building, fire or trade inspector, contractor, housing inspector or superintendent of building, fire or trade construction or at least five years of building experience after obtaining a degree in architecture or engineering, with at least three years in responsible charge of work. Any combination of education and experience that would confer equivalent knowledge and ability shall be deemed to satisfy this requirement. The code official shall have general knowledge of sound engineering practice in respect to the design and construction of structures, the basic principles of fire prevention, the accepted requirements for means of egress and the installation of elevators and other service equipment necessary for the health, safety and general welfare of the occupants and the public. The local governing body may establish additional qualification requirements.

A technical assistant shall have at least three years of experience and general knowledge in at least one of the following areas: building construction, building, fire or housing inspections, plumbing, electrical or mechanical trades, fire protection, elevators or property maintenance work. Any combination of education and experience which would confer equivalent knowledge and ability shall be deemed to satisfy this requirement. The locality may establish additional certification requirements.

~~G.~~ H. Section 104.4.2 Certification of code official and technical assistants. An acting or permanent code official shall be certified as a code official in accordance with the VCS within one year after being appointed as acting or permanent code official. A technical assistant shall be certified in the appropriate subject area within 18 months after becoming a technical assistant. When required by a locality to have two or more certifications, a technical assistant shall obtain the additional certifications within three years from the date of such requirement.

Exception: A code official or technical assistant in place prior to April 1, 1995, shall not be required to meet the certification requirements in this section while continuing to serve in the same capacity in the same locality.

~~H.~~ I. Section 104.4.3 Noncertified code official. Except for a code official exempt from certification under the exception to Section 104.4.2, any acting or permanent code official who is not certified as a code official in accordance with the VCS shall attend the core module of the Virginia Building Code Academy or an equivalent course in an individual or regional code academy accredited by DHCD within 180 days of appointment. This requirement is in addition to meeting the certification requirement in Section 104.4.2.

~~I.~~ J. Section 104.4.4 Requirements for periodic maintenance training and continuing education requirements . Code officials and technical assistants shall attend ~~16 hours every two years of continuing education and periodic maintenance training courses approved or required as designated by DHCD. Additional continuing education hours shall not be required if more than one certificate is held.~~ In addition to the periodic certification maintenance training required above, code officials and technical assistants shall attend 16 hours every two years of continuing education as approved by DHCD. If a code official or technical assistant possesses more than one BHCD certificate, the 16 hours shall satisfy the continuing education requirement for all BHCD certificates.

~~J.~~ K. Section 104.4.5 Conflict of interest. The standards of conduct for code officials and technical assistants shall be in accordance with the provisions of the State and Local Government Conflict of Interests Act, Chapter 31 (§ 2.2-3100 et seq.) of Title 2.2 of the Code of Virginia.

~~K.~~ L. Section 104.4.6 Records. The local enforcing agency shall retain a record of applications received, permits, certificates, notices and orders issued, fees collected and reports of inspections in accordance with The Library of Virginia's General Schedule Number Six.

~~L.~~ M. Section 104.5 Powers and duties, generally. The code official shall enforce this code as set out herein and as interpreted by the State Review Board and shall issue all necessary notices or orders to ensure compliance with the code.

~~M.~~ N. Section 104.5.1 Delegation of authority. The code official may delegate powers and duties except where such authority is limited by the local government. When such delegations are made, the code official shall be responsible for assuring that they are carried out in accordance with the provisions of this code.

~~N.~~ O. Section 104.5.2 Issuance of modifications. Upon written application by an owner or an owner's agent, the code official may approve a modification of any provision of this code

provided the spirit and intent of the code are observed and public health, welfare and safety are assured. The decision of the code official concerning a modification shall be made in writing and the application for a modification and the decision of the code official concerning such modification shall be retained in the permanent records of the local enforcing agency.

~~Q.~~ P. Section 104.5.2.1 Substantiation of modification. The code official may require or may consider a statement from a professional engineer, architect or other person competent in the subject area of the application as to the equivalency of the proposed modification.

~~P.~~ Q. Section 104.5.3 Inspections. The code official may inspect buildings or structures to determine compliance with this code and shall carry proper credentials when performing such inspections.

~~Q.~~ R. Section 104.5.4 Notices, reports and orders. Upon findings by the code official that violations of this code exist, the code official shall issue a correction notice or notice of violation to the owner or the person responsible for the maintenance of the structure. Work done to correct violations of this code subject to the permit, inspection and approval provisions of the Virginia Construction Code shall not be construed as authorization to extend the time limits established for compliance with this code.

~~R.~~ S. Section 104.5.4.1 Correction notice. The correction notice shall be a written notice of the defective conditions. The correction notice shall require correction of the violation or violations within a reasonable time unless an emergency condition exists as provided under the unsafe building provisions of Section 105. Upon request, the correction notice shall reference the code section that serves as the basis for the defects and shall state that such defects shall be corrected and reinspected in a reasonable time designated by the code official.

~~S.~~ T. Section 104.5.4.2 Notice of violation. If the code official determines there are violations of this code other than those for unsafe structures, unsafe equipment or structures unfit for human occupancy under Section 105, the code official may issue a notice of violation to be communicated promptly in writing to the owner or the person responsible for the maintenance or use of the building or structure in lieu of a correction notice as provided for in Section 104.5.4.1. In addition, the code official shall issue a notice of violation for any uncorrected violation remaining from a correction notice established in Section 104.5.4.1. A notice of violation shall be issued by the code official before initiating legal proceedings unless the conditions violate the unsafe building conditions of Section 105 and the provisions established therein are followed. The code official shall provide the section numbers to the owner for any code provision cited in the notice of violation. The notice shall require correction of the violation or violations within a reasonable time unless an emergency condition exists as provided under the building provisions of Section 105. The owner or person to whom the notice of violation has been issued shall be responsible for contacting the code official within the time frame established for any reinspections to assure the violations have been corrected. The code official will be responsible for making such inspection and verifying the violations have been corrected. In addition, the notice of violation shall indicate the right of appeal by referencing the appeals section of this code.

~~T.~~ U. Section 104.5.5 Coordination of inspections. The code official shall coordinate inspections and administrative orders with any other state or local agencies having related inspection

authority and shall coordinate those inspections required by the Virginia Statewide Fire Prevention Code (13VAC5-51) for maintenance of fire protection devices, equipment and assemblies so that the owners and occupants will not be subjected to numerous inspections or conflicting orders.

Note: The Fire Prevention Code requires the fire official to coordinate such inspections with the code official.

~~U.~~ V. Section 104.5.6 Further action when violation not corrected. If the responsible party has not complied with the notice of violation, the code official shall submit a written request to the legal counsel of the locality to institute the appropriate legal proceedings to restrain, correct or abate the violation or to require the removal or termination of the use of the building or structure involved. In cases where the locality so authorizes, the code official may issue or obtain a summons or warrant.

~~V.~~ W. Section 104.5.7 Penalties and abatement. Penalties for violations of this code shall be as set out in § 36-106 of the Code of Virginia. The successful prosecution of a violation of the code shall not preclude the institution of appropriate legal action to require correction or abatement of a violation.

13 VAC 5-63-520. Chapter 3 General requirements.

(Subsections A-J unchanged)

K. Change Section ~~307.1~~ 308.1 of the IPMC to read as follows and delete the remaining provisions of Section ~~307~~ 308 :

~~307.1~~ 308.1 Accumulation of rubbish and garbage. The interior of every structure shall be free from excessive accumulation of rubbish or garbage.

L. Change Section ~~308.1~~ 309.1 of the IPMC to read:

~~308.1~~ 309.1 Infestation. This section shall apply to the extent that insect and rodent infestation adversely affects a structure. All structures shall be kept free from insect and rodent infestation. All structures in which insects or rodents are found shall be promptly exterminated by approved processes that will not be injurious to human health. After extermination, proper precautions shall be taken to prevent reinfestation.

13 VAC 5-63-540. Chapter 6 Mechanical and electrical requirements.

(Subsections A-F unchanged)

G. ~~Add~~ Change Section ~~606.3~~ 606.1 to the IPMC to read:

~~606.3~~ Inspection standard 606.1 General . Elevators, dumbwaiters and escalators shall be maintained in compliance with ASME A17.1. The most current certificate of inspection shall be on display at all times within the elevator or attached to the escalator or dumbwaiter, be available for public inspection in the office of the building operator or be posted in a publicly conspicuous

location approved by the code official. An annual periodic inspection and test is required of elevators and escalators. A locality shall be permitted to require a six-month periodic inspection and test. All periodic inspections shall be performed in accordance with Section 8.11 of ASME A17.1. The code official may also provide for such inspection by an approved agency or through agreement with other local certified elevator inspectors. An approved agency includes any individual, partnership or corporation who has met the certification requirements established by the VCS.

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VIRGINIA UNIFORM STATEWIDE BUILDING CODE
PART I – CONSTRUCTION (Virginia Construction Code)

(Only those provisions with changes are shown)

13 VAC 5-63-10. Chapter 1 Administration; Section 101 General.

(Subsection A unchanged)

B. Section 101.2 Incorporation by reference. Chapters 2 - 35 of the 2006 International Building Code, published by the International Code Council, Inc., are adopted and incorporated by reference to be an enforceable part of the USBC. The term “IBC” means the ~~2006~~ 2009 International Building Code, published by the International Code Council, Inc. Any codes and standards referenced in the IBC are also considered to be part of the incorporation by reference, except that such codes and standards are used only to the prescribed extent of each such reference. In addition, any provisions of the appendices of the IBC specifically identified to be part of the USBC are also considered to be part of the incorporation by reference.

Note 1: The IBC references the whole family of International Codes including the following major codes:

~~2006~~ 2009 International Plumbing Code
~~2006~~ 2009 International Mechanical Code
~~2005~~ 2008 National Electrical Code
~~2006~~ 2009 International Fuel Gas Code
~~2006~~ 2009 International Energy Conservation Code
~~2006~~ 2009 International Residential Code

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

(Remainder of section unchanged)

13 VAC 5-63-20. Section 102 Purpose and scope.

(Subsections A-C unchanged)

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

(Subdivisions 1-4 unchanged)

5. Industrialized buildings subject to the Virginia Industrialized Building Safety Regulations (13 VAC 5-91) and manufactured homes subject to the Virginia Manufactured Home Safety Regulations (13 VAC 5-95); except as provided for in Section ~~421~~ 424 .

(Remainder of section unchanged)

13 VAC 5-63-30. Section 103 Application of code.

(Subsection A unchanged)

B. Section 103.2 When applicable to new construction. Construction for which a permit application is submitted to the local building department after ~~May 1, 2008~~ (insert effective date) , shall comply with the provisions of this code, except for permit applications submitted during a one-year period after ~~May 1, 2008~~ (insert effective date) . The applicant for a permit during such one-year period shall be permitted to choose whether to comply with the provisions of this code or the provisions of the code in effect immediately prior to ~~May 1, 2008~~ (insert effective date) . This provision shall also apply to subsequent amendments to this code based on the effective date of such amendments. In addition, when a permit has been properly issued under a previous edition of this code, this code shall not require changes to the approved construction documents, design or construction of such a building or structure, provided the permit has not been suspended or revoked.

(Subsections C-F unchanged)

G. Section 103.7. Retrofit requirements. The local building department shall enforce the provisions of Section ~~3411~~ 3413 , which require certain existing buildings to be retrofitted with fire protection systems and other safety equipment. Retroactive fire protection system requirements contained in the International Fire Code shall not be applicable unless required for compliance with the provisions of Section ~~3411~~ 3413 .

(Subsections H-J unchanged)

K. Section 103.10 Use of certain provisions of referenced codes. The following provisions of the IBC and of other indicated codes or standards are to be considered valid provisions of this code. Where any such provisions have been modified by the state amendments to the IBC, then the modified provisions apply.

1. Special inspection requirements in Chapters 2 - 35.

2. Chapter 34, Existing Structures, except that Section ~~3410~~ 3412 , Compliance Alternatives, shall not be used to comply with the retrofit requirements identified in Section 103.7 and shall not be construed to permit noncompliance with any applicable flood load or flood-resistant construction requirements of this code.

(Subsections L-N unchanged)

O. Section 103.13.1 Certification of state enforcement personnel. State enforcement personnel shall comply with the applicable requirements of Section 105 for certification, periodic maintenance training and continuing education.

13 VAC 5-63-50. Section 105 Local building department.

(Subsections A-D unchanged)

E. Section 105.1.4 Requirements for periodic maintenance training and continuing education requirements . Building officials shall attend 16 hours every two years of continuing education and periodic maintenance training courses approved or required as designated by DHCD. Additional continuing education hours shall not be required if more than one certificate is held. In addition to the periodic certification maintenance training required above, building official shall attend 16 hours every two years of continuing education as approved by DHCD. If a building official possesses more than one BHCD certificate, the 16 hours shall satisfy the continuing education requirement for all BHCD certificates.

(Subsections F-H unchanged)

I. Section 105.2.3 Requirements for periodic maintenance training and continuing education requirements . Technical assistants shall attend 16 hours every two years of continuing education and periodic maintenance training courses approved or required as designated by DHCD. Additional continuing education hours shall not be required if more than one certificate is held. In addition to the periodic certification maintenance training required above, technical assistants shall attend 16 hours every two years of continuing education as approved by DHCD. If a technical assistant possesses more than one BHCD certificate, the 16 hours shall satisfy the continuing education requirement for all BHCD certificates.

(Remainder of section unchanged)

13 VAC 5-63-70. Section 107 Fees.

(Subsections A-C unchanged)

D. Section 107.2 Code academy fee levy. In accordance with subdivision 7 of § 36-137 of the Code of Virginia, the local building department shall collect a 1.75% 2.0% levy of fees charged for building permits issued under this code and transmit it quarterly to DHCD to support training programs of the Virginia Building Code Academy. The foregoing levy shall remain effective until July 1, 2009, after which time the fee levy shall be increased to 2.0%. Localities that maintain individual or regional training academies accredited by DHCD shall retain such levy.

13 VAC 5-63-150. Section 115 Violations.

(Subsections A-E unchanged)

F. Section 115.5 Transfer of ownership. In accordance with § 36-105 of the Code of Virginia, if the local building department has initiated an enforcement action against the owner of a building or structure and such owner subsequently transfers the ownership of the building or

structure to an entity in which the owner holds an ownership interest greater than 50%, the pending enforcement action shall continue to be enforced against the owner.

13 VAC 5-63-190. Section 119 Appeals.

(Subsections A-F unchanged)

G. Section 119.7 Hearings and decision. All hearings before the LBBCA shall be open meetings and the appellant, the appellant's representative, the locality's representative and any person whose interests are affected by the building official's decision in question shall be given an opportunity to be heard. The chairman shall have the power and duty to direct the hearing, rule upon the acceptance of evidence and oversee the record of all proceedings. The LBBCA shall have the power to uphold, reverse or modify the decision of the official by a concurring vote of a majority of those present. Decisions of the LBBCA shall be final if no further appeal is made. The decision of the LBBCA shall be by resolution signed by the chairman and retained as part of the record of the appeal. Copies of the resolution shall be sent to all parties by certified mail. In addition, the resolution shall contain the following wording:

“Any person who was a party to the appeal may appeal to the State Review Board by submitting an application to such Board within 21 calendar days upon receipt by certified mail of this resolution. Application forms are available from the Office of the State Review Board, ~~501 North Second~~ 600 East Main Street, Richmond, Virginia 23219, ~~(804) 371-7150~~ .”

(Remainder of section unchanged)

13 VAC 5-63-200. Chapter 2 Definitions: Section 202 Definitions.

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

(Definitions A-K unchanged)

LBBCA. Local board of building code appeals (~~LBBCA~~). ~~See Section 119.1~~ .

(Remainder of subsection unchanged)

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

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

For application of this code, each portion of a building that is completely separated from other portions by fire walls complying with Section ~~705~~ 706 shall be considered as a separate building (see ~~IBC~~ Section 503.1).

~~Canopy. A structure or architectural projection of rigid construction over which a covering is attached that provides weather protection, identity or decoration and may be structurally independent or supported by attachment to a building on one end by not less than one stanchion on the other end.~~

(Remainder of subsection unchanged)

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

Agricultural , building.

Existing ~~building~~ structure .

13 VAC 5-63-210. Chapter 3 Use and occupancy classification.

A. Change exception ~~15~~ 13 of Section 307.1 of the IBC to read:

~~15~~. 13. The storage of black powder, smokeless propellant and small arms primers in Groups M, R-3 and R-5 and special industrial explosive devices in Groups B, F, M and S, provided such storage conforms to the quantity limits and requirements prescribed in the International Fire Code, as amended in Section 307.9.

B. Add Section 307.9 to the IBC to read:

307.9 Amendments. The following changes shall be made to the International Fire Code for the use of Exception ~~15~~ 13 in Section 307.1:

(Remainder of subsection unchanged)

~~D~~. C. Change Section 308.5.2 of the IBC to read:

308.5.2 Child care facility. A facility other than family day homes under Section 310.4 that provides supervision and personal care on less than a 24-hour basis for more than five children 2-1/2 years of age or less shall be classified as Group I-4.

Exception: A child day care facility that provides care for more than five but no more than 100 children 2-1/2 years or less of age, ~~when~~ where the rooms ~~where such~~ in which the children are cared for are located on ~~the~~ a level of exit discharge servicing such rooms and each of these child care rooms has an exit door directly to the exterior, shall be classified as Group E.

~~E~~. D. Change occupancy classifications “R-1” and “R-4” and add new occupancy classification “R-5” to Section 310 of the IBC to read:

R-1 Residential occupancies containing sleeping units where the occupants are primarily transient in nature, including:

Boarding houses (transient)

Hotels (transient)

Motels (transient)

Congregate living facilities (transient) with 10 or fewer occupants are permitted to comply with the construction requirements for Group R-3.

Exceptions:

1. Nonproprietor occupied bed and breakfast and other transient boarding facilities not more than three stories above grade plane in height with a maximum of 10 occupants total are permitted to be classified as either Group R-3 or Group R-5 provided that smoke alarms are installed in compliance with Section 907.2.10.1.2 for Group R-3 or Section 313.1 of the International Residential Code for Group R-5.

2. Proprietor occupied bed and breakfast and other transient boarding facilities not more than three stories above grade plane in height, that are also occupied as the residence of the proprietor, with a maximum of five guest room sleeping units provided for the transient occupants are permitted to be classified as either Group R-3 or R-5 provided that smoke alarms are installed in compliance with Section 907.2.10.1.2 for Group R-3 or Section 313.1 of the International Residential Code for Group R-5.

R-4 Residential occupancies shall include buildings arranged for occupancy as residential care/assisted living facilities including more than five but not more than 16 occupants, excluding staff.

Group R-4 occupancies shall meet the requirements for construction as defined for Group R-3, except as otherwise provided for in this code ; or shall comply with the ~~International Residential Code with the additional requirement to provide~~ IRC provided the building is protected by an automatic sprinkler system installed in accordance with Section 903.2.7.

Exception: Group homes licensed by the Virginia Department of Mental Health, Mental Retardation and Substance Abuse Services or the Virginia Department of Social Services that house no more than eight persons with one or more resident counselors shall be classified as Group R-2, R-3, R-4 or R-5. Not more than five of the persons may require physical assistance from staff to respond to an emergency situation.

R-5 Residential occupancies in detached one- and two-family dwellings, townhouses and accessory structures within the scope of the International Residential Code, also referred to as the "IRC."

~~F. E.~~ Add Section 310.3 to the IBC to read:

310.3 Group R-5. The construction of Group R-5 structures shall comply with the IRC. The amendments to the IRC set out in Section 310.6 shall be made to the IRC for its use as part of this code. In addition, all references to Section 101.2 in the IBC relating to the construction of such structures subject to the IRC shall be considered to be references to this section.

~~G. E.~~ Add Section 310.3.1 to the IBC to read:

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

~~H.~~ G. Add Section 310.4 to the IBC to read:

310.4 Family day homes. Family day homes where program oversight is provided by the Virginia Department of Social Services shall be classified as Group R-2, R-3 or R-5.

Note: Family day homes may generally care for up to 12 children. See the DHCD Related Laws Package for additional information.

~~I.~~ H. Add Section 310.5 to the IBC to read:

310.5 Radon-resistant construction in Group R-3 and R-4 structures. Group R-3 and R-4 structures shall be subject to the radon-resistant construction requirements in Appendix F in localities enforcing such requirements pursuant to Section R325 of the IRC.

~~J.~~ I. Add Section 310.6 to the IBC to read:

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

1. ~~Add the following definitions to Section R202 to read:~~

~~Air impermeable insulation. An insulation having an air permeance equal to or less than 0.02 L/s·m² at 75 Pa pressure differential tested according to ASTM E 2178 or E 283.~~

~~Subsoil drain. A drain that collects subsurface water or seepage water and conveys such water to a place of disposal.~~

2. ~~Change the definition of “Story above grade” in Section R202 to read:~~

~~Story above grade. Any story having its finished floor surface entirely above grade, except that a basement shall be considered as a story above grade where the finished surface of the floor above the basement meets any one of the following:~~

~~1. Is more than 6 feet (1829 mm) above the grade plane.~~

~~2. Is more than 6 feet (1829 mm) above the finished ground level for more than 50% of the total building perimeter.~~

~~3. Is more than 12 feet (3658 mm) above the finished ground level at any point.~~

3. Change Section R301.2.1 to read:

R301.2.1 Wind limitations. Buildings and portions thereof shall be limited by wind speed, as defined in Figure R301.2(1), and construction methods in accordance with this code. Basic wind

speeds shall be determined from Table R301.2(4). Where different construction methods and structural materials are used for various portions of a building, the applicable requirements of this section for each portion shall apply. Where loads for wall coverings, curtain walls, roof coverings, exterior windows, skylights, garage doors and exterior doors are not otherwise specified, the loads listed in Table R301.2(2) adjusted for height and exposure using Table R301.2(3) shall be used to determine design load performance requirements for wall coverings, curtain walls, roof coverings, exterior windows, skylights, garage doors and exterior doors. Asphalt shingles shall be designed for wind speeds in accordance with Section R905.2.6. Wind speeds for localities in special wind regions, near mountainous terrain, and near gorges shall be based on elevation. Areas at 4,000 feet in elevation or higher shall use 110 V mph (48.4 m/s) and areas under 4,000 feet in elevation shall use 90 V mph (39.6 m/s). Gorge areas shall be based on the highest recorded speed per locality or in accordance with local jurisdiction requirements determined in accordance with Section 6.5.4 of ASCE 7.

4. 2. Change Section R301.2.1.1 to read:

R301.2.1.1 Design criteria. Construction in regions where the basic wind speeds from Figure R301.2(4) equal or exceed 110 miles per hour (49 m/s) shall be designed in accordance with one of the following ~~÷ methods~~. The elements of design not addressed by those documents in Items 1 through 4 shall be in accordance with this code.

1. American Forest and Paper Association (AF&PA) Wood Frame Construction Manual for One- and Two-Family Dwellings (WFCM); or

2. ~~Southern Building Code Congress International Standard for Hurricane Resistant Residential Construction (SSTD-10)~~ International Code Council (ICC) Standards for Residential Construction in High Wind Regions (ICC-600) ; or

3. Minimum Design Loads for Buildings and Other Structures (ASCE-7); or

4. American Iron and Steel Institute (AISI), Standard for Cold-Formed Steel Framing- Prescriptive Method for One- and Two-Family Dwellings (~~COFS/PM~~) with Supplement to Standard for Cold-Formed Steel Framing- Prescriptive Method for One- and Two-Family Dwellings (AISI S230) .

5. Concrete construction shall be designed in accordance with the provisions of this code.

6. Structural insulated panel (SIP) walls shall be designed in accordance with the provisions of this code.

5. Change Table R301.7 to read:

Table R301.7 Allowable Deflection of Structural Members ^{a,b,e,d}	
Structural Member	Allowable Deflection
Rafters having slopes greater than 3/12 with no finished ceiling attached to rafters	L/180
Interior walls and partitions	H/180

Floors and plastered ceilings	L/360
All other structural members	L/240
Exterior walls with plaster or stucco finish	H/360
Exterior walls - wind loads with brittle finishes	H/240
Exterior walls - wind loads with flexible finishes	H/120d
Veneer masonry walls	L/600
<p>Note: L = span length, H = span height. ^aThe wind load shall be permitted to be taken as 0.7 times the Component and Cladding loads for the purpose of determining deflection limits herein. ^bFor cantilever members, L shall be taken as twice the length of the cantilever. ^cFor aluminum structural members or panels used in roofs or walls of sunroom additions or patio covers, not supporting edge of glass or sandwich panels, the total load deflection shall not exceed L/60. For sandwich panels used in roofs or walls of sunroom additions or patio covers, the total load deflection shall not exceed L/120. ^dDeflection for exterior walls with interior gypsum board finish shall be limited to an allowable deflection of H/180.</p>	

6. Change Section R302.1 to read:

R302.1 Exterior walls. Construction, projections, openings and penetrations of exterior walls of dwellings and accessory buildings shall comply with Table R302.1.

Exceptions:

1. Walls, projections, openings or penetrations in walls perpendicular to the line use to determine the fire separation distance.
2. Walls of dwellings and accessory structures located on the same lot.
3. Detached tool sheds and storage sheds, playhouses and similar structures exempted from permits are not required to provide wall protection based on location on the lot. Projections beyond the exterior wall shall not extend over the lot line.
4. Detached garages accessory to a dwelling located within two feet (610 mm) of a lot line are permitted to have roof eave projections not exceeding four inches (102 mm).
5. Foundation vents installed in compliance with this code are permitted.

3. Add the following sentence to the end of Section R302.3 to read:

Dwelling unit separation wall assemblies which are constructed on a lot line shall be constructed as required in Section R302.2 for townhouses.

7. 4. Add an exception to Section R303.8 to read:

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

~~8.~~ 5. Add Section R303.8.1 to read:

R303.8.1 Nonowner occupied required heating. Every dwelling unit or portion thereof which is to be rented, leased or let on terms either expressed or implied to furnish heat to the occupants thereof shall be provided with facilities in accordance with Section R303.8 during the period from October 15 to May 1.

~~9.~~ 6. Add Section R303.9 to read:

R303.9 Insect screens. Every door, window and other outside opening required for ventilation purposes shall be supplied with approved tightly fitted screens of not less than 16 mesh per inch (16 mesh per 25 mm) and every screen door used for insect control shall have a self-closing device.

~~10.~~ 7. Add Section R306.5 to read:

R306.5 Water supply sources and sewage disposal systems. The water and drainage system of any building or premises where plumbing fixtures are installed shall be connected to a public or private water supply and a public or private sewer system. As provided for in Section 103.11 for functional design, water supply sources and sewage disposal systems are regulated and approved by the Virginia Department of Health and the Virginia Department of Environmental Quality.

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

~~11.~~ 8. Change Section R310.1 to read:

R310.1 Emergency escape and rescue required. Basements and each sleeping room designated on the construction documents shall have at least one openable emergency escape and rescue opening. Such opening shall be directly to the exterior of the building or to a deck, screen porch or egress court, all of which shall provide access to a public street, public alley or yard. Where emergency escape and rescue openings are provided, they shall have a sill height of not more than 44 inches (1118 mm) above the floor. Where a door opening having a threshold below the adjacent ground elevation serves as an emergency escape and rescue opening and is provided with a bulkhead enclosure, the bulkhead enclosure shall comply with Section R310.3. The net clear opening dimensions required by this section shall be obtained by the normal operation of the emergency escape and rescue opening from the inside, except that tilt-out or removable sash designed windows shall be permitted to be used. Emergency escape and rescue openings with a finished height below the adjacent ground elevation shall be provided with a window well in accordance with Section R310.2.

Exceptions:

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

2. Basements used only to house mechanical equipment and not exceeding total floor area of 200 square feet (18.58 m²).

~~12.~~ 9. Change Section R310.1.1 to read:

R310.1.1 Minimum opening area. All emergency escape and rescue openings shall have a minimum net clear opening of 5.7 square feet (0.530 m²), including the tilting or removal of the sash as the normal operation to comply with sections R310.1.2 and R310.1.3.

Exception: Grade floor openings shall have a minimum net clear opening of 5 square feet (0.465 m²).

~~13.~~ 10. Change Section ~~R311.5.3.1~~ R311.7.4.1 to read:

~~R311.5.3.1~~ R311.7.4.1 Riser height. The maximum riser height shall be 8-1/4 inches (210 mm). The riser shall be measured vertically between the leading edges of the adjacent treads. The greatest riser height within any flight of stairs shall not exceed the smallest by more than 3/8 inch (9.5 mm).

~~14.~~ 11. Change Section ~~R311.5.3.2~~ R311.7.4.2 to read:

~~R311.5.3.2~~ R311.7.4.2 Tread depth. The minimum tread depth shall be 9 inches (229 mm). The tread depth shall be measured horizontally between the vertical planes of the foremost projection of adjacent treads and at a right angle to the tread's leading edge. The greatest tread depth within any flight of stairs shall not exceed the smallest by more than 3/8 inch (9.5 mm). Consistently shaped winders at the walkline shall be allowed within the same flight of stairs as rectangular treads and do not have to be within 3/8 inch (9.5 mm) of the rectangular tread depth.

Winder treads shall have a minimum tread depth of 10 inches (254 mm) measured ~~as above at a point 12 inches (305 mm) from the side where the treads are narrower~~ between the vertical planes of the foremost projection of adjacent treads at the intersection with the walkline . Winder treads shall have a minimum tread depth of 6 inches (152 mm) at any point within the clear width of the stair . Within any flight of stairs, the ~~greatest~~ largest winder tread depth at the ~~12 inch (305 mm) walk line~~ walkline shall not exceed the smallest winder tread by more than 3/8 inch (9.5 mm).

~~15.~~ 12. Change Section R311.5.5 R311.7.6 to read:

~~R311.5.5~~ R311.7.6 Stairway walking surface. The walking surface of treads and landings of stairways shall be level or sloped no steeper than one unit vertical in 48 inches horizontal (two-percent slope).

~~16.~~ Change Section R317.1 to read:

~~R317.1 Two-family dwellings. Dwelling units in two-family dwellings shall be separated from each other by wall and/or floor assemblies having not less than a 1-hour fire-resistance rating when tested in accordance with ASTM E119. Fire-resistance-rated floor-ceiling and wall assemblies shall extend to and be tight against the exterior wall, and wall assemblies shall extend to and be tight against the underside of the roof sheathing. Dwelling-unit separation wall assemblies, which are constructed on a lot line, shall be constructed as required in Section R317.1 for townhouses.~~

Exceptions:

~~1. A fire-resistance rating of 1/2 hour shall be permitted in buildings located entirely on the same lot and equipped throughout with an automatic sprinkler system installed in accordance with NFPA 13.~~

~~2. For two-family dwellings located on the same lot, wall assemblies need not extend through attic spaces when the ceiling is protected by not less than 5/8-inch (15.9 mm) Type X gypsum board and an attic draft stop constructed as specified in Section R502.12.1 is provided above and along the wall assembly separating the dwellings. The structural framing supporting the ceiling shall also be protected by not less than 1/2-inch (12.7 mm) gypsum board or equivalent.~~

~~17. 13. Add Section R325 R324 Radon-Resistant Construction.~~

~~18. 14. Add Section R325.1 R324.1 to read:~~

~~R325.1 R324.1 Local enforcement of radon requirements. Following official action under Article 7 (§ 15.2-2280 et seq.) of Chapter 22 of Title 15.2 of the Code of Virginia by a locality in areas of high radon potential, as indicated by Zone 1 on the U.S. EPA Map of Radon Zones (IRC Figure AF101), such locality shall enforce the provisions contained in Appendix F.~~

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

~~19. 15. Add Section R326 R325 Swimming Pools, Spas and Hot Tubs.~~

~~20. 16. Add Section R326.1 R325.1 to read:~~

~~R326.1 R325.1 Use of Appendix G for swimming pools, spas and hot tubs. In addition to other applicable provisions of this code, swimming pools, spas and hot tubs shall comply with the provisions in Appendix G.~~

~~21. 17. Add Section R327 R326 Patio Covers.~~

~~22. 18. Add Section R327.1 R326.1 to read:~~

~~R327.1 R326.1 Use of Appendix H for patio covers. Patio covers shall comply with the provisions in Appendix H.~~

~~23. 19. Add Section R328 R327 Sound Transmission.~~

24. ~~20.~~ Add Section ~~R328.1~~ R327.1 to read:

~~R328.1~~ R327.1 Sound transmission between dwelling units. Construction assemblies separating dwelling units shall provide airborne sound insulation as required in Appendix K.

~~25.~~ 21. Add Section ~~R328.2~~ R327.2 to read:

~~R328.2~~ R327.2 Airport noise attenuation. This section applies to the construction of the exterior envelope of detached one- and two-family dwellings and multiple single-family dwellings (townhouses) not more than three stories high with separate means of egress within airport noise zones when enforced by a locality pursuant to § 15.2-2295 of the Code of Virginia. The exterior envelope of such structures shall comply with Section 1207.4 of the state amendments to the IBC.

~~26.~~ Change Section ~~R401.4~~ to read:

~~R401.4~~ Soil tests. ~~Where quantifiable data created by sound soil science methodologies indicate expansive, compressible, shifting or unknown soil characteristics are likely to be present, the building official shall determine whether to require a soil test to determine the soil's characteristics at a particular location. This test shall be made by an approved agency using an approved method.~~

~~27.~~ 22. Change Section R403.1 to read:

R403.1 General. All exterior walls shall be supported on continuous solid or fully grouted masonry or concrete footings, wood foundations, or other approved structural systems which shall be of sufficient design to accommodate all loads according to Section R301 and to transmit the resulting loads to the soil within the limitations as determined from the character of the soil. Footings shall be supported on undisturbed natural soils or engineered fill.

Exception: One-story detached accessory structures used as tool and storage sheds, playhouses and similar uses, not exceeding 256 square feet (23.7824 m²) of building area, provided all of the following conditions are met:

1. The building eave height is 10 feet or less.
2. The maximum height from the finished floor level to grade does not exceed 18 inches.
3. The supporting structural elements in direct contact with the ground shall be placed level on firm soil and when such elements are wood they shall be approved pressure preservative treated suitable for ground contact use.
4. The structure is anchored to withstand wind loads as required by this code.
5. The structure shall be of light-frame construction whose vertical and horizontal structural elements are primarily formed by a system of repetitive wood or light gauge steel framing members, with walls and roof of light weight material, not slate, tile, brick or masonry.

~~28. Change Section R404.1 to read as follows and delete Tables R404.1(1), R404.1(2) and R404.1(3):~~

~~R404.1 Concrete and masonry foundation walls. Concrete and masonry foundation walls shall be selected and constructed in accordance with the provisions of Section R404 or in accordance with ACI 318, ACI 332, NCMA TR68-A or ACI 530/ASCE 5/TMS 402 or other approved structural standards.~~

~~29. Change Section R408.1 to read:~~

~~R408.1 Ventilation. The under floor space between the bottom of the floor joists and the earth under any building (except space occupied by a basement) shall have ventilation openings through foundation walls or exterior walls. The minimum net area of ventilation openings shall not be less than one square foot (0.0929 m²) for each 150 square feet (14 m²) of under floor space area. One such ventilating opening shall be within three feet (914 mm) of each corner of the building.~~

~~Exception: When the exposed earth is covered with a continuous vapor barrier, the minimum net area of ventilation openings shall be not less than one square foot (0.0929 m²) for each 1,500 square feet (139 m²) of under floor space area. Joints of the vapor retarder shall overlap by six inches (152 mm).~~

~~30. Change Section R408.2 to read:~~

~~R408.2 Openings for under floor ventilation. Ventilation openings shall be covered for their height and width with any of the following materials provided that the least dimension of the covering shall not exceed 1/4 inch (6.4 mm):~~

- ~~1. Perforated sheet metal plates not less than 0.070 inch (1.8 mm) thick.~~
- ~~2. Expanded sheet metal plates not less than 0.047 inch (1.2 mm) thick.~~
- ~~3. Cast iron grill or grating.~~
- ~~4. Extruded load bearing brick vents.~~
- ~~5. Hardware cloth of 0.035 inch (0.89 mm) wire or heavier.~~
- ~~6. Corrosion resistant wire mesh, with the least dimension being 1/8 inch (3.2 mm).~~

~~31. Add Section R502.2.2.1 to read:~~

~~R502.2.2.1 Deck ledger connection to band joist. For residential applications and a total design load of 50 psf, the connection between a pressure preservative treated southern pine (or approved decay resistant species) deck ledger and a two inch nominal band joist bearing on a sill plate or wall plate shall be constructed with 1/2 inch lag screws or bolts with washers per Table R502.2.2.1.~~

32. Add Table R502.2.2.1 to read:

Table R502.2.2.1 Fastener Spacing for a Residential Southern Pine Deck Ledger and a 2-inch Nominal Solid-Sawn Band Joist (50 psf total load) ^e							
Joist Span (ft)	6' and less	6'-1" to 8'	8'-1" to 10'	10'-1" to 12'	12'-1" to 14'	14'-1" to 16'	16'-1" to 18'
-	On-Center Spacing of Fasteners ^{d,e}						
1/2" x 4" Lag Screws ^{a,b}	30	23	18	15	13	11	10
1/2" Bolt with washers	36	36	34	29	24	21	19

^aThe maximum gap between the face of the ledger board and face of the house band joist shall be 1/2 inch.
^bThe tip of the lag screw shall fully extend beyond the inside face of the band joist.
^cLedgers shall be flashed to prevent water from contacting the house band joist.
^dLag screws and bolts shall be staggered as set out in Section R502.2.2.1.1.
^eDeck ledger shall be 2x8 PPT No. 2 Southern Pine (minimum) or other approved method and material as established by standard engineering practice.

33. Add Section R502.2.2.1.1 to read:

R502.2.2.1.1 Placement of lag screws or bolts in residential deck ledgers. The lag screws or bolts shall be placed two inches in from the bottom or top of the deck ledgers and two inches in from the ends. The lag screws or bolts shall be staggered from the top to the bottom along the horizontal run of the deck ledger.

34. 23. Change Section R506.2.1 to read:

R506.2.1 Fill. Fill material shall be free of vegetation and foreign material and shall be natural nonorganic material that is not susceptible to swelling when exposed to moisture. The fill shall be compacted to assure uniform support of the slab, and except where approved, the fill depth shall not exceed 24 inches (610 mm) for clean sand or gravel and 8 inches (203 mm) for earth. Exception: Material other than natural material may be used as fill material when accompanied by a certification from an RDP and approved by the building official.

35. 24. Change Section R506.2.2 to read:

R506.2.2 Base. A 4-inch-thick (102 mm) base course consisting of clean graded sand, gravel or crushed stone passing a 2-inch (51 mm) sieve shall be placed on the prepared subgrade when the slab is below grade.

Exception: A base course is not required when the concrete slab is installed on well drained or sand-gravel mixture soils classified as Group I according to the United Soil Classification System in accordance with Table R405.1. Material other than natural material may be used as

base course material when accompanied by a certification from an RDP and approved by the building official.

~~36.~~ 25. Replace Section R602.10, including all subsections, with the following:

(Amendments to the wall bracing section omitted as no changes are being made at this time)

~~37.~~ 26. Change Section ~~R613.2~~ R612.2 to read:

~~R613.2~~ R612.2 Window sills. In dwelling units, where the opening of an operable window is located more than 72 inches (1829 mm) above the finished grade or surface below, the lowest part of the clear opening of the window shall be a minimum of 18 inches (457 mm) above the finished floor of the room in which the window is located. ~~Glazing between the floor and 18 inches (457 mm) shall be fixed or have openings through which~~ Operable sections of windows shall not permit openings that allow passage of a 4-inch-diameter (102 mm) sphere cannot pass where such openings are located within 18 inches (457 mm) of the finished floor .

Exceptions:

1. Windows whose openings will not allow a 4-inch-diameter (102 mm) sphere to pass through the opening when the opening is in its largest opened position.

2. Openings that are provided with window fall prevention devices that comply with Section R612.3.

3. Openings that are provided with window guards fall protection devices that comply with ASTM F-2006 or F 2090.

4. Windows that are provided with opening limiting devices that comply with Section R612.4.

~~38.~~ Change Section ~~R806.4~~ and add Table ~~R806.4~~ to read:

~~R806.4 Unvented attic assemblies. Unvented attic assemblies (spaces between the ceiling joists of the top story and the roof rafters) shall be permitted if all the following conditions are met:~~

~~1. The unvented attic space is completely contained within the building thermal envelope.~~

~~2. No interior vapor retarders are installed on the ceiling side (attic floor) of the unvented attic assembly.~~

~~3. Where wood shingles or shakes are used, a minimum 1/4 inch (6 mm) vented air space separates the shingles or shakes and the roofing underlayment above the structural sheathing.~~

~~4. In climate zones 5, 6, 7 and 8, any air impermeable insulation shall be a vapor retarder, or shall have a vapor retarder coating or covering in direct contact with the underside of the insulation.~~

5. Either Items a, b or c shall be met, depending on the air permeability of the insulation directly under the structural roof sheathing.

a. Air impermeable insulation only. Insulation shall be applied in direct contact to the underside of the structural roof sheathing.

b. Air permeable insulation only. In addition to the air permeable installed directly below the structural sheathing, rigid board or sheet insulation shall be installed directly above the structural roof sheathing as specified in Table R806.4 for condensation control.

c. Air impermeable and air permeable insulation. The air impermeable insulation shall be applied in direct contact to the underside of the structural roof sheathing as specified in Table R806.4 for condensation control. The air permeable insulation shall be installed directly under the air impermeable insulation.

Table R806.4 Insulation for Condensation Control	
Climate Zone	Minimum Rigid Board or Air-impermeable Insulation R-value ^a
2B and 3B tile roof only	0 (none required)
1, 2A, 2B, 3A, 3B, 3C	R-5
4C	R-10
4A, 4B	R-15
5	R-20
6	R-25
7	R-30
8	R-35
^a Contributes to but does not supersede Chapter 11 energy requirements.	

39. ~~27.~~ Change Section M1502.6 M1502.4.4.1 to read:

~~M1502.6~~ M1502.4.4.1 Specified length. The maximum length of a clothes dryer the exhaust duct shall not exceed be 35 feet (10 668 mm) from the dryer location to the wall or roof termination connection to the transition duct from the dryer to the outlet terminal . ~~The maximum length of the duct shall be reduced 2.5 feet (762 mm) for each 45-degree (0.8 rad) bend and five feet (1524 mm) for each 90-degree (1.6 rad) bend. The~~ Where fittings are used, the maximum length of the exhaust duct does not include the transition duct shall be reduced in accordance with Table M1502.4.4.1 .

Exceptions:

1. ~~Where the make and model of the clothes dryer to be installed is known and the manufacturer's installation instructions for the dryer are provided to the building official, the maximum length of the exhaust duct, including any transition duct, shall be permitted to be in accordance with the dryer manufacturer's installation instructions.~~

~~2. Where large radius 45-degree (0.8 rad) and 90-degree (1.6 rad) bends are installed, determination of the equivalent length of clothes-dryer exhaust duct for each bend by engineering calculation in accordance with the ASHRAE Fundamentals Handbook shall be permitted.~~

~~40. Change Section M1701.1 to read as follows and delete the remainder of Chapter 17:~~

~~M1701.1 Scope. Solid fuel-burning appliances shall be provided with combustion air, in accordance with the appliance manufacturer's installation instructions. Oil-fired appliances shall be provided with combustion air in accordance with NFPA 31. The methods of providing combustion air in this chapter do not apply to fireplaces, fireplace stoves and direct-vent appliances. The requirements for combustion and dilution air for gas-fired appliances shall be in accordance with Chapter 24.~~

~~41. 28. Add Section M1801.1.1 to read:~~

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

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

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

~~42. Change Section G2411.1 to read:~~

~~G2411.1 Gas pipe bonding. Each above-ground portion of a gas piping system that is likely to become energized shall be electrically continuous and bonded to an effective ground-fault current path. Gas piping shall be considered to be bonded where it is connected to appliances that are connected to the equipment grounding conductor of the circuit supplying that appliance. CSST gas piping systems shall be bonded to the electrical service grounding electrode system at the point where the gas service piping enters the building. The bonding conductor size shall be not less than #6 AWG copper wire or equivalent.~~

~~43. Add Section G2415.17 to read:~~

~~404.17 Isolation. Metallic piping and metallic tubing that conveys fuel gas from an LP-gas storage container shall be provided with an approved dielectric fitting to electrically isolate the underground portion of the pipe or tube from the above-ground portion that enters a building. Such dielectric fitting shall be installed above ground, outdoors.~~

~~29. Add Section G2425.1.1 to read:~~

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

1. Vent or chimney systems are sized in accordance with this code.

2. Vent or chimney systems are clean, free of any obstruction or blockages, defects or deterioration and are in operable condition.

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

44. 30. Change Section P2602.1 to read:

P2602.1 General. The water and drainage system of any building or premises where plumbing fixtures are installed shall be connected to a public or private water supply and a public or private sewer system. As provided for in Section 103.11 of Part I of the Virginia Uniform Statewide Building Code (13VAC5-63) for functional design, water supply sources and sewage disposal systems are regulated and approved by the Virginia Department of Health and the Virginia Department of Environmental Quality.

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

45. 31. Change Section P2903.5 to read:

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

46. 32. Add Section P3002.2.1 to read:

P3002.2.1 Tracer wire. Nonmetallic sanitary sewer piping that discharges to public systems shall be locatable. An insulated copper tracer wire, 18 AWG minimum in size and suitable for direct burial or an equivalent product, shall be utilized. The wire shall be installed in the same trench as the sewer within 12 inches (305 mm) of the pipe and shall be installed from within five feet of the building wall to the point where the building sewer intersects with the public system. At a minimum, one end of the wire shall terminate above grade in an accessible location that is resistant to physical damage, such as with a cleanout or at the building wall.

47. ~~Replace Section P3007, Sumps and Ejectors, with the following:~~

~~Section P3007:~~

~~Sumps and Ejectors:~~

~~P3007.1 Building subdrains. Building subdrains that cannot be discharged to the sewer by gravity flow shall be discharged into a tightly covered and vented sump from which the liquid shall be lifted and discharged into the building gravity drainage system by automatic pumping equipment or other approved method. In other than existing structures, the sump shall not receive drainage from any piping within the building capable of being discharged by gravity to the building sewer.~~

~~P3007.2 Valves required. A check valve and a full open valve located on the discharge side of the check valve shall be installed in the pump or ejector discharge piping between the pump or ejector and the gravity drainage system. Access shall be provided to such valves. Such valves shall be located above the sump cover required by Section P3007.3.2 or, where the discharge pipe from the ejector is below grade, the valves shall be accessibly located outside the sump below grade in an access pit with a removable access cover.~~

~~P3007.3 Sump design. The sump pump, pit and discharge piping shall conform to the requirements of Sections P3007.3.1 through P3007.3.5.~~

~~P3007.3.1 Sump pump. The sump pump capacity and head shall be appropriate to anticipated use requirements.~~

~~P3007.3.2 Sump pit. The sump pit shall be not less than 18 inches (457 mm) in diameter and 24 inches (610 mm) deep, unless otherwise approved. The pit shall be accessible and located such that all drainage flows into the pit by gravity. The sump pit shall be constructed of tile, concrete, steel, plastic or other approved materials. The pit bottom shall be solid and provide permanent support for the pump. The sump pit shall be fitted with a gastight removable cover adequate to support anticipated loads in the area of use. The sump pit shall be vented in accordance with Chapter 31.~~

~~P3007.3.3 Discharge piping. Discharge piping shall meet the requirements of Section P3007.2.~~

~~P3007.3.4 Maximum effluent level. The effluent level control shall be adjusted and maintained to at all times prevent the effluent in the sump from rising to within 2 inches (51 mm) of the invert of the gravity drain inlet into the sump.~~

~~P3007.3.5 Ejector connection to the drainage system. Pumps connected to the drainage system shall connect to the building sewer or shall connect to a wye fitting in the building drain a minimum of 10 feet (3048 mm) from the base of any soil stack, waste stack or fixture drain. Where the discharge line connects into horizontal drainage piping, the connection shall be made through a wye fitting into the top of the drainage piping.~~

~~P3007.4 Sewage pumps and sewage ejectors. A sewage pump or sewage ejector shall automatically discharge the contents of the sump to the building drainage system.~~

~~P3007.5 Macerating toilet systems. Macerating toilet systems shall comply with CSA B45.9 or ASME A112.3.4 and shall be installed in accordance with the manufacturer's installation instructions.~~

P3007.6 Capacity. A sewage pump or sewage ejector shall have the capacity and head for the application requirements. Pumps or ejectors that receive the discharge of water closets shall be capable of handling spherical solids with a diameter of up to and including 2 inches (51 mm). Other pumps or ejectors shall be capable of handling spherical solids with a diameter of up to and including one inch (25.4 mm). The minimum capacity of a pump or ejector based on the diameter of the discharge pipe shall be in accordance with Table 3007.6.

Exceptions:

1. Grinder pumps or grinder ejectors that receive the discharge of water closets shall have a minimum discharge opening of 1.25 inches (32 mm).
2. Macerating toilet assemblies that serve single water closets shall have a minimum discharge opening of 0.75 inch (19 mm).

Table P3007.6 Minimum Capacity of Sewage Pump or Sewage Ejector	
Diameter of Discharge Pipe (inches)	Capacity of Pump or Ejector (gpm)
2	21
2 1/2	30
3	46
For SI: 1 inch = 25.4 mm, 1 gallon per minute = 3.785 L/m	

48. Change the title of Chapter 32 to read:

Chapter 32.

Traps and Storm Drainage.

49. Add Section P3202, Storm Drainage, to read:

Section P3202.

Storm Drainage.

P3202.1 Scope. The provisions of this section shall govern the materials, design, construction and installation of storm drainage.

P3202.2 Subsoil drains. Subsoil drains shall be open jointed, horizontally split or perforated pipe conforming to one of the standards listed in Table P3202.2. Such drains shall not be less than 4 inches (102 mm) in diameter. Where the building is subject to backwater, the subsoil drain shall be protected by an accessibly located backwater valve. Subsoil drains shall not be required to have either a gas tight cover or vent. The sump and pumping system shall comply with Section P3202.3.

Table P3202.2 Subsoil Drain Pipe

Material	Standard
Asbestos-cement pipe	ASTM C 508
Cast iron pipe	ASTM A 74; ASTM A 888; CISPI 301
Polyethylene (PE) plastic pipe	ASTM F 405; CSA B182.1; CSA B182.6; CSA B182.8
Polyvinyl chloride (PVC) plastic pipe (type sewer pipe, PS25, PS50 or PS100)	ASTM D 2729; ASTM F 891; CSA B182.2; CSA B182.4
Stainless steel drainage systems, Type 316L	ASME A112.3.1
Vitrified clay pipe	ASTM C 4; ASTM C 700

~~P3202.3 Pumping system. The sump pump, pit and discharge piping shall conform to Section P3202.3.1 through P3202.3.4.~~

~~P3202.3.1 Pump capacity and head. The sump pump shall be of a capacity and head appropriate to anticipated use requirements.~~

~~P3202.3.2 Sump pit. The sump pit shall not be less than 18 inches (457 mm) in diameter and 24 inches (610 mm) deep, unless otherwise approved. The pit shall be accessible and located such that all drainage flows into the pit by gravity. The sump pit shall be constructed of tile, steel, plastic, cast iron, concrete or other approved material, with a removable cover adequate to support anticipated loads in the area of use. The pit floor shall be solid and provide permanent support for the pump.~~

~~P3202.3.3 Electrical. Electrical outlets shall meet the requirements of Chapters 33 through 42.~~

~~P3202.3.4 Piping. Discharge piping shall meet the requirements of Sections P3002.1, P3002.2,~~

~~P3002.3 and P3003. Discharge piping shall include an accessible full flow check valve. Pipe and fittings shall be the same size as, or larger than, pump discharge tapping.~~

50. Add Section G2425.1.1 to read:

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

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

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

51. ~~33.~~ Add Section E3501.8 E3601.8 to read:

~~E3501.8~~ ~~E3601.8~~ Energizing service equipment. The building official shall give permission to energize the electrical service equipment of a one- or two-family dwelling unit when all of the following requirements have been approved:

1. The service wiring and equipment, including the meter socket enclosure, shall be installed and the service wiring terminated.
2. The grounding electrode system shall be installed and terminated.
3. At least one receptacle outlet on a ground fault protected circuit shall be installed and the circuit wiring terminated.
4. Service equipment covers shall be installed.
5. The building roof covering shall be installed.
6. Temporary electrical service equipment shall be suitable for wet locations unless the interior is dry and protected from the weather.

~~52.~~ Add the following referenced standards to Chapter 43:

Standard reference number	Title	Referenced in code section number
ASTM C4-03	Specification for Clay Drain Tile and Perforated Clay Drain Tile	P3202.3
ASTM C508-00	Specification for Asbestos-Cement Underdrain Pipe	P3202.3
ASTM D2729-96a	Specification for Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings	P3202.3
ASTM E2178-03	Standard Test Method for Air Permeance of Building Materials	R202
ASTM F405-97	Specification for Corrugated Polyethylene (PE) Tubing and Fittings	P3202.3
CSA B182.1-02	Plastic Drain and Sewer Pipe and Pipe Fittings	P3202.3
CSA B182.6-02	Profile Polyethylene Sewer Pipe and Fittings for Leak-Proof Sewer Applications	P3202.3
CSA B182.8-02	Profile Polyethylene Storm Sewer and Drainage Pipe and Fittings	P3202.3

13 VAC 5-63-220. Chapter 4 Special detailed requirements based on use and occupancy.

A. Add Section ~~407.8~~ 407.9 to the IBC to read:

~~407.8~~ 407.9 Special locking arrangement. Means of egress doors shall be permitted to contain locking devices restricting the means of egress in areas in which the clinical needs of the patients require restraint of movement, where all of the following conditions are met:

1. The locks release upon activation of the fire alarm system or the loss of power.
2. The building is equipped with an approved automatic sprinkler system in accordance with Section 903.3.1.1.
3. A manual release device is provided at a nursing station responsible for the area.
4. A key-operated switch or other manual device is provided adjacent to each door equipped with the locking device. Such switch or other device, when operated, shall result in direct interruption of power to the lock -- independent of the control system electronics.
5. All staff shall have keys or other means to unlock the switch or other device or each door provided with the locking device.

B. Add Section ~~407.9~~ 407.10 to the IBC to read:

~~407.9~~ 407.10 Emergency power systems. Emergency power shall be provided for medical life support equipment, operating, recovery, intensive care, emergency rooms, fire detection and alarm systems in any Group I-2 occupancy licensed by the Virginia Department of Health as a hospital, nursing home or hospice facility.

C. Change Section ~~408.2~~ of the IBC to read:

~~408.2 Other occupancies. Buildings or portions of buildings in Group I-3 occupancies where security operations necessitate the locking of required means of egress shall be permitted to be classified as a different occupancy. Occupancies classified as other than Group I-3 shall meet the applicable requirements of this code for that occupancy provided provisions are made for the release of occupants at all times. Where the provisions of this code for occupancies other than Group I-3 are more restrictive than the provisions for Group I-3 occupancies, the Group I-3 occupancy provisions shall be permitted to be used.~~

~~Means of egress from detention and correctional occupancies that traverse other use areas shall, as a minimum, conform to requirements for detention and correctional occupancies.~~

~~Exception: It is permissible to exit through a horizontal exit into other contiguous occupancies that do not conform to detention and correctional occupancy egress provisions but that do comply with requirements set forth in the appropriate occupancy, as long as the occupancy is not a high-hazard use.~~

D. Add a new Section ~~408.3.4~~ to the IBC to read as follows and renumber existing Sections ~~408.3.4~~, ~~408.3.5~~ and ~~408.3.6~~ to become Sections ~~408.3.5~~, ~~408.3.6~~ and ~~408.3.7~~ respectively:

~~408.3.4 Ships ladders. Ships ladders in accordance with Section 1009.12 shall be permitted from facility observation or control rooms.~~

~~E.~~ Change Section 408.3.6 of the IBC to read:

~~408.3.6 Sallyports. A sallyport shall be permitted in a means of egress where there are provisions for continuous and unobstructed passage through the sallyport during an emergency egress condition. A sallyport is a security vestibule with two or more doors where the intended purpose is to prevent continuous and unobstructed passage by allowing the release of only one door at a time.~~

~~F.~~ Add Section 408.3.8 to the IBC to read:

~~408.3.8 Guard tower doors. A hatch or trap door not less than 16 square feet (.929 m²) in area through the floor and having minimum dimensions of not less than two feet (609.6 mm) in any direction shall be permitted to be used to access guard towers.~~

~~G.~~ Add Section 408.5.1 to the IBC to read:

~~408.5.1 Noncombustible shaft openings in communicating floor levels. Where vertical openings are permitted without enclosure protection in accordance with Section 408.5, noncombustible shafts such as plumbing chases shall also be permitted without enclosure protection. Where additional stories are located above or below, the shaft shall be permitted to continue with fire and smoke damper protection provided at the fire resistance rated floor/ceiling assembly between the noncommunicating stories.~~

~~H.~~ Change Section 408.8 of the IBC to read:

~~408.8 Windowless buildings. For the purposes of this section, a windowless building or portion of a building is one with nonopenable windows, windows not readily breakable or without windows. Windowless buildings shall be provided with an engineered smoke control system to provide a tenable environment for exiting from the smoke compartment in the area of fire origin in accordance with Section 909 for each windowless smoke compartment.~~

~~I.~~ Add Section 415.1.1 to the IBC to read:

~~415.1.1 Flammable and combustible liquids. Notwithstanding the provisions of this chapter, the storage, handling, processing, and transporting of flammable and combustible liquids shall be in accordance with the mechanical code and the fire code listed in Chapter 35 of this code. Regulations governing the installation, repair, upgrade, and closure of underground and aboveground storage tanks under the Virginia State Water Control Board regulations 9 VAC 25-91 and 9 VAC 25-580 are adopted and incorporated by reference to be an enforceable part of this code. Where differences occur between the provisions of this code and the incorporated provisions of the State Water Control Board regulations, the provisions of the State Water Control Board regulations shall apply.~~

~~J. D.~~ Add IBC Section 421 ~~424~~ 424 Manufactured Homes and Industrialized Buildings.

~~K. E.~~ Add Section 421.1 ~~424.1~~ 424.1 to the IBC to read:

~~421.1~~ 424.1 General. The provisions of this section shall apply to the installation or erection of manufactured homes subject to the Virginia Manufactured Home Safety Regulations (13 VAC 5-95) and industrialized buildings subject to the Virginia Industrialized Building Safety Regulations (13 VAC 5-91).

~~L. F.~~ Add Section ~~421.2~~ 424.2 to the IBC to read:

~~421.2~~ 424.2 Site work for manufactured homes. The installation of a manufactured home is generally subject to the requirements of the Virginia Manufactured Home Safety Regulations (13 VAC 5-95). Under those regulations, the building official is responsible for assuring that the installation complies with the manufacturer's installation instructions and any special conditions or limitations of use stipulated by the label. To the extent that any aspect of the installation is not provided for in the manufacturer's installation instructions, then the installation shall comply with 24 CFR Part 3285 – Model Manufactured Home Installation Standards. In the case where the manufacturer's installation instructions for a manufactured home are not available, 24 CFR Part 3285 – Model Manufactured Home Installation Standards shall be substituted for the manufacturer's installation instructions. Foundations, stoops, decks, porches, alterations and additions associated with manufactured homes are subject to the requirements of this code and all administrative requirements of this code for permits, inspections and certificates of occupancy are also applicable. The requirements of the IRC shall be permitted to be used for the technical requirements for such construction work. In addition, Appendix E of the IRC entitled, "Manufactured Housing used as Dwellings," shall be an acceptable alternative to this code for construction work associated with the installation of manufactured homes and for additions, alterations and repairs to manufactured homes.

~~M. G.~~ Add Section ~~421.3~~ 424.3 to the IBC to read:

~~421.3~~ 424.3 Wind load requirements for manufactured homes. Manufactured homes shall be anchored to withstand the wind loads established by the federal regulation for the area in which the manufactured home is installed. For the purpose of this code, Wind Zone II of the federal regulation shall include the cities of Chesapeake, Norfolk, Portsmouth, and Virginia Beach.

~~N. H.~~ Add Section ~~421.4~~ 424.4 to the IBC to read:

~~421.4~~ 424.4 Skirting requirements for manufactured homes. As used in this section, "skirting" means a weather-resistant material used to enclose the space from the bottom of the manufactured home to grade. Manufactured homes installed or relocated shall have skirting installed within 60 days of occupancy of the home. Skirting materials shall be durable, suitable for exterior exposures and installed in accordance with the manufacturer's installation instructions. Skirting shall be secured as necessary to ensure stability, to minimize vibrations, to minimize susceptibility to wind damage and to compensate for possible frost heave. Each manufactured home shall have a minimum of one opening in the skirting providing access to any water supply or sewer drain connections under the home. Such openings shall be a minimum of 18 inches (457 mm) in any dimension and not less than three square feet (.28 m²) in area. The access panel or door shall not be fastened in a manner requiring the use of a special tool to open or remove the panel or door. On-site fabrication of the skirting by the owner or installer of the home shall be acceptable, provided that the material meets the requirements of this code.

~~Ø.~~ I. Add Section ~~421.5~~ 424.5 to the IBC to read:

~~421.5~~ 424.5 Site work for industrialized buildings. Site work for the erection and installation of an industrialized building is generally subject to the requirements of the Virginia Industrialized Building Safety Regulations (13 VAC 5-91) and the building official has certain enforcement responsibilities under those regulations. To the extent that any aspect of the erection or installation of an industrialized building is not covered by those regulations, this code shall be applicable. In addition, all administrative requirements of this code for permits, inspections and certificates of occupancy are also applicable. The requirements of the IRC shall be permitted to be used for any construction work that is subject to this code where the industrialized building would be classified as a Group R-5 building.

~~P.~~ J. Add Section ~~421.6~~ 424.6 to the IBC to read:

~~421.6~~ 424.6 Relocated industrialized buildings; alterations and additions. Industrialized buildings constructed prior to January 1, 1972, shall be subject to Section 117 when relocated. Alterations and additions to existing industrialized buildings shall be subject to pertinent provisions of this code. Building officials shall be permitted to require the submission of plans and specifications for the model to aid in the evaluation of the proposed alteration or addition. Such plans and specifications shall be permitted to be submitted in electronic or other available format acceptable to the building official.

13 VAC 5-63-230. Chapter 7 Fire-resistant-rated construction.

A. Add Change Section ~~701.2~~ to 703.6 of the IBC to read:

~~701.2~~ 703.6 Fire-resistance assembly marking. Concealed fire walls, vertical fire separation assemblies, fire barriers, fire partitions and smoke barriers shall be designated above ceilings and on the inside of all ceiling access doors which provide access to such fire rated assemblies by signage having letters no smaller than one inch (25.4 mm) in height. Such signage shall indicate the fire-resistance rating of the assembly and the type of assembly and be provided at horizontal intervals of no more than eight feet (2438 mm).

Note: An example of suggested formatting for the signage would be "ONE HOUR FIRE PARTITION."

B. Delete Sections ~~707.14.1 and 707.14.2~~ of the IBC, including all subsections of Section ~~707.14.2~~ 708.14.1 through 708.14.2.11 .

C. Add ~~exception 4~~ to Section ~~715.4.3~~ of the IBC to read:

~~4. Horizontal sliding doors in smoke barriers that comply with Section 408.3 are permitted in smoke barriers in occupancies in Group I-3.~~

D. Add an ~~exception~~ to Section ~~715.5.4~~ of the IBC to read:

~~Exception: Security glazing protected on both sides by an automatic sprinkler system shall be permitted in doors and windows in smoke barriers in Group I-3 occupancies. Individual panels of~~

~~glazing shall not exceed 1,296 square inches (0.84 m²), shall be in a gasketed frame and installed in such a manner that the framing system will deflect without breaking (loading) glazing before the sprinkler system operates. The sprinkler system shall be designed to wet completely the entire surface of the affected glazing when actuated.~~

E. Change Section 716.5.3 of the IBC to read:

716.5.3 Penetrations of shaft enclosures. Shaft enclosures that are permitted to be penetrated by ducts and air transfer openings shall be protected with approved fire and smoke dampers installed in accordance with their listing.

Exceptions:

1. Fire and smoke dampers are not required where steel exhaust subducts extend at least 22 inches (559 mm) vertically in exhaust shafts provided there is a continuous airflow upward to the outside.
2. Fire dampers are not required where penetrations are tested in accordance with ASTM E 119 as part of the fire-resistance rated assembly.
3. Fire and smoke dampers are not required where ducts are used as part of an approved smoke-control system in accordance with Section 909.
4. Fire and smoke dampers are not required where the penetrations are in parking garage exhaust or supply shafts that are separated from other building shafts by not less than two-hour fire-resistance-rated construction.
5. Smoke dampers are not required where the building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.

13 VAC 5-63-240. Chapter 9 Fire protection systems.

A. Add the following definitions to Section 902 of the IBC to read:

Emergency communication equipment. Emergency communication equipment ; includes, but is not limited to, two-way radio communications, signal booster, bi-directional amplifiers, radiating cable systems or internal multiple antenna, or a combination of the foregoing.

Emergency public safety personnel. Emergency public safety personnel includes firefighters, emergency medical personnel, law-enforcement officers and other emergency public safety personnel routinely called upon to provide emergency assistance to members of the public in a wide variety of emergency situations, including, but not limited to, fires, medical emergencies, violent crimes and terrorist attacks.

B. Change the following definition in Section 902 of the IBC to read:

Automatic fire-extinguishing system. An approved system of devices and equipment which automatically detects a fire and discharges an approved fire-extinguishing agent onto or in the

area of a fire and shall include among other systems an automatic sprinkler system, unless otherwise expressly stated.

C. Change Section 903.2.1.2 of the IBC to read:

903.2.1.2 Group A-2. An automatic sprinkler system shall be provided for Group A-2 occupancies where one of the following conditions exists:

1. The fire area exceeds 5,000 square feet (~~465~~ 464.5 m²);
2. The fire area has an occupant load of 100 or more in night clubs or 300 or more in other Group A-2 occupancies; or
3. The fire area is located on a floor other than ~~the~~ a level of exit discharge servicing such occupancies.

D. Change Item 2 of Section 903.2.1.3 of the IBC to read:

2. In Group A-3 occupancies other than churches, the fire area has an occupant load of 300 or more ; or

E. Change Section ~~903.2.7~~ 903.2.8 of the IBC to read:

~~903.2.7~~ 903.2.8 Group R. An automatic sprinkler system installed in accordance with Section 903.3 shall be provided throughout all buildings with a Group R fire area, except in the following Group R-2 occupancies when the necessary water pressure or volume, or both, for the system is not available:

Exceptions:

1. Buildings which do not exceed two stories, including basements which are not considered as a story above grade, and with a maximum of 16 dwelling units per fire area. Each dwelling unit shall have at least one door opening to an exterior exit access that leads directly to the exits required to serve that dwelling unit.
2. Buildings where all dwelling units are not more than two stories above the lowest level of exit discharge and not more than one story below the highest level of exit discharge of exits serving the dwelling unit and a two-hour fire barrier is provided between each pair of dwelling units. Each bedroom of a dormitory or boarding house shall be considered a dwelling unit under this exception.

F. Add Section 903.3.1.2.2 to the IBC to read:

903.3.1.2.2 Attics. Sprinkler protection shall be provided for attics in buildings of Type III, IV or V construction in Group R-2 occupancies that are designed or developed and marketed to senior citizens 55 years of age or older and in Group I-1 occupancies in accordance with Section 6.7.2 of NFPA 13R.

G. Change Section 903.4.2 of the IBC to read:

903.4.2 Alarms. Approved audible devices shall be connected to every automatic sprinkler system. Such sprinkler water-flow alarm devices shall be activated by water flow equivalent to the flow of a single sprinkler of the smallest orifice size installed in the system. Alarm devices shall be provided on the exterior of the building in an approved location. Where a fire alarm system is installed, actuation of the automatic sprinkler system shall actuate the building fire alarm system. Group R-2 occupancies that contain 16 or more dwelling units or sleeping units, any dwelling unit or sleeping unit two or more stories above the lowest level of exit discharge, or any dwelling unit or sleeping unit more than one story below the highest level of exit discharge of exits serving the dwelling unit or sleeping unit shall provide a manual fire alarm box at an approved location to activate the suppression system alarm.

H. Add an exception to Section 905.2 of the IBC to read:

Exception: The residual pressure of 100 psi for 2-1/2 inch hose connection and 65 psi for 1-1/2 inch hose connection is not required in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 and where the highest floor level is not more than 150 feet above the lowest level of fire department vehicle access.

I. Change Item 1 of Section 906.1 of the IBC to read:

~~906.1 General. Portable fire extinguishers shall be provided in occupancies and locations as required by the International Fire Code.~~

Exceptions:

1. In Group R-2 A, B, E, F, H, I, M, R-1, R-4 and S occupancies.

Exceptions:

1. In Group A, B and E occupancies equipped throughout with quick response sprinklers, portable fire extinguishers shall be required only in locations specified in Items 2 through 6.

2. In Group I-3 occupancies, portable fire extinguishers shall be permitted to be located at staff locations and the access to such extinguishers shall be permitted to be locked.

J. Change Section 907.2.1.1 of the IBC to read:

907.2.1.1 System initiation in Group A occupancies with a occupant load of 1,000 or more and in certain night clubs. Activation of the fire alarm in Group A occupancies with an occupant load of 1,000 or more and in night clubs with an occupant load of 300 or more shall initiate a signal using an emergency voice and alarm communications system in accordance with ~~NFPA 72~~ Section 907.5.2.2 .

Exception: Where approved, the prerecorded announcement is allowed to be manually deactivated for a period of time, not to exceed three minutes, for the sole purpose of allowing a live voice announcement from an approved, constantly attended location.

K. Change Section 907.2.9 of the IBC to read:

~~907.2.9 Group R-2. A manual fire alarm system shall be installed in Group R-2 occupancies.~~

~~Exceptions:~~

~~1. A fire alarm system is not required in buildings not over two stories in height where all dwelling units or sleeping rooms and contiguous attic and crawl spaces are separated from each other and public or common areas by at least one-hour fire partitions and each dwelling unit or sleeping room has an exit directly to a public way, exit court or yard.~~

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

~~2.1. The building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2; and~~

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

L. Change Add an exception to Section 907.9.2 907.5.2.1.1 of the IBC to read:

~~907.9.2 Audible alarms. Audible alarm notification appliances shall be provided and shall sound a distinctive sound that is not to be used for any purpose other than that of a fire alarm. The audible alarm notification appliances shall provide a sound pressure level of 15 decibels (dBA) above the average ambient sound level or 5 dBA above the maximum sound level having a duration of at least 60 seconds, whichever is greater, in every occupied space within the building. The minimum sound pressure levels shall be: 70 dBA in occupancies in Groups R and I-1; 90 dBA in mechanical equipment rooms and 60 dBA in other occupancies. The maximum sound pressure level for audible alarm notification appliances shall be 120 dBA at the minimum hearing distance from the audible appliance. Where the average ambient noise is greater than 105 dBA, visible alarm notification appliances shall be provided in accordance with NFPA 72 and audible alarm notification appliances shall not be required.~~

~~Exceptions:~~

~~1. Visible alarm notification appliances shall be allowed in lieu of audible alarm notification appliances in critical care areas of Group I-2 occupancies.~~

~~2. Exception: Sound pressure levels in Group I-3 occupancies shall be permitted to be limited to only the notification of occupants in the affected smoke compartment.~~

M. L. Change Section 909.6 of the IBC to read:

909.6 Pressurization method. When approved by the building official, the means of controlling smoke shall be permitted by pressure differences across smoke barriers. Maintenance of a tenable environment is not required in the smoke-control zone of fire origin.

~~N.~~ Add M. Change the title of IBC Section ~~913~~ 915 to read:

In-Building Emergency Communications Coverage.

~~O.~~ Add N. Change Section ~~913.1~~ 915.1 of the IBC to read:

~~913.1~~ 915.1 General. In-building emergency communication equipment to allow emergency public safety personnel to send and receive emergency communications shall be provided in new buildings and structures in accordance with this section.

Exceptions:

1. Buildings of Use Groups A-5, I-4, within dwelling units of R-2, R-3, R-4, R-5, and U.
2. Buildings of Type IV and V construction without basements.
3. Above grade single story buildings of less than 20,000 square feet.
4. Buildings or leased spaces occupied by federal, state, or local governments, or the contractors thereof, with security requirements where the building official has approved an alternative method to provide emergency communication equipment for emergency public safety personnel.
5. Where the owner provides technological documentation from a qualified individual that the structure or portion thereof does not impede emergency communication signals.

~~P.~~ O. Add Sections ~~913.2~~ 915.2 , ~~913.2.1~~ 915.2.1 , ~~913.2.2~~ 915.2.2 and ~~913.2.3~~ 915.2.3 to the IBC to read:

~~913.2~~ 915.2 Where required. For localities utilizing public safety wireless communications, new buildings and structures shall be equipped throughout with dedicated infrastructure to accommodate and perpetuate continuous emergency communication.

~~913.2.1~~ 915.2.1 Installation. Radiating cable systems, such as coaxial cable or equivalent, shall be installed in dedicated conduits, raceways, plenums, attics, or roofs, compatible for these specific installations as well as other applicable provisions of this code.

~~913.2.2~~ 915.2.2 Operations. The locality will assume all responsibilities for the installation and maintenance of additional emergency communication equipment. To allow the locality access to and the ability to operate such equipment, sufficient space within the building shall be provided.

~~913.2.3~~ 915.2.3 Inspection. In accordance with Section 113.3, all installations shall be inspected prior to concealment.

~~Q.~~ P. Add Section ~~913.3~~ 915.3 to the IBC to read:

~~913.3~~ 915.3 Acceptance test. Upon completion of installation, after providing reasonable notice to the owner or their representative, emergency public safety personnel shall have the right during normal business hours, or other mutually agreed upon time, to enter onto the property to

conduct field tests to verify that the required level of radio coverage is present at no cost to the owner. Any noted deficiencies shall be provided in an inspection report to the owner or the owner's representative.

13 VAC 5-63-245. Chapter 10 Means of egress.

A. Change Section 1004.3 of the IBC to read:

1004.3 Posting of occupant load. Every room or space that is an assembly occupancy and where the occupant load of that room or space is 50 or more shall have the occupant load of the room or space posted in a conspicuous place, near the main exit or exit access doorway from the room or space. Posted signs shall be of an approved legible permanent design and shall be maintained by the owner or authorized agent.

~~B. Change Exception 3 of Section 1007.3 of the IBC to read:~~

~~3. The clear width of 48 inches (1219 mm) between handrails and the area of refuge is not required at exit stairways in buildings or facilities equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2.~~

~~C. Change Section 1007.4 of the IBC to read:~~

~~1007.4 Elevators. In order to be considered part of an accessible means of egress, an elevator shall comply with the emergency operation and signaling device requirements of Section 2.27 of ASME A17.1. Standby power shall be provided in accordance with Sections 2702 and 3003. The elevator shall be accessed from either an area of refuge complying with Section 1007.6 or a horizontal exit.~~

~~Exceptions:~~

~~1. Elevators are not required to be accessed from an area of refuge or horizontal exit in open parking garages.~~

~~2. Elevators are not required to be accessed from an area of refuge or horizontal exit in buildings and facilities equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2.~~

~~D. Change Section 1007.6.2 of the IBC to read:~~

~~1007.6.2 Separation. Each area of refuge shall be separated from the remainder of the story by a smoke barrier complying with Section 709 or a horizontal exit complying with Section 1021. Each area of refuge shall be designed to minimize the intrusion of smoke.~~

~~Exceptions:~~

~~1. Areas of refuge located within a vertical exit enclosure.~~

2. Areas of refuge where the area of refuge and areas served by the area of refuge are equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2.

~~E. C.~~ Change Item 2 of Section ~~1008.1.8.3~~ 1008.1.9.3 of the IBC to read:

2. In buildings in occupancy Groups B, F, M and S, the main exterior door or doors are permitted to be equipped with key-operated locking devices from the egress side provided:

2.1. The locking device is readily distinguishable as locked.

2.2. A readily visible durable sign is posted on the egress side on or adjacent to the door stating: THIS DOOR TO REMAIN UNLOCKED WHEN BUILDING IS OCCUPIED. The sign shall be in letters one inch (25 mm) high on a contrasting background.

2.3. The use of the key-operated locking device is revokable by the building official for due cause.

~~F. D.~~ Change Section ~~1008.1.8.6~~ 1008.1.9.7 of the IBC to read:

~~1008.1.8.6~~ 1008.1.9.7 Delayed egress locks. Approved, listed, delayed egress locks shall be permitted to be installed on doors serving any occupancy including Group A-3, airport facilities, except Group A, E and H occupancies in buildings which are equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or an approved automatic smoke or heat detection system installed in accordance with Section 907, provided that the doors unlock in accordance with Items 1 through 6 below. A building occupant shall not be required to pass through more than one door equipped with a delayed egress lock before entering an exit.

1. The doors unlock upon actuation of the automatic sprinkler system or automatic fire detection system.

2. The doors unlock upon loss of power controlling the lock or lock mechanism.

3. The door locks shall have the capability of being unlocked by a signal from the fire command center.

4. The initiation of an irreversible process which will release the latch in not more than 15 seconds when a force of not more than 15 pounds (67 N) is applied for 1 second to the release device. Initiation of the irreversible process shall activate an audible signal in the vicinity of the door. Once the door lock has been released by the application of force to the releasing device, relocking shall be by manual means only.

Exception: Where approved, a delay of not more than 30 seconds is permitted.

5. A sign shall be provided on the door located above and within 12 inches (305 mm) of the release device reading: PUSH UNTIL ALARM SOUNDS. DOOR CAN BE OPENED IN 15 SECONDS.

Exception: Where approved, such sign shall read: PUSH UNTIL ALARM SOUNDS. DOOR CAN BE OPENED IN 30 SECONDS.

6. Emergency lighting shall be provided at the door.

~~G. Add Section 1008.1.8.8 to the IBC to read:~~

~~1008.1.8.8 Locking arrangements in correctional facilities. In occupancies in Groups A-3, A-4, B, E, F, I, M and S within penal facilities, doors in means of egress serving rooms or spaces occupied by persons whose movements must be controlled for security reasons shall be permitted to be locked if equipped with egress control devices which shall unlock manually and by at least one of the following means:~~

~~1. Actuation of an automatic fire suppression system required by Section 903.2.~~

~~2. Actuation of a key-operated manual alarm station required by Section 907.2.~~

~~3. A signal from a central control station.~~

E. Delete the exception in Section 1008.1.10 of the IBC.

~~H. F. Add Section 1008.1.10~~ 1008.1.11 to the IBC to read:

~~1008.1.10~~ 1008.1.11 Locking certain residential sliding doors. In dwelling units of Group R-2 buildings, exterior sliding doors which are one story or less above grade, or shared by two dwelling units, or are otherwise accessible from the outside, shall be equipped with locks. The mounting screws for the lock case shall be inaccessible from the outside. The lock bolt shall engage the strike in a manner that will prevent it from being disengaged by movement of the door.

Exception: Exterior sliding doors which are equipped with removable metal pins or charlie bars.

~~I. G. Add Section 1008.1.11~~ 1008.1.12 to the IBC to read:

~~1008.1.11~~ 1008.1.12 Door viewers in certain residential buildings. Entrance doors to dwelling units of Group R-2 buildings shall be equipped with door viewers with a field of vision of not less than 180 degrees.

Exception: Entrance doors having a vision panel or side vision panels.

~~J. H. Change Exception 4~~ 5 of Section 1009.3 of the IBC to read:

~~4. 5.~~ In Group R-3 occupancies; within dwelling units in Group R-2 occupancies; and in Group U occupancies that are accessory to a Group R-3 occupancy or accessory to individual dwelling units in Group R-2 occupancies; the maximum riser height shall be 8.25 inches (210 mm); the minimum tread depth shall be 9 inches (229 mm); the minimum winder tread depth at the walk line shall be 10 inches (254 mm); and the minimum winder tread depth shall be 6 inches (152

mm). A nosing not less than 0.75 inch (19.1 mm) but not more than 1.25 inches (32 mm) shall be provided on stairways with solid risers where the tread depth is less than 11 inches (279 mm).

~~K. Add exception 6 to Section 1009.3 of the IBC to read:~~

~~6. Stairways in penal facilities serving guard towers, observation stations and control rooms not more than 250 square feet (23 m²) in area shall be permitted to have risers not exceeding 8 inches (203 mm) in height and treads not less than 9 inches (229 mm) in depth.~~

~~L. Change Exception 2 of Section 1009.3.3 of the IBC to read:~~

~~2. Solid risers are not required for occupancies in Group I-3. There are no restrictions on size of the opening in the riser.~~

~~M. Add Section 1009.12 to the IBC to read:~~

~~1009.12 Ships ladders. Ships ladders are permitted as an element of a means of egress to and from facility observation or control rooms not more than 250 square feet (23 m²) in area that serves not more than three occupants and for access to unoccupied roofs.~~

~~Ships ladders shall have a maximum projected tread of five inches (127 mm), a minimum tread depth of 8.5 inches (216 mm), a minimum tread width of 15 inches (612 mm) and a maximum riser height of 9.5 inches (241 mm).~~

~~Handrails shall be provided on both sides of ships ladders.~~

~~N. Change Exception 4 of Section 1011.1 of the IBC to read:~~

~~4. Exit signs are not required in dayrooms, sleeping rooms or dormitory spaces in occupancies in Group I-3.~~

~~O. I. Add Exception 5 3 to Item 2 4 of Section 1014.2 of the IBC to read:~~

~~5. 3. A maximum of one exit access is permitted to pass through kitchens, store rooms, closets or spaces used for similar purposes provided such a space is not the only means of exit access.~~

~~P. J. Change Table 1015.1 of the IBC to read:~~

Table 1015.1 Spaces With One Means of Egress <u>Exit or Exit Access Doorway</u>	
Occupancy	Maximum Occupant Load
A, B, Ea, F, M, U	50
H-1, H-2, H-3	3
H-4, H-5, I-1, I-3, I-4, R	10
S	29
a. Day care maximum occupant load is 10.	

Q. K. Change ~~exception~~ Exception 2 of Section 1015.2.1 of the IBC to read:

2. Where a building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2, the separation distance of the exit doors or exit access doorways shall not be less than one-fourth of the length of the maximum overall diagonal dimension of the area served.

R. L. Change ~~Table 1017.1~~ 1018.1 of the IBC to read:

Table 1017.1 <u>1018.1</u> Corridor Fire-Resistance Rating.			
Occupancy	Occupant Load Served By Corridor	Required Fire-Resistance Rating (hours)	
		Without sprinkler system	With sprinkler system ^b
H-1, H-2, H-3	All	1	1
H-4, H-5	Greater than 30	1	1
A, B, E, F, M, S, U	Greater than 30	1	0
R	Greater than 10	1	0.5
I-2 ^a , I-4	All	Not Permitted	0
I-1, I-3	All	Not Permitted	0

a. For requirements for occupancies in Group I-2, see ~~Section~~ Sections 407.2 and 407.3.
b. Buildings equipped throughout with an automatic sprinkler system in accordance with Sections 903.3.1.1 or 903.3.1.2 where allowed.

M. Change Table 1021.2 to read:

Table 1021.2 Stories With One Exit		
Story	Occupancy	Maximum Occupants (or Dwelling Units) Per Floor and Travel Distance
First story or basement	A, B ^d , E ^c , F ^d , M, U, S ^d	50 occupants and 75 feet travel distance
	H-2, H-3	3 occupants and 25 feet travel distance
	H-4, H-5, I, R	10 occupants and 75 feet travel distance
	S ^a	29 occupants and 100 feet travel distance
Second story	B ^b , F, M, S ^a	29 occupants and 75 feet travel distance
	R-2	4 dwelling units and 50 feet travel distance
Third story	R-2 ^c	4 dwelling units and 50 feet travel distance

For SI: 1 foot = 304.8 mm
a. For the required number of exits for parking structures, see Section 1021.1.2.
b. For the required number of exits for air traffic control towers, see Section 412.3.
c. Buildings classified as Group R-2 equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2 and provided with emergency escape and rescue openings in accordance with Section 1029.
d. Group B, F and S occupancies in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 shall have a maximum travel distance of 100 feet.
e. Day care occupancies shall have a maximum occupant load of 10.

13 VAC 5-63-267. Chapter 14 Exterior walls.

Change Section ~~1405.12.2~~ 1405.13.2 of the IBC to read:

~~1405.12.2~~ 1405.13.2 Window sills. In Occupancy Groups R-2 and R-3, one- and two-family and multiple-family dwellings, where the opening of the sill portion of an operable window is located more than 72 inches (1829 mm) above the finished grade or other surface below, the lowest part of the clear opening of the window shall be ~~a minimum of~~ at a height not less than 18 inches (457 mm) above the finished floor surface of the room in which the window is located. Glazing between the floor and a height of 18 inches (457 mm) shall be fixed or have openings ~~such that through which~~ a 4-inch (102 mm) diameter sphere cannot pass ~~through~~.

Exception: Openings that are provided with window guards that comply with ASTM F2006 or F2090.

13 VAC 5-63-290. Chapter 18 Soils and foundations.

Change the exception to Section ~~1803.5~~ 1804.5 of the IBC to read:

Exception: Compacted fill material less than 12 inches (305 mm) in depth need not comply with an approved report, provided it is a natural non-organic material that is not susceptible to swelling when exposed to moisture and it has been compacted to a minimum of 90% Modified Proctor in accordance with ASTM D1557. The compaction shall be verified by a qualified inspector approved by the building official. Material other than natural material may be used as fill material when accompanied by a certification from an RDP and approved by the building official.

13 VAC 5-63-300. Chapter 27 Electrical.

(Subsections A-D unchanged)

E. Change Section 2702.2.17 of the IBC to read:

2702.2.17 Group I-2 and I-3 occupancies. Emergency power shall be provided in accordance with Section ~~407.8~~ 407.10 for Group I-2 occupancies licensed by the Virginia Department of Health as a hospital, nursing or hospice facility. Emergency power shall be provided for doors in Group I-3 occupancies in accordance with Section 408.4.2.

13 VAC 5-63-310. Chapter 28 Mechanical systems.

A. Change Section 2801.1 of the IBC to read:

2801.1 Scope. Mechanical appliances, equipment and systems shall be constructed and installed in accordance with this chapter, the International Mechanical Code and the International Fuel Gas Code. Masonry chimneys, fireplaces and barbecues shall comply with the International Mechanical Code and Chapter 21 of this code.

Exception: This code shall not govern the construction of water heaters, boilers and pressure vessels to the extent which they are regulated by the Virginia Boiler and Pressure Vessel Regulations (16 VAC 25-50). However, the building official may require the owner of a structure to submit documentation to substantiate compliance with those regulations.

~~B. Add IBC Section 2802 Heating Facilities.~~

~~C. Add Section 2802.1 2801.1.1 to the IBC to read:~~

~~2802.1 2801.1.1~~ Required heating in dwelling units. Heating facilities shall be required in every dwelling unit or portion thereof which is to be rented, leased or let on terms, either expressed or implied, to furnish heat to the occupants thereof. The heating facilities shall be capable of maintaining the room temperature at 65°F (18°C) during the period from October 15 to May 1 during the hours between 6:30 a.m. and 10:30 p.m. of each day and not less than 60°F (16°C) during other hours when measured at a point three feet (914 mm) above the floor and three feet (914 mm) from the exterior walls. The capability of the heating system shall be based on the outside design temperature required for the locality by this code.

~~D. C. Add Section 2802.2 2801.1.2 to the IBC to read:~~

~~2802.2 2801.1.2~~ Required heating in nonresidential structures. Heating facilities shall be required in every enclosed occupied space in nonresidential structures. The heating facilities shall be capable of producing sufficient heat during the period from October 1 to May 15 to maintain a temperature of not less than 65°F (18°C) during all working hours. The required room temperature shall be measured at a point three feet (914 mm) above the floor and three feet (914 mm) from the exterior walls.

Processing, storage and operation areas that require cooling or special temperature conditions and areas in which persons are primarily engaged in vigorous physical activities are exempt from these requirements.

~~E. D. Add Section 2803.1 2801.1.3 to the IBC to read:~~

~~2803.1 2801.1.3~~ Changes to the International Mechanical Code. The following ~~changes~~ change shall be made to the International Mechanical Code:

~~1. Add the following definitions to Section 202 of the International Mechanical Code:~~

~~Breathing zone. The region within an occupied space between planes three and 72 inches (75 and 1800 mm) above the floor and more than two feet (600 mm) from the walls of the space or from fixed air conditioning equipment.~~

~~Net occupiable floor area. The floor area of an occupiable space defined by the inside surfaces of its walls, but excluding shafts, column enclosures and other permanently enclosed, inaccessible and unoccupiable areas. Obstructions in the space such as furnishings, display or storage racks and other obstructions, whether temporary or permanent, shall not be deducted from the space area.~~

~~Occupiable space. An enclosed space intended for human activities, excluding those spaces intended primarily for other purposes, such as storage rooms and equipment rooms, that are only intended to be occupied occasionally and for short periods of time.~~

~~Zone. One occupiable space or several occupiable spaces with similar occupancy classification (see Table 403.3), occupant density, zone air distribution effectiveness and zone primary airflow rate per unit area.~~

~~2. Replace Section 403 of the International Mechanical Code to read:~~

~~Section 403.~~

~~Mechanical Ventilation.~~

~~403.1 Ventilation system. Mechanical ventilation shall be provided by a method of supply air and return or exhaust air. The amount of supply air shall be approximately equal to the amount of return and exhaust air. The system shall not be prohibited from producing negative or positive pressure. The system to convey ventilation air shall be designed and installed in accordance with Chapter 6.~~

~~403.2 Outdoor air required. The minimum outdoor airflow rate shall be determined in accordance with Section 403.3. Ventilation supply systems shall be designed to deliver the required rate of outdoor airflow to the breathing zone within each occupiable space.~~

~~Exception: Where the registered design professional demonstrates that an engineered ventilation system design will prevent the maximum concentration of contaminants from exceeding that obtainable by the rate of outdoor air ventilation determined in accordance with Section 403.3, the minimum required rate of outdoor air shall be reduced in accordance with such engineered system design.~~

~~403.2.1 Recirculation of air. The outdoor air required by Section 403.3 shall not be recirculated. Air in excess of that required by Section 403.3 shall not be prohibited from being recirculated as a component of supply air to building spaces, except that:~~

~~1. Ventilation air shall not be recirculated from one dwelling to another or to dissimilar occupancies.~~

~~2. Supply air to a swimming pool and associated deck areas shall not be recirculated unless such air is dehumidified to maintain the relative humidity of the area at 60 percent or less. Air from this area shall not be recirculated to other spaces where 10 percent or more of the resulting supply airstream consists of air recirculated from these spaces.~~

~~3. Where mechanical exhaust is required by Note b in Table 403.3, recirculation of air from such spaces shall be prohibited. All air supplied to such spaces shall be exhausted, including any air in excess of that required by Table 403.3.~~

~~4. Where mechanical exhaust is required by Note h in Table 403.3, mechanical exhaust is required and recirculation is prohibited where 10 percent or more of the resulting supply airstream consists of air recirculated from these spaces.~~

403.2.2 Transfer air. Except where recirculation from such spaces is prohibited by Table 403.3, air transferred from occupiable spaces is not prohibited from serving as makeup air for required exhaust systems in such spaces as kitchens, baths, toilet rooms, elevators and smoking lounges. The amount of transfer air and exhaust air shall be sufficient to provide the flow rates as specified in Section 403.3. The required outdoor airflow rates specified in Table 403.3 shall be introduced directly into such spaces or into the occupied spaces from which air is transferred or a combination of both.

403.3 Outdoor airflow rate. Ventilation systems shall be designed to have the capacity to supply the minimum outdoor airflow rate determined in accordance with this section. The occupant load utilized for design of the ventilation system shall not be less than the number determined from the estimated maximum occupant load rate indicated in Table 403.3. Ventilation rates for occupancies not represented in Table 403.3 shall be those for a listed occupancy classification that is most similar in terms of occupant density, activities and building construction; or shall be determined by an approved engineering analysis. The ventilation system shall be designed to supply the required rate of ventilation air continuously during the period the building is occupied, except as otherwise stated in other provisions of the code.

With the exception of smoking lounges, the ventilation rates in Table 403.3 are based on the absence of smoking in occupiable spaces. Where smoking is anticipated in a space other than a smoking lounge, the ventilation system serving the space shall be designed to provide ventilation over and above that required by Table 403.3 in accordance with accepted engineering practice.

Exception: The occupant load is not required to be determined, based on the estimated maximum occupant load rate indicated in Table 403.3 where approved statistical data document the accuracy of an alternate anticipated occupant density.

Table 403.3 Minimum Ventilation Rates				
Occupancy Classification	People Outdoor Airflow Rate in Breathing Zone Cfm/person	Area Outdoor Airflow Rate in Breathing Zone R_a cfm/ft ^{2a}	Default Occupant Density #/1000 ft ^{2a}	Exhaust Airflow Rate Cfm/ft ^{2a}
Correctional Facilities				
Cells				
without plumbing fixtures	5	0.12	25	-
with plumbing fixtures ^e	5	0.12	25	-
Dining halls (See Food and Beverage Service)	-	-	-	-
Guard stations	5	0.06	15	-
Day room	5	0.06	50	-
Booking/waiting	7.5	0.06	50	-
Dry cleaners, laundries				
Coin-operated dry cleaner	15	-	20	-

Coin-operated laundries	7.5	0.06	20	-
Commercial dry cleaner	30	-	30	-
Commercial laundry	25	-	10	-
Storage pick up	7.5	.12	30	-
Education				
Auditoriums	5	0.06	150	-
Corridors (See Public Spaces)	-	-	-	-
Media center	10	0.12	25	-
Sports locker rooms ^g	-	-	-	0.5
Music/theater/dance	10	0.06	35	-
Smoking lounges ^h	60	-	70	-
Daycare (through age 4)	10	0.18	25	-
Classrooms (ages 5-8)	10	0.12	25	-
Classrooms (age 9 plus)	10	0.12	35	-
Lecture classroom	7.5	0.06	65	-
Lecture hall (fixed seats)	7.5	0.06	150	-
Art classroom ^g	10	0.18	20	0.7
Science laboratories ^g	10	0.18	25	1.0
Wood/metal shop	10	0.18	20	0.5
Computer lab	10	0.12	25	-
Locker/dressing rooms ^g	-	-	-	0.25
Food and beverage service				
Bars, cocktail lounges	7.5	0.18	100	-
Cafeteria, fast food	7.5	0.18	100	-
Dining rooms	7.5	0.18	70	-
Kitchens (cooking) ^b	-	-	-	0.7
Hospitals, nursing and convalescent homes				
Autopsy rooms ^b	-	-	-	0.5
Medical procedure rooms	15	-	20	-
Operating rooms	30	-	20	-
Patient rooms	25	-	10	-
Physical recovery	15	-	20	-
Recovery and ICU	15	-	20	-
Hotels, motels, resorts and dormitories				
Multi-purpose assembly	5	0.06	120	-
Bathroom/Toilet private ^g	-	-	-	25/50 ^f
Bedroom/living room	5	0.06	10	-
Conference/meeting	5	0.06	50	-
Dormitory sleeping areas	5	0.06	20	-
Gambling casinos	7.5	0.18	120	-
Lobbies/pre-function	7.5	0.06	30	-
Offices				
Conference rooms	5	0.06	50	-

Office spaces	5	0.06	5	-
Reception areas	5	0.06	30	-
Telephone/data entry	5	0.06	60	-
Main entry lobbies	5	0.06	10	-
Private dwellings, single and multiple				
Garages, common for multiple units ^b	-	-	-	0.75
Garages, separate for each dwelling ^b	-	-	-	100 cfm/car
Kitchens ^b	-	-	-	25/100 ^t
Living areas ^e	0.35 ACH but not less than 15 cfm/person	-	Based upon number of bedrooms; first bedroom 2; each additional bedroom: 1	-
Toilet rooms and bathrooms ^g	-	-	-	20/50 ^t
Public spaces				
Corridors	-	0.06	-	-
Elevator car	-	-	-	1.0
Shower room (per shower head) ^g	-	-	-	50/20 ^t
Smoking lounges ^b	60	-	70	-
Toilet rooms public ^g	-	-	-	50/70 ^e
Places of religious worship	5	0.06	120	-
Courtrooms	5	0.06	70	-
Legislative chambers	5	0.06	50	-
Libraries	5	0.12	40	-
Museums (children's)	7.5	0.12	40	-
Museums/galleries	7.5	0.12	40	-
Retail stores, sales floors and showroom floors				
Sales (except as below)	7.5	0.12	15	-
Dressing rooms	-	-	-	0.25
Mall common areas	7.5	0.06	40	-
Shipping and receiving	-	0.12	-	-
Smoking lounges ^b	60	-	70	-
Storage rooms	-	0.12	-	-
Warehouses (See Storage)	-	-	-	-
Specialty shops				
Automotive motor fuel dispensing stations ^b	-	-	-	1.5
Barber	7.5	0.06	25	0.5
Beauty and nail salons ^{b,h}	20	0.12	25	0.6

Embalming room ^b	-	-	-	2.0
Pet shops (animal areas) ^b	7.5	0.18	10	0.9
Supermarkets	7.5	0.06	8	-
Sports and amusement				
Disco/dance floors	20	0.06	100	-
Bowling alleys (seating areas)	10	0.12	40	-
Game arcades	7.5	0.18	20	-
Ice arenas without combustion engines	-	0.30	-	0.5
Gym, stadium, arena (play area)	-	0.30	-	-
Spectator areas	7.5	0.06	150	-
Swimming pools (pool and deck area)	-	0.48	-	-
Health club/aerobics room	20	0.06	40	-
Health club/weight room	20	0.06	10	-
Storage				
Repair garages, enclosed parking garages ^{b,d}	-	-	-	0.75
Warehouses	-	0.06	-	-
Theaters				
Auditoriums (See Education)	-	-	-	-
Lobbies	5	0.06	150	-
Stages, studios	10	0.06	70	-
Ticket booths	5	0.06	60	-
Transportation				
Platforms	7.5	0.06	100	-
Transportation waiting	7.5	0.06	100	-
Workrooms				
Bank vaults/safe deposit	5	0.06	5	-
Darkrooms	-	-	-	1.0
Copy, printing rooms	5	0.06	4	0.5
Meat processing ^e	15	-	10	-
Pharmacy (prep. area)	5	0.18	10	-
Photo studios	5	0.12	10	-
Computer (without printing)	5	0.06	4	-
For SI: 1 cubic foot per minute = 0.0004719 m ³ /s, 1 ton = 908 kg, 1 cubic foot per minute per square foot = 0.00508 m ³ /(s m ²), C = ((F) - 32)/1.8, 1 square foot = 0.0929 m ² .				
^a Based upon net occupiable floor area.				
^b Mechanical exhaust required and the recirculation of air from such spaces is prohibited (see				

Section 403.2.1, Item 3).

^eSpaces unheated or maintained below 500°F are not covered by these requirements unless the occupancy is continuous.

^dVentilation systems in enclosed parking garages shall comply with Section 404.

^eRates are per water closet or urinal. The higher rate shall be provided where periods of heavy use are expected to occur, such as, toilets in theaters, schools, and sports facilities. The lower rate shall be permitted where periods of heavy use are not expected.

^fRates are per room unless otherwise indicated. The higher rate shall be provided where the exhaust system is designed to operate intermittently. The lower rate shall be permitted where the exhaust system is designed to operate continuously during normal hours of use.

^eMechanical exhaust is required and recirculation is prohibited except that recirculation shall be permitted where the resulting supply airstream consists of not more than 10 percent air recirculated from these spaces (see Section 403.2.1, Items 2 and 4).

^hFor nail salons, the required exhaust shall include ventilation tables or other systems that capture the contaminants and odors at their source and are capable of exhausting a minimum of 50 cfm per station.

403.3.1 Zone outdoor airflow. The minimum outdoor airflow required to be supplied to each zone shall be determined as a function of occupancy classification and space air distribution effectiveness in accordance with Sections 403.3.1.1 through 403.3.1.3.

403.3.1.1 Breathing zone outdoor airflow. The outdoor airflow rate required in the breathing zone (V_{bz}) of the occupiable space or spaces in a zone shall be determined in accordance with Equation 4-1.

$$V_{bz} = R_p P_z + R_a A_z \text{ (Equation 4-1)}$$

where:

A_z = zone floor area: the net occupiable floor area of the space or spaces in the zone.

P_z = zone population: the number of people in the space or spaces in the zone.

R_p = people outdoor air rate: the outdoor airflow rate required per person from Table 403.3.

R_a = area outdoor air rate: the outdoor airflow rate required per unit area from Table 403.3.

403.3.1.2 Zone air distribution effectiveness. The zone air distribution effectiveness (E_z) shall be determined using Table 403.3.1.2.

Air Distribution Configuration	E_z
Ceiling or floor supply of cool air	1.0 ^f
Ceiling or floor supply of warm air and floor return	1.0
Ceiling supply of warm air and ceiling return	0.8 ^g

Floor supply of warm air and ceiling return	0.7
Makeup air drawn in on the opposite side of the room from the exhaust or return, or both	0.8
Makeup air drawn in near to the exhaust or return location, or both	0.5
<p>For SI: 1 foot = 304.8 mm, 1 foot per minute = 0.00506 m/s, °C = ((°F) - 32)/1.8.</p> <p>a"Cool air" is air cooler than space temperature.</p> <p>b"Warm air" is air warmer than space temperature.</p> <p>c"Ceiling" includes any point above the breathing zone.</p> <p>d"Floor" includes any point below the breathing zone.</p> <p>e"Makeup air" is air supplied or transferred to a zone to replace air removed from the zone by exhaust or return systems.</p> <p>fZone air distribution effectiveness of 1.2 shall be permitted for systems with a floor supply of cool air and ceiling return, provided that low-velocity displacement achieves unidirectional flow and thermal stratification.</p> <p>gZone air distribution effectiveness of 1.0 shall be permitted for systems with a ceiling supply of warm air, provided that supply air temperature is less than 150 F above space temperature and provided that the 150 foot per minute supply air jet reaches to within 4.5 feet of floor level.</p>	

403.3.1.3 Zone outdoor airflow. The zone outdoor airflow rate (V_{oz}), shall be determined in accordance with Equation 4-2.

$$V_{oz} = V_{bz}/E_z \text{ (Equation 4-2)}$$

403.3.2 System outdoor airflow. The outdoor air required to be supplied by each ventilation system shall be determined in accordance with Sections 403.3.2.1 through 403.2.3 as a function of system type and zone outdoor airflow rates.

403.3.2.1 Single zone systems. Where one air handler supplies a mixture of outdoor air and recirculated return air to only one zone, the system outdoor air intake flow rate (V_{ot}) shall be determined in accordance with Equation 4-3.

$$V_{ot} = V_{oz} \text{ (Equation 4-3)}$$

403.3.2.2 100 percent outdoor air systems. Where one air handler supplies only outdoor air to one or more zones, the system outdoor air intake flow rate (V_{ot}) shall be determined using Equation 4-4.

$$V_{ot} = \sum_{\text{all zones}} V_{oz} \text{ (Equation 4-4)}$$

403.3.2.3 Multiple zone recirculating systems. Where one air handler supplies a mixture of outdoor air and recirculated return air to more than one zone, the system outdoor air intake flow rate (V_{ot}) shall be determined in accordance with Sections 403.3.2.3.1 through 403.3.2.3.4.

403.3.2.3.1 Primary Outdoor Air Fraction. The primary outdoor air fraction (Z_p) shall be determined for each zone in accordance with Equation 4-5.

$$Z_p = V_{oz}/V_{pz} \text{ (Equation 4-5)}$$

where:

V_{pz} = Primary airflow: The airflow rate supplied to the zone from the air handling unit at which the outdoor air intake is located. It includes outdoor intake air and recirculated air from that air-handling unit but does not include air transferred or air recirculated to the zone by other means. For design purposes, V_{pz} shall be the zone design primary airflow rate, except for zones with variable air volume supply and V_{pz} shall be the lowest expected primary airflow rate to the zone when it is fully occupied.

403.3.2.3.2 System ventilation efficiency. The system ventilation efficiency (E_v) shall be determined using Table 403.3.2.3.2 or Appendix A of ASHRAE 62.1.

Table 403.3.2.3.2 System Ventilation Efficiency	
Max(Z_p)	E_v
0.15	1.0
0.25	0.9
0.35	0.8
0.45	0.7
0.55	0.6
0.65	0.5
0.75	0.4
<0.75	0.3
aMax(Z_p) is the largest value of Z_p calculated using Equation 4-5 among all the zones served by the system. bInterpolating between table values shall be permitted.	

403.3.2.3.3 Uncorrected outdoor air intake. The uncorrected outdoor air intake flow rate (V_{ou}) shall be determined in accordance with Equation 4-7.

$$V_{ou} = D \sum_{\text{all zones}} R_p P_z + \sum_{\text{all zones}} R_a A_z \text{ (Equation 4-7)}$$

where:

D = Occupant diversity: the ratio of the system population to the sum of the zone populations; determined in accordance with Equation 4-8.

$$D = P_s / \sum_{\text{all zones}} P_z \text{ (Equation 4-8)}$$

where:

P_s = System population: The total number of occupants in the area served by the system. For design purposes, P_s shall be the maximum number of occupants expected to be concurrently in all zones served by the system.

403.3.2.3.4 Outdoor air intake flow rate. The outdoor air intake flow rate (V_{ot}) shall be determined in accordance with Equation 4-9.

$$V_{ot} = V_{ou} / E_v \text{ (Equation 4-9)}$$

~~403.4 Exhaust Ventilation. Exhaust airflow rate shall be provided in accordance with the requirements in Table 403.3. Exhaust makeup air shall be permitted to be any combination of outdoor air, recirculated air and transfer air, except as limited in accordance with Section 403.2.~~

~~403.5 System operation. The minimum flow rate of outdoor air that the ventilation system must be capable of supplying during its operation shall be permitted to be based on the rate per person indicated in Table 403.3 and the actual number of occupants present.~~

~~403.6 Variable air volume system control. Variable air volume air distribution systems, other than those designed to supply only 100 percent outdoor air, shall be provided with controls to regulate the flow of outdoor air. Such control system shall be designed to maintain the flow rate of outdoor air at a rate of not less than that required by Section 403.3 over the entire range of supply air operating rates.~~

~~403.7 Balancing. The ventilation air distribution system shall be provided with means to adjust the system to achieve at least the minimum ventilation airflow rate as required by Sections 403.3 and 403.4. Ventilation systems shall be balanced by an approved method. Such balancing shall verify that the ventilation system is capable of supplying and exhausting the airflow rates required by Sections 403.3 and 403.4.~~

~~3. Change Section 404.2 of the International Mechanical Code to read:~~

~~404.2 Minimum ventilation. Automatic operation of the system shall not reduce the ventilation airflow rate below 0.05 cfm per square foot ($0.00025 \text{ m}^3/\text{s}\cdot\text{m}^2$) of the floor area and the system shall be capable of producing a ventilation rate of 0.75 cfm per square foot ($0.0035 \text{ m}^3/\text{s}\cdot\text{m}^2$) of floor area.~~

~~4. Change Section 504.6.1 of the International Mechanical Code to read:~~

~~504.6.1 Maximum length. The maximum length of a clothes dryer exhaust duct shall not exceed 35 feet (10668 mm) from the dryer location to the outlet terminal. The maximum length of the duct shall be reduced 2 1/2 feet (762 mm) for each 45-degree (0.79 rad) bend and five feet (1524 mm) for each 90-degree (1.6 rad) bend. The maximum length of the exhaust duct does not include the transition duct.~~

~~Exception: Where the make and model of the clothes dryer to be installed is known and the manufacturer's installation instructions for such dryer are provided to the code official, the maximum length of the exhaust duct, including any transition duct, shall be permitted to be in accordance with the dryer manufacturer's installation instructions.~~

~~5. Change Section 507.2.2 of the International Mechanical Code to read:~~

~~507.2.2. Type II hoods. Type II hoods shall be installed where cooking or dishwashing appliances produce heat, steam, or products of combustion and do not produce grease or smoke, such as steamers, kettles, pasta cookers and dishwashing machines.~~

~~Exceptions:~~

~~1. Under counter type commercial dishwashing machines.~~

~~2. A Type II hood is not required for dishwashers and potwashers that are provided with heat and water vapor exhaust systems that are supplied by the appliance manufacturer and are installed in accordance with the manufacturer's instructions.~~

~~3. A single light duty electric convection, bread, retherm, steamer or microwave oven designed for countertop installation. The additional heat and moisture loads generated by such appliances shall be accounted for in the design of the HVAC system.~~

~~4. A Type II hood is not required for the following electrically heated appliances: toasters, steam tables, popcorn poppers, hot dog cookers, coffee makers, rice cookers, egg cookers, holding/warming ovens. The additional heat and moisture loads generated by such appliances shall be accounted for in the design of the HVAC system.~~

~~6. Change Section 701.1 of the International Mechanical Code to read as follows and delete the remainder of Chapter 7:~~

~~701.1 Scope. Solid fuel burning appliances shall be provided with combustion air in accordance with the appliance manufacturer's installation instructions. Oil fired appliances shall be provided with combustion air in accordance with NFPA 31. The methods of providing combustion air in this chapter do not apply to fireplaces, fireplace stoves and direct vent appliances. The requirements for combustion and dilution air for gas fired appliances shall be in accordance with the International Fuel Gas Code.~~

~~7. Add Section 801.1.1 to the International Mechanical Code to read:~~

~~801.1.1 Equipment changes. Upon the replacement or new installation of any fuel-burning appliances or equipment in existing buildings, an inspection or inspections shall be conducted to ensure that the connected vent or chimney systems comply with the following:~~

~~1. Vent or chimney systems are sized in accordance with this code.~~

~~2. Vent or chimney systems are clean, free of any obstruction or blockages, defects or deterioration and are in operable condition.~~

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

~~F. E. Add Section ~~2804.1~~ 2801.1.4 to the IBC to read:~~

~~2804.1 2801.1.4 Changes to the International Fuel Gas Code. The following changes shall be made to the International Fuel Gas Code:~~

~~1. Change Section 301.1 of the International Fuel Gas Code to read:~~

301.1 Scope. This code shall apply to the installation of fuel gas piping systems, fuel gas utilization equipment, and related accessories as follows:

1. Coverage of piping systems shall extend from the point of delivery to the connections with gas utilization equipment. (See "point of delivery.")
2. Systems with an operating pressure of 125 psig (862 kPa gauge) or less.

Piping systems for gas-air mixtures within the flammable range with an operating pressure of 10 psig (69 kPa gauge) or less.

LP-Gas piping systems with an operating pressure of 20 psig (140 kPa gauge) or less.

3. Piping systems requirements shall include design, materials, components, fabrication, assembly, installation, testing and inspection.
4. Requirements for gas utilization equipment and related accessories shall include installation, combustion and ventilation air and venting.

This code shall not apply to the following:

1. Portable LP-Gas equipment of all types that are not connected to a fixed fuel piping system.
2. Installation of farm equipment such as brooders, dehydrators, dryers, and irrigation equipment.
3. Raw material (feedstock) applications except for piping to special atmosphere generators.
4. Oxygen-fuel gas cutting and welding systems.
5. Industrial gas applications using gases such as acetylene and acetylenic compounds, hydrogen, ammonia, carbon monoxide, oxygen, and nitrogen.
6. Petroleum refineries, pipeline compressor or pumping stations, loading terminals, compounding plants, refinery tank farms, and natural gas processing plants.
7. Integrated chemical plants or portions of such plants where flammable or combustible liquids or gases are produced by chemical reactions or used in chemical reactions.
8. LP-Gas installations at utility gas plants.
9. Liquefied natural gas (LNG) installations.
10. Fuel gas piping in power and atomic energy plants.
11. Proprietary items of equipment, apparatus, or instruments such as gas generating sets, compressors, and calorimeters.
12. LP-Gas equipment for vaporization, gas mixing, and gas manufacturing.

13. Temporary LP-Gas piping for buildings under construction or renovation that is not to become part of the permanent piping system.

14. Installation of LP-Gas systems for railroad switch heating.

15. Installation of LP-Gas and compressed natural gas (CNG) systems on vehicles.

16. Except as provided in Section 401.1.1, gas piping, meters, gas pressure regulators, and other appurtenances used by the serving gas supplier in the distribution of gas, other than undiluted LP-Gas.

17. Building design and construction, except as specified herein.

2. ~~Change Section 310.1 of the International Fuel Gas Code to read:~~

~~310.1 Gas pipe bonding. Each aboveground portion of a gas piping system that is likely to become energized shall be electrically continuous and bonded to an effective ground fault current path. Gas piping shall be considered to be bonded where it is connected to appliances that are connected to the equipment grounding conductor of the circuit supplying that appliance. CSST gas piping systems shall be bonded to the electrical service grounding electrode system at the point where the gas service piping enters the building. The bonding conductor size shall be not less than #6 AWG copper wire or equivalent.~~

3. ~~Add Section 404.8.3~~ 404.9.3 to the International Fuel Gas Code to read:

~~404.8.3~~ 404.9.3 Coating application. Joints in gas piping systems shall not be coated prior to testing and approval.

4. ~~Add Section 404.17 to the International Fuel Gas Code to read:~~

~~404.17 Isolation. Metallic piping and metallic tubing that conveys fuel gas from an LP-gas storage container shall be provided with an approved dielectric fitting to electrically isolate the underground portion of the pipe or tube from the aboveground portion that enters a building. Such dielectric fitting shall be installed above ground, outdoors.~~

5. ~~3.~~ 3. Add Section 501.1.1 to the International Fuel Gas Code to read:

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

1. Vent or chimney systems are sized in accordance with this code.

2. Vent or chimney systems are clean, free of any obstruction or blockages, defects or deterioration and are in operable condition.

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

13 VAC 5-63-320. Chapter 29 Plumbing systems.

A. Change Section 2901.1 of the IBC to read:

2901.1 Scope. The provisions of this chapter and the International Plumbing Code shall govern the design and installation of all plumbing systems and equipment, except that as provided for in Section 103.11 for functional design, water supply sources and sewage disposal systems are regulated and approved by the Virginia Department of Health and the Virginia Department of Environmental Quality. The approval of pumping and electrical equipment associated with such water supply sources and sewage disposal systems shall, however, be the responsibility of the building official.

Note: See also the Memorandum of Agreement in the "Related Laws Package," which is available from DHCD.

B. Add Section 2901.1.1 to the IBC to read:

2901.1.1 Changes to the International Plumbing Code. The following changes shall be made to the International Plumbing Code:

1. Change Section 310.4 to read:

~~310.4 Water closet compartment. Each water closet utilized by the public or employees shall occupy a separate compartment with walls or partitions and a door enclosing the fixtures to ensure privacy.~~

Exceptions:

~~1. Water closet compartments shall not be required in a single-occupant toilet room with a lockable door.~~

~~2. Toilet rooms located in day care and child care facilities and containing two or more water closets shall be permitted to have one water closet without an enclosing compartment.~~

~~3. Water closet compartments or partitions shall not be required in toilet facilities for inmates in I-3 occupancies.~~

~~2. Delete Sections 311 and 311.1.~~

3. Change Category 5 of Table 403.1 to read:

No.	Classification	Occupancy	Description	Water Closets (Urinals see Section 419.2)	Lavatories	Bathtubs/ Showers	Drinking Fountain (see	Other

				Male	Female	Male	Female		Section 410.1)	
5	Institutional	I-3	Prisons ^b	1 per cell		1 per cell		1 per 15	1 per 100	-
		I-3	Reformatories, detention centers, and correctional centers ^b	1 per 15		1 per 15		1 per 15	1 per 100	-
		I-3	Employees	1 per 25		1 per 35		-	1 per 100	-

4. 2. Delete Section 701.9.

5. 3. Add Section 703.6 to read:

~~703.6 Nonmetallic building sewer location~~ Tracer wire . Nonmetallic sanitary sewer piping installed and located within six feet (1829 mm) of finished grade that discharges to public systems shall be locatable. An insulated copper tracer wire, 18 AWG minimum in size and suitable for direct burial or an equivalent product, shall be utilized. The wire shall be installed in the same trench as the sewer within 12 inches (305 mm) of the pipe and shall be installed to within five feet (1524 mm) of the building wall to the point where the building sewer intersects with the public system. ~~The ends~~ At a minimum, one end of the wire shall terminate above grade in an accessible location that is ~~not subject~~ resistant to physical damage, such as with a cleanout or at the building wall. ~~Only one accessible location is required to be provided for the wire terminations on either end of each sewer installation.~~

13 VAC 5-63-330. Chapter 30 Elevators and conveying equipment.

A. Change Section 3002.4 of the IBC to read:

3002.4 Elevator car to accommodate ambulance stretcher. Where elevators are provided in buildings four or more stories above ~~, or four or more stories below,~~ grade plane ~~or four or more stories below grade plane~~ , at least one elevator shall be provided for fire department emergency access to all floors. The elevator car shall be of such a size and arrangement to accommodate a an ambulance stretcher 24-inch 24 inches by 84-inch 84 inches (610 mm by 2134 mm) ~~ambulance stretcher with not less than 5-inch (127 mm) radius corners,~~ in the horizontal, open position and shall be identified by the international symbol for emergency medical services (star of life). The symbol shall not be less than three inches (76 mm) high and shall be placed inside on both sides of the hoistway door frame on the designated and alternate landing floors required to be established by ASME A17.1.

Exception: Elevators in multistory dwelling units or guest rooms.

B. Add Section 3006.7 to the IBC to read:

3006.7 Machine-room-less designs. Where machine-room-less designs are utilized they shall comply with the provisions of ASME A17.1 and incorporate the following:

1. Where the elevator car-top will be used as a work platform, it shall be equipped with permanently installed guards on all open sides. Guards shall be permitted to be of collapsible design, but otherwise must conform to all applicable requirements of this code for guards.
2. Where the equipment manufacturer's procedures for machinery removal and replacement depend on overhead structural support or lifting points, such supports or lifting points shall be permanently installed at the time of initial equipment installation.
3. Where the structure that the elevator will be located in is required to be fully sprinklered by this code, the hoistway that the elevator machine is located in shall be equipped with a fire suppression system as a machine room in accordance with NFPA 13. Smoke detectors for the automatic initiation of Phase I Emergency Recall Operation, and heat detectors or other approved devices that automatically disconnect the main line power supply to the elevators, shall be installed within the hoistway.

13 VAC 5-63-335. Chapter 31 Special construction.

A. Change Section 3109 to read:

Section 3109. Swimming Pools, Swimming Pool Enclosures and Safety Devices

B. Change Section 3109.3 to read:

3109.3 Public swimming pools. Public swimming pools shall be designed and constructed in conformance with ANSI/NSPI-1 or ANSI/NSPI-2, as applicable, and shall be completely enclosed by a fence at least four feet (1290 mm) in height or a screen enclosure. Openings in the fence shall not permit the passage of a 4-inch-diameter (102 mm) sphere. The fence or screen enclosure shall be equipped with self-closing and self-latching gates.

13 VAC 5-63-340. Chapter 33 Safeguards during construction.

Delete IBC Sections 3305 and 3305.1.

13 VAC 5-63-350. Chapter 34 Existing structures.

A. Change Section 3401.1 of the IBC to read:

3401.1 Scope. The provisions of this chapter and the applicable requirements of Chapter 1 shall control the alteration, repair, addition and change of occupancy of existing structures.

B. Delete IBC Sections 3401.2 and , 3401.3 , 3401.4 and 3401.5 .

C. Delete IBC Section ~~Sections~~ Sections 3403 , 3404, 3405 and 3406 .

D. Change Section ~~3405.1~~ 3407.1 of the IBC to read:

~~3405.1~~ 3407.1 Standards for replacement glass. In accordance with § 36-99.2 of the Code of Virginia, any replacement glass installed in buildings constructed prior to the first edition of the

USBC shall meet the quality and installation standards for glass installed in new buildings as are in effect at the time of installation. In addition, as a requirement of this code, the installation or replacement of glass in buildings constructed under any edition of the USBC shall be as required for new installations.

E. Delete IBC Section ~~3406~~ 3408 .

F. Delete IBC Section ~~3408~~ 3410 .

G. Change Section ~~3410.2~~ 3412.2 of the IBC to read:

~~3410.2~~ 3412.2 Applicability. When specifically requested by an owner or an owner's agent in structures where there is work involving additions, alterations or changes of occupancy, the provisions in Sections ~~3410.2.1~~ 3412.2.1 through ~~3410.2.5~~ 3412.2.5 shall apply to existing occupancies that will continue to be, or are proposed to be, in Groups A, B, E, F, M, R, S and U. These provisions shall not apply to buildings with occupancies in Group H or I.

H. Add an exception to Section ~~3410.2.1~~ 3412.2.1 of the IBC to read:

Exception: Plumbing, mechanical and electrical systems in buildings undergoing a change of occupancy shall be subject to any applicable requirements of Section 103.3 of this code.

I. Add IBC Section ~~3411~~ 3413 Retrofit Requirements.

J. Add Section ~~3411.1~~ 3413.1 to the IBC to read:

~~3411.1~~ 3413.1 Scope. In accordance with Section 103.7 and as setout herein, the following buildings are required to be provided with certain fire protection equipment or systems or other retrofitted components.

K. Add Section ~~3411.2~~ 3413.2 to the IBC to read:

~~3411.2~~ 3413.2 Smoke detectors in colleges and universities. In accordance with Section 36-99.3 of the Code of Virginia, college and university buildings containing dormitories for sleeping purposes shall be provided with battery-powered or AC-powered smoke detector devices installed therein in accordance with this code in effect on July 1, 1982. All public and private college and university dormitories shall have installed such detectors regardless of when the building was constructed. The chief administrative office of the college or university shall obtain a certificate of compliance with the provisions of this subsection from the building official of the locality in which the college or university is located or in the case of state-owned buildings, from the Director of the Virginia Department of General Services. The provisions of this section shall not apply to any dormitory at a state-supported military college or university which is patrolled 24 hours a day by military guards.

L. Add Section ~~3411.3~~ 3413.3 to the IBC to read:

~~3411.3~~ 3413.3 Smoke detectors in certain juvenile care facilities. In accordance with § 36-99.4 of the Code of Virginia, battery-powered or AC-powered smoke detectors shall be installed in all

local and regional detention homes, group homes, and other residential care facilities for children and juveniles which are operated by or under the auspices of the Virginia Department of Juvenile Justice, regardless of when the building was constructed, by July 1, 1986, in accordance with the provisions of this code that were in effect on July 1, 1984. Administrators of such homes and facilities shall be responsible for the installation of the smoke detector devices.

M. Add Section ~~3411.4~~ 3413.4 to the IBC to read:

~~3411.4~~ 3413.4 Smoke detectors for the deaf and hearing-impaired. In accordance with Section 36-99.5 of the Code of Virginia, smoke detectors providing an effective intensity of not less than 100 candela to warn a deaf or hearing-impaired individual shall be provided, upon request by the occupant to the landlord or proprietor, to any deaf or hearing-impaired occupant of any of the following occupancies, regardless of when constructed:

1. All dormitory buildings arranged for the shelter and sleeping accommodations of more than 20 individuals;
2. All multiple-family dwellings having more than two dwelling units, including all dormitories, boarding and lodging houses arranged for shelter and sleeping accommodations of more than five individuals; or
3. All buildings arranged for use of one-family or two-family dwelling units.

A tenant shall be responsible for the maintenance and operation of the smoke detector in the tenant's unit.

A hotel or motel shall have available no fewer than one such smoke detector for each 70 units or portion thereof, except that this requirement shall not apply to any hotel or motel with fewer than 35 units. The proprietor of the hotel or motel shall post in a conspicuous place at the registration desk or counter a permanent sign stating the availability of smoke detectors for the hearing impaired. Visual detectors shall be provided for all meeting rooms for which an advance request has been made.

N. Add Sections ~~3411.5~~ 3413.5 , ~~3411.5.1~~ 3413.5.1 and ~~3411.5.2~~ 3413.5.2 to the IBC to read:

~~3411.5~~ 3413.5 Assisted living facilities (formerly known as adult care residences or homes for adults). Existing assisted living facilities licensed by the Virginia Department of Social Services shall comply with this section.

~~3411.5.1.~~ 3413.5.1 Fire protective signaling system and fire detection system. A fire protective signaling system and an automatic fire detection system meeting the requirements of the USBC, Volume I, 1987 Edition, Third Amendment, shall be installed in assisted living facilities by August 1, 1994.

Exception: Assisted living facilities that are equipped throughout with a fire protective signaling system and an automatic fire detection system.

~~3411.5.2.~~ 3413.5.2 Single and multiple station smoke detectors. Battery or AC-powered single and multiple station smoke detectors meeting the requirements of the USBC, Volume I, 1987 Edition, Third Amendment, shall be installed in assisted living facilities by August 1, 1994.

Exception: Assisted living facilities that are equipped throughout with single and multiple station smoke detectors.

O. Add Section ~~3411.6~~ 3413.6 to the IBC to read:

~~3411.6~~ 3413.6 Smoke detectors in buildings containing dwelling units. AC-powered smoke detectors with battery backup or an equivalent device shall be required to be installed to replace a defective or inoperative battery-powered smoke detector located in buildings containing one or more dwelling units or rooming houses offering to rent overnight sleeping accommodations, when it is determined by the building official that the responsible party of such building or dwelling unit fails to maintain battery-powered smoke detectors in working condition.

P. Add Section ~~3411.7~~ 3413.7 to the IBC to read:

~~3411.7~~ 3413.7 Fire suppression, fire alarm and fire detection systems in nursing homes and facilities. Fire suppression systems as required by the edition of this code in effect on October 1, 1990, shall be installed in all nursing facilities licensed by the Virginia Department of Health by January 1, 1993, regardless of when such facilities or institutions were constructed. Units consisting of certified long-term care beds located on the ground floor of general hospitals shall be exempt from the requirements of this section.

Fire alarm or fire detector systems, or both, as required by the edition of this code in effect on October 1, 1990, shall be installed in all nursing homes and nursing facilities licensed by the Virginia Department of Health by August 1, 1994.

Q. Add Section ~~3411.8~~ 3413.8 to the IBC to read:

~~3411.8~~ 3413.8 Fire suppression systems in hospitals. Fire suppression systems shall be installed in all hospitals licensed by the Virginia Department of Health as required by the edition of this code in effect on October 1, 1995, regardless of when such facilities were constructed.

R. Add Section ~~3411.9~~ 3413.9 to the IBC to read:

~~3411.9~~ 3413.9 Identification of handicapped parking spaces by above grade signs. All parking spaces reserved for the use of handicapped persons shall be identified by above grade signs, regardless of whether identification of such spaces by above grade signs was required when any particular space was reserved for the use of handicapped persons. A sign or symbol painted or otherwise displayed on the pavement of a parking space shall not constitute an above grade sign. Any parking space not identified by an above grade sign shall not be a parking space reserved for the handicapped within the meaning of this section. All above grade handicapped parking space signs shall have the bottom edge of the sign no lower than four feet (1219 mm) nor higher than seven feet (2133 mm) above the parking surface. Such signs shall be designed and constructed in accordance with the provisions of Chapter 11 of this code. All disabled parking signs shall include the following language: PENALTY, \$100-500 Fine, TOW-AWAY ZONE. Such

language may be placed on a separate sign and attached below existing above grade disabled parking signs, provided that the bottom edge of the attached sign is no lower than four feet above the parking surface.

S. Add Section ~~3411.10~~ 3413.10 to the IBC to read:

~~3411.10~~ 3413.10 Smoke detectors in hotels and motels. Smoke detectors shall be installed in hotels and motels as required by the edition of VR 394-01-22, USBC, Volume II, in effect on March 1, 1990, by the dates indicated, regardless of when constructed.

T. Add Section ~~3411.11~~ 3413.11 to the IBC to read:

~~3411.11~~ 3413.11 Sprinkler systems in hotel and motels. By September 1, 1997, an automatic sprinkler system shall be installed in hotels and motels as required by the edition of VR 394-01-22, USBC, Volume II, in effect on March 1, 1990, regardless of when constructed.

U. Add Section ~~3411.12~~ 3413.12 to the IBC to read:

~~3411.12~~ 3413.12 Fire suppression systems in dormitories. An automatic fire suppression system shall be provided throughout all buildings having a Group R-2 fire area which are more than 75 feet (22,860 mm) or six stories above the lowest level of exit discharge and which are used, in whole or in part, as a dormitory to house students by any public or private institution of higher education, regardless of when such buildings were constructed, in accordance with the edition of this code in effect on August 20, 1997, and the requirements for sprinkler systems under the edition of the NFPA 13 standard referenced by that code. The automatic fire suppression system shall be installed by September 1, 1999. The chief administrative office of the college or university shall obtain a certificate of compliance from the building official of the locality in which the college or university is located or in the case of state-owned buildings, from the Director of the Virginia Department of General Services.

Exceptions:

1. Buildings equipped with an automatic fire suppression system in accordance with Section 903.3.1.1 or the 1983 or later editions of NFPA 13.

2. Any dormitory at a state-supported military college or university which is patrolled 24 hours a day by military guards.

3. Application of the requirements of this section shall be modified in accordance with the following:

3.1. Building systems, equipment or components other than the fire suppression system shall not be required to be added or upgraded except as necessary for the installation of the fire suppression system and shall only be required to be added or upgraded where the installation of the fire suppression system creates an unsafe condition.

3.2. Residential sprinklers shall be used in all sleeping rooms. Other sprinklers shall be quick response or residential unless deemed unsuitable for a space. Standard response sprinklers shall be used in elevator hoist ways and machine rooms.

3.3. Sprinklers shall not be required in wardrobes in sleeping rooms that are considered part of the building construction or in closets in sleeping rooms, when such wardrobes or closets (i) do not exceed 24 square feet (2.23 m²) in area, (ii) have the smallest dimension less than 36 inches (914 mm), and (iii) comply with all of the following:

3.3.1. A single station smoke detector monitored by the building fire alarm system is installed in the room containing the wardrobe or closet that will activate the general alarm for the building if the single station smoke detector is not cleared within five minutes after activation.

3.3.2. The minimum number of sprinklers required for calculating the hydraulic demand of the system for the room shall be increased by two and the two additional sprinklers shall be corridor sprinklers where the wardrobe or closet is used to divide the room. Rooms divided by a wardrobe or closet shall be considered one room for the purpose of this requirement.

3.3.3. The ceiling of the wardrobe, closet or room shall have a fire resistance rating of not less than 1/2 hour.

3.4. Not more than one sprinkler shall be required in bathrooms within sleeping rooms or suites having a floor area between 55 square feet (5.12 m²) and 120 square feet (11.16 m²) provided the sprinkler is located to protect the lavatory area and the plumbing fixtures are of a noncombustible material.

3.5. Existing standpipe residual pressure shall be permitted to be reduced when the standpipe serves as the water supply for the fire suppression system provided the water supply requirements of NFPA 13-94 are met.

3.6. Limited service controllers shall be permitted for fire pumps when used in accordance with their listing.

3.7. Where a standby power system is required, a source of power in accordance with Section 701-11 (d) or 701-11 (e) of NFPA 70—96 shall be permitted.

V. Add Section ~~3411.13~~ 3413.13 to the IBC to read:

~~3411.13~~ 3413.13 Fire extinguishers and smoke detectors in SRCF's. SRCF's shall be provided with at least one approved type ABC portable fire extinguisher with a minimum rating of 2A10BC installed in each kitchen. In addition, SRCF's shall provide at least one approved and properly installed battery operated smoke detector outside of each sleeping area in the vicinity of bedrooms and bedroom hallways and on each additional floor.

W. Add Section ~~3411.14~~ 3413.14 to the IBC to read:

~~3411.14~~ 3413.14 Smoke detectors in adult day care centers. Battery-powered or AC-powered smoke detector devices shall be installed in all adult day care centers licensed by the Virginia

Department of Social Services, regardless of when the building was constructed. The location and installation of the smoke detectors shall be determined by the provisions of this code in effect on October 1, 1990. The licensee shall obtain a certificate of compliance from the building official of the locality in which the center is located, or in the case of state-owned buildings, from the Director of the Virginia Department of General Services.

X. Add Section ~~3411.15~~ 3413.15 to the IBC to read:

~~3411.15~~ 3413.15 Posting of occupant load. Every room or space that is an assembly, occupancy, and where the occupant load of that room or space is 50 or more, shall have the occupant load of the room or space as determined by the building official posted in a conspicuous place, near the main exit or exit access doorway from the room or space. Posted signs shall be of an approved legible permanent design and shall be maintained by the owner or authorized agent.

13 VAC 5-63-360. Chapter 35 Referenced standards.

Change the referenced standards in Chapter 35 of the IBC as follows (standards not shown remain the same):

Standard reference number	Title	Referenced in code section number
ANSI/NSPI-1 2003	American National Standard for Public Swimming Pools	3109.3
ANSI/NSPI-2 1999	American National Standard for Public Spas	3109.3
ASTM E329-02	Standard Specification for Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction	1703.1, 1703.1.3
NFPA 13-07	Installation of Sprinkler Systems	707.2, 903.3.1.1, 903.3.2, 903.3.5.1.1, 903.3.5.2, 904.11, 905.3.4, 907.8, 3104.5, 3104.9
NFPA 13D-07	Installation of Sprinkler Systems in One and Two Family Dwellings and Manufactured Homes	903.3.1.3, 903.3.5.1.1
NFPA 13R-07	Installation of Sprinkler Systems in Residential Occupancies Up to and Including Four Stories in Height	903.3.1.2, 903.3.5.1.1, 903.3.5.1.2, 903.4
NFPA 14-07	Installation of Standpipe and Hose System	905.2, 905.3.4, 905.4.2, 905.8
NFPA 70-05	National Electrical Code	2701.1
NFPA 72-07	National Fuel Alarm Code	901.6, 903.4.1, 904.3.5, 907.2, 907.2.1.1, 907.2.10, 907.2.10.4, 907.2.11.2, 907.2.11.3,

		907.2.12.2.3, 907.2.12.3, 907.4, 907.5, 907.9.2, 907.10, 907.14, 907.16, 907.17, 911.1, 3006.5
NFPA 704-07	Standard System for the Identification of the Hazards of Materials for Emergency Response	414.7.2, 415.2

DEPT. OF HOUSING AND COMMUNITY DEVELOPMENT REGULATORY CHANGE FORM

(Use this form to submit changes to building and fire codes)

Address to submit to: DHCD, the Jackson Center 501 North Second Street Richmond, VA 23219-1321 Tel. No. (804) 371 – 7150 Fax No. (804) 371 – 7092 Email: bhcd@dhcd.state.va.us		Document No. _____ Committee Action: _____ BHCD Action: _____
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Submitted by: John Catlett Representing: City of Alexandria
Address: 301 King Street, Alexandria, Va, 22314 Phone No.: (703.838.4360)
Regulation Title: Virginia New Construction Code Section No(s): 102.3

Proposed Change:

102.3 Exemptions. The following are exempt from this code:

1. Equipment and related wiring, and poles and towers supporting the related wiring installed by a provider of publicly regulated utility service or a franchised cable television operator and electrical equipment and related wiring used for radio, broadcast or cable television, telecommunications or information service transmission. The exemption shall apply only if under applicable federal and state law the ownership and control of the equipment and wiring is by the service provider or its affiliates. Such exempt equipment and wiring shall be located on either public rights-of-way or private property for which the service provider has rights of occupancy and entry; however, the structures, including their service equipment, housing or supporting such exempt equipment and wiring shall be subject to the USBC. The installation of equipment and wiring exempted by this section shall not create an unsafe condition prohibited by the USBC.

Supporting Statement: Adds clarity to the practice already in place in most localities that support poles and towers are not subject to the USBC. This issue has been raised in some communities over the past several years.

DEPT. OF HOUSING AND COMMUNITY DEVELOPMENT REGULATORY CHANGE FORM

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Submitted by: John Callett Representing: City of Alexandria
Address: 301 King Street, Alexandria, Va, 22314 Phone No.: (703.838.4360)
Regulation Title: Virginia New Construction Code Section No(s): 103.3

Proposed Change:

103.3 Change of occupancy. No change shall be made in the existing occupancy classification of any structure when the current USBC requires a greater degree of accessibility, structural strength, fire protection, means of egress, ventilation or sanitation. When such a greater degree is required, the owner or the owner's agent shall make written application to the local building department for a new certificate of occupancy and shall obtain the new certificate of occupancy prior to the use of the structure under the new occupancy classification. When impractical to achieve compliance with this code for the new occupancy classification, the building official shall consider modifications upon application and as provided for in Section 106.3.

Supporting Statement: IBC Code section 3409.4 states that certain accessibility features be required at a change of use. The current addition of the USBC does not recognize accessibility as a trigger requirement for a change of use.

The requirements from the 2006 IBC are as follows:

3409.4 Change of occupancy. Existing buildings, or portions thereof, that undergo a change of group or occupancy shall have all of the following accessible features:

1. At least one accessible building entrance.
2. At least one accessible route from an accessible building entrance to primary function areas.
3. Signage complying with Section 1110.
4. Accessible parking, where parking is being provided.
5. At least one accessible passenger loading zone, when loading zones are provided.
6. At least one accessible route connecting accessible parking and accessible passenger loading zones to an accessible entrance.

Where it is technically infeasible to comply with the new construction standards for any of these requirements for a change of group or occupancy, the above items shall conform to the requirements to the maximum extent technically feasible. Change of group or occupancy that incorporates any alterations or additions shall comply with this section and Sections 3409.5, 3409.6, 3409.7 and 3409.8.

DEPT. OF HOUSING AND COMMUNITY DEVELOPMENT REGULATORY CHANGE FORM

(Use this form to submit changes to building and fire codes)

<p>Address to submit to:</p> <p>DHCD, the Jackson Center 501 North Second Street Richmond, VA 23219-1321</p> <p>Tel. No. (804) 371 – 7150 Fax No. (804) 371 – 7092 Email: bhcd@dhcd.state.va.us</p>		<p>Document No. _____</p> <p>Committee Action: _____</p> <p>BHCD Action: _____</p>
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Submitted by: John Catlett Representing: City of Alexandria

Address: 301 King Street, Alexandria, Va, 22314 Phone No.: (703.838.4360)

Regulation Title: Virginia New Construction Code Section No(s): 103.5

Proposed Change:

103.5 Reconstruction, alteration or repair. The following criteria is applicable to reconstruction, alteration or repair of buildings or structures:

1. Any reconstruction, alteration or repair shall not adversely affect the performance of the building or structure, or cause the building or structure to become unsafe or lower existing levels of health and safety.
2. Parts of the building or structure not being reconstructed, altered or repaired shall not be required to comply with the requirements of this code applicable to newly constructed buildings or structures.
3. The installation of material or equipment, or both, that is neither required nor prohibited shall only be required to comply with the provisions of this code relating to the safe installation of such material or equipment.
4. Material or equipment, or both, may be replaced in the same location with material or equipment of a similar kind or capacity.

Exceptions:

1. This section shall not be construed to permit noncompliance with any applicable flood load or flood-resistant construction requirements of this code.
2. Reconstructed decks, balconies, porches and similar structures located 30 inches (762 mm) or more above grade shall meet the current code provisions for structural loading capacity, connections and structural attachment. This requirement excludes **the configuration and height of** handrails and guardrails.

Supporting Statement: The code change provided in the 2006 USBC was intended to improve deck safety when reconstructed. Although there are historic or aesthetic reasons to allow the configuration or height of a handrail or guardrail to remain, these elements should meet the structural loading requirements to resist failure causing injury or death. This code change would be consistent with the intent of the 2006 code change.

**VIRGINIA DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CODE CHANGE FORM**

Address to submit to: DHCD, The Jackson Center 501 North Second Street Richmond, VA 23219-1321 Tel. No. (804) 371 – 7150 Fax No. (804) 371 – 7092 Email: bhcd@dhcd.virginia.gov		Document No. _____ Committee Action: _____ BHCD Action: _____
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Submitted by: State Building Code Technical Review Board

Address: _____ Phone No. _____

Regulation Title: USBC, Virginia Construction Code Section No(s): 106.2

Date Submitted: January 23, 2009

Proposed Change:

Change Section 106.2 to read:

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

Supporting Statement:

This change is to clarify that the third party inspector program provisions implemented in the 2006 code were intended to authorize the building official to establish the criteria for the approval of third-party inspectors, without a local government dictating a differing policy. The change stems from a court decision concerning an appeal of a local government's mandate that all third-party inspectors be architects or engineers, where the court held that the wording in existing Section 106.2 did in fact authorize the local government to mandate a different policy from that established by the building official.

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

Code Change Form for the 2009 Code Change Cycle

Code Change Number: _____

Proponent Information

(Check one): Individual Government Entity Company

Name: Ron Clements

Representing: Chesterfield County Building Inspection Dept.

Mailing Address: 9800 Government Center Parkway

Email Address: clementsro@chesterfield.gov

Telephone Number: (804) 751-4163

Proposal Information

Code(s) and Section(s): 410.5.3, proposed 410.6 and sub-sections, 1015.6 and sub-sections

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

Delete and substitute as follows:

~~**Section 410.5.3 Stage Exits.** At least one approved means of egress shall be provided from each side of the stage and from each side of the space under the stage. At least one means of escape shall be provided from each fly gallery and from the gridiron. A steel ladder, alternating tread stairway or spiral stairway is permitted to be provided from the gridiron to a scuttle in the stage roof.~~

~~**410.6 Means of egress.** Except as modified or as provided for in this section, the provisions of Chapter 10 shall apply.~~

~~**410.6.1 Arrangement.** Where two or more exits or exit access doorways are required per section 1015.1 from the stage or area beneath the stage, at least one exit or exit access doorway shall be provided on each side of the stage or area beneath the stage.~~

~~**410.6.2 Stairway and ramp enclosure.** Stairways and ramps serving the stage are not required to be enclosed.~~

~~**410.6.3 Fly Gallery.** At least one exit or exit access shall be provided from fly galleries and the maximum length of exit access travel shall not exceed 300 feet for buildings without a sprinkler system and 400 feet for buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1. The following exit access components are permitted when serving only the fly gallery:~~

- ~~1. Unenclosed interior stairs.~~
- ~~2. Spiral stairs.~~
- ~~3. Stairways with a minimum width of 22 inches (559 mm).~~
- ~~4. Alternating tread devices.~~
- ~~5. Permanently installed Ladders.~~

Renumber as follows:

~~**410.6 7 Automatic Sprinkler System.** (no change, renumber only)~~

~~**410.7 8 Standpipes.** (no change, renumber only)~~

Delete without substitution as follows:

~~**1015.6 Stage means of egress.** Where two means of egress are required, based on the stage size or occupant load, one means of egress shall be provided on each side of the stage.~~

~~**1015.6.1 Gallery, gridiron and catwalk means of egress.** The means of egress from lighting and access catwalks, galleries and gridirons shall meet the requirements for occupancies in Group F-2.~~

Exceptions:

- ~~1. A minimum width of 22 inches (559 mm) is permitted for lighting and access catwalks.~~

- ~~2. Spiral stairs are permitted in the means of egress.~~
- ~~3. Stairways required by this subsection need not be enclosed.~~
- ~~4. Stairways with a minimum width of 22 inches (559 mm), ladders, or spiral stairs are permitted in the means of egress.~~
- ~~5. A second means of egress is not required from these areas where a means of escape to a floor or to a roof is provided. Ladders, alternating tread devices or spiral stairs are permitted in the means of escape.~~
- ~~6. Ladders are permitted in the means of egress.~~

Currently special means of egress provisions for stages are located in two separate sections and chapters, 410.5.3 and 1015.6. The separate sections are in conflict with one another. Section 410.5.3 requires two exit access routes, one from each side of the stage regardless of occupant load or travel distance. Section 1015.6, however, allows a single exit or exit access route if common path of travel and occupant load limits per table 1015.1 are met. Section 410.5.3 allows a single exit or exit access from the fly gallery or the gridiron without a travel distance restriction. Section 1015.6.1 requires the means of egress for the gallery and gridiron to meet means of egress provisions for F-2, which can require multiple exits or exit access routes and limits the travel distance per group F-2 requirements. Current section 1015.6.1 also refers to gallery instead of the currently defined term fly gallery that is referenced in section 410.5.3.

The proposed change also removes the reference to catwalks and gridirons from the means of egress provisions. Catwalks are not defined by the IBC but by common definition these are service walkways that are not normally occupied and therefore do not need a means of egress and are not addressed by chapter 10. Additionally gridirons are defined per 410.2, as structural framing used to support scenery, therefore a gridiron by definition is not an occupied space that requires a means of egress per chapter 10. References to means of escape were removed because they are not prohibited without the reference; they can still be used because they are not taking the place of a means of egress.

The travel distances of 300 and 400 feet (non-sprinklered/sprinklered) for the fly gallery were inserted because they are the travel distances for group F-2 referenced in current section 1015.6.1. This is a more straightforward method to prescribe the travel distance limitations than referencing group F-2. The allowance for the use of a ladder in the means of egress serving a fly gallery was changed to require the ladder be permanently installed so that a movable ladder cannot be used for egress.

Finally the code change puts the special requirements completely in chapter 4 where they belong. The reason that the two sections, one in chapter four and one in chapter 10, were in conflict is because having the provisions in two separate code text locations set up the scenario where changes were not made to each section to keep them synchronized. Special provisions of chapter 4 do not need to be repeated in the code sections that chapter 4 overrides.

Cost Impact: The code change will reduce the cost of construction by allowing for smaller stages to be constructed with one exit or exit access instead of two. Additional cost savings will be provided by the reduced confusion and misapplication of the code provisions for stage means of egress; inconsistent and confusion code provisions cost extra money to the code users.

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 TASO (Technical Assistance and Services Office)
The Jackson Center
501 N. 2nd Street
Richmond, VA 23219-1321

Email Address: taso@dhcd.virginia.gov
Fax Number: (804) 371-7092
Phone Numbers: (804) 371-7140 or (804) 371-7150



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

Code Change Form for the 2009 Code Change Cycle

Code Change Number: _____

Proponent Information

(Check one): Individual Government Entity Company

Name: Staff _____

Representing: Division of Building and Fire Regulations _____

Mailing Address: 501 N. Second St., Richmond, VA _____

Email Address: taso@dhcd.virginia.gov

Telephone Number: (804) 371-7150 _____

Proposal Information

Code(s) and Section(s): 13 VAC 5-63 Virginia Uniform Statewide Building Code, 13VAC5-63-220. Chapter 4
Special detailed requirements based on use and occupancy

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

VCC Section ~~421.2~~ 424.2 Site work for manufactured homes.

~~The installation of a manufactured home is generally subject to the requirements of the Virginia Manufactured Home Safety Regulations (13 VAC 5-95). Under those regulations, the building official is responsible for assuring that the installation complies with the manufacturer's installation instructions and any special conditions or limitations of use stipulated by the label. To the extent that any aspect of the installation is not provided for in the manufacturer's installation instructions, then the installation shall comply with applicable requirements of this code. In the case where the manufacturer's installation instructions for a manufactured home are not available, the NCSBCS/ANSI A225.1 standard, 1994 edition, may be substituted for the manufacturer's installation instructions. Foundations, stoops, decks, porches, alterations and additions associated with manufactured homes are subject to the requirements of this code and all administrative requirements of this code for permits, inspections and certificates of occupancy are also applicable. The requirements of the IRC shall be permitted to be used for the technical requirements for such construction work. In addition, Appendix E of the IRC entitled, "Manufactured Housing Used As Dwellings," shall be an acceptable alternative to this code for construction work associated with the installation of manufactured homes and for additions, alterations and repairs to manufactured homes. The aspects for the installation and set up of a new manufactured home covered by this code rather than the Virginia Manufactured Home Safety Regulations (13 VAC 5-95) include, but are not limited to , footings, foundations systems, anchoring of the home, exterior, interior close-up, additions and alterations done during initial installation. Such aspects shall be subject to and shall comply with the installation instructions provided by the manufacturer of the home. To the extent that the manufacturer's installations instructions do not address any aspect enumerated above or when the manufacturer's installation instructions are not available, such aspects shall be subject to and shall comply with Title 24 Code of Federal Regulations, Part 3285 – Model Manufactured Home Installation Standards. To the extent that the manufacturer's installation instructions and Title 24 Code of Federal Regulations (CFR), Part 3285 do not address any aspect enumerated above, the installer must first attempt to obtain Design Approval Primary Inspection Agency (DAPIA) as defined in 24 CFR 3285.5, approved designs and instructions prepared by the manufacturer; or if designs and instructions are not available from the manufacturer, obtain an alternate design prepared and certified by a registered professional engineer or registered architect that is consistent with the manufactured home design, conforms to the requirements of the Manufactured Housing Consensus Committee (MHCSS)~~

as defined in 24 CFR 3285.5, and has been approved by the manufacturer and the DAPIA. Stoops, decks, porches and used manufactured homes shall comply with the provisions of this code, which shall include the option of using the IRC for the technical requirements for the installation and set up of the home and the use of Appendix E of the IRC for additions, alterations and repairs to the home. Additionally, all applicable provisions of Chapter 1 of this code, including but not limited to requirements for permits, inspections, certificates of occupancy and requiring compliance, are applicable to the installation and set up of a manufactured home. Where the installation or erection of a manufactured home utilizes components which are to be concealed, the installer shall notify the building official that an inspection is necessary and assure that an inspection is performed and approved prior to concealment of such components, unless the building official has agreed to an alternative method of verification.

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

The changes are intended to draw clear lines between what is regulated under the MHSR and under the VCC for the set up and installation of manufactured homes. In addition, the reference in the VCC to the new federal installation standards is added to replace the old reference to the NCSBCS/ANSI standard.

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:

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The Jackson Center
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Richmond, VA 23219-1321

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

Code Change Form for the 2009 Code Change Cycle

Code Change Number: _____

Proponent Information

(Check one): Individual Government Entity Company

Name: Staff _____

Representing: Division of Building and Fire Regulations _____

Mailing Address: 501 N. Second St., Richmond, VA _____

Email Address: taso@dhcd.virginia.gov

Telephone Number: (804) 371-7150 _____

Proposal Information

Code(s) and Section(s): 13 VAC 5-63 Virginia Uniform Statewide Building Code, 13VAC5-63-220. Chapter 4
Special detailed requirements based on use and occupancy

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

~~421.5~~ 424.5 Site work for industrialized buildings. Site work for the erection and installation of an industrialized building is generally subject to the requirements of the Virginia Industrialized Building Safety Regulations (13 VAC 5-91) and the building official has certain enforcement responsibilities under those regulations shall comply with the manufacturer's instructions . To the extent that any aspect of the erection or installation of an industrialized building is not covered by ~~those regulations~~ the manufacturer's instructions , this code shall be applicable including the use of the IRC for any construction work where the industrialized building would be classified as a Group R-5 building . In addition, all administrative requirements of this code for permits, inspections and certificates of occupancy are also applicable. The requirements of the IRC shall be permitted to be used for any construction work that is subject to this code ~~where the industrialized building would be classified as a Group R-5 building.~~ Further, the building official may require the submission of plans and specifications for details of items needed to comprise the finished building that are not included or specified in the manufacturer's instructions, including, but not limited to, footings, foundations, supporting structures, proper anchorage and the completion of the plumbing, mechanical and electrical systems. Where the installation or erection of an industrialized building utilizes components which are to be concealed, the installer shall notify the building official that an inspection is necessary and assure that an inspection is performed and approved prior to concealment of such components, unless the building official has agreed to an alternative method of verification.

~~421.6~~ 424.6 Relocated industrialized buildings; alterations and additions. Industrialized buildings constructed prior to January 1, 1972 shall be subject to Section 117 when relocated. Alterations and additions to any existing industrialized buildings shall be subject to pertinent provisions of this code. Building officials shall be permitted to require the submission of plans and specifications for the model to aid in the evaluation of the proposed alteration or addition. Such plans and specifications shall be permitted to be submitted in electronic or other available format acceptable to the building official.

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

Proposed Revisions to the Virginia Construction Code to Correlate to Changes in the IBSR for the 2009 State Building and Fire Regulations

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:

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

Code Change Form for the 2009 Code Change Cycle

Code Change Number: _____

Proponent Information

(Check one): Individual Government Entity Company

Name: J. Kenneth Payne, Jr., AIA

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Email Address: kpayne@moseleyarchitects.com

Telephone Number: 804-794-7555

Proposal Information

Code(s) and Section(s): 2009 IBC Section 903.3.1.1.1 – Exempt locations [for automatic sprinklers]

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

Add exemption #6, as follows:

[F] 903.3.1.1.1 Exempt locations. Automatic sprinklers shall not be required in the following rooms or areas where such rooms or areas are protected with an approved automatic fire detection system in accordance with Section 907.2 that will respond to visible or invisible particles of combustion. Sprinklers shall not be omitted from any room merely because it is damp, of fire-resistance-rated construction or contains electrical equipment.

1. Any room where the application of water, or flame and water, constitutes a serious life or fire hazard.
2. Any room or space where sprinklers are considered undesirable because of the nature of the contents, when approved by the fire code official.
3. Generator and transformer rooms separated from the remainder of the building by walls and floor/ceiling or roof/ceiling assemblies having a fire-resistance rating of not less than 2 hours.
4. Rooms or areas that are of noncombustible construction with wholly noncombustible contents.
5. Fire service access elevator machine rooms and machinery spaces.
6. Elevator machine rooms and elevator machine spaces for occupant evacuation elevators.

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

Comports with Section 3008.6.1, and locates all exempted locations for automatic sprinklers in one place within the code. Another option might combine the proposed text with exemption #5 or reword #5 to include all elevator machine rooms and machinery spaces, no matter whether it is for "fire service access" or serving "occupant evacuation elevators."

Submittal Information

Date Submitted: April 16, 2009

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 TASO (Technical Assistance and Services Office)

The Jackson Center

501 N. 2nd Street

Richmond, VA 23219-1321

Email Address: taso@dhcd.virginia.gov

Fax Number: (804) 371-7092

Phone Numbers: (804) 371-7140 or (804) 371-7150



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

Code Change Form for the 2009 Code Change Cycle

Code Change Number: _____

Proponent Information

(Check one): Individual Government Entity Company

Name: Jason Gill

Representing: East Coast Fire Protection

Mailing Address: 3017 Vernon Road, Richmond, VA 23228

Email Address: kgill@ecfp.com

Telephone Number: 804-222-1381

Proposal Information

Code(s) and Section(s): Virginia Construction Code 905.2 (Exception)

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

Current exception reads: "The residual pressure of 100 psi for 2 1/2" hose connection and 65 psi for 1 1/2" hose connection is not required in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 and where the highest floor level is not more than 150' above the lowest level of fire department vehicle access."

Change exception to read: "The residual pressure of 100 psi for 2 1/2" hose connection and 65 psi for 1 1/2" hose connection is not required in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2 and where the highest floor level is not more than 150' above the lowest level of fire department vehicle access."

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

Section 903.3.1.1 is strictly for NFPA 13 systems only. However, NFPA does not differentiate between NFPA 13 or 13R with respect to the requirement for standpipes. Rather, NFPA only requires standpipes based on building height. The exception to 905.2 acknowledges that the fire department is capable of pressurizing the standpipes with adequate pressure up to 150'. This allows for 100 psi at the the 150' level when the system is pressurized with 175psi at the fire department connection (65psi loss for 150' of elevation and 10psi for friction loss). NFPA 13R systems should be allowed the same exception since 13R is only allowed for buildings of 4 stories or less.

Submittal Information

Date Submitted: 4-7-09

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 TASO (Technical Assistance and Services Office)
The Jackson Center
501 N. 2nd Street
Richmond, VA 23219-1321

Email Address: taso@dhcd.virginia.gov
Fax Number: (804) 371-7092
Phone Numbers: (804) 371-7140 or (804) 371-7150



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

Code Change Form for the 2009 Code Change Cycle

Code Change Number: _____

Proponent Information

(Check one): Individual Government Entity Company

Name: Ron Clements

Representing: Chesterfield County Building Inspection Dept.

Mailing Address: 9800 Government Center Parkway

Email Address: clementsro@chesterfield.gov

Telephone Number: (804) 751-4163

Proposal Information

Code(s) and Section(s): 1103.2.7

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

Revise as follows:

1103.2.7 Raised areas, safety and security. Raised areas used primarily purposes of security, life safety or fire safety including, but not limited to, observation galleries, prison guard towers, fire towers or lifeguard stands, are not required to be accessible or be served by an accessible route.

Add new section as follows:

1103.2.8 Raised areas in places of religious worship. Raised areas used primarily for religious ceremonies in a place of religious worship are not required to be accessible or be served by an accessible route.

Renumber remaining sections

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

This change has been submitted to the ICC for the 2012 edition cycle. The current accessibility provisions of chapter 11 in the IBC and the ICC/ANSI A117.1 standard were developed from the Americans With Disabilities act and in large part by people involved in the ADA. The Americans with Disabilities act section 307 exempts religious organizations and religions buildings from compliance with the act. Do to this exemption accessibility to specific church architectural elements has never been developed and is not addressed in the code or A117.1standard. Providing access routes to elevated areas such as Altars, bimahs, baptisteries, pulpits, platforms and other elevated areas within churches used for the performance of church religious services is very difficult and costly. Furthermore even if an accessible route is provided to these areas there is no guidance to make a religious feature such as a baptistery accessible. Since there is already an accessibility exemption for raised areas used for safety and security this proposal adds "safety and security" to the existing raised area exemption and adds this new exemption directly following the existing raised area exemption.

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 TASO (Technical Assistance and Services Office)

The Jackson Center

501 N. 2nd Street

Richmond, VA 23219-1321

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

Code Change Form for the 2009 Code Change Cycle

Code Change Number: _____

Proponent Information

(Check one): Individual Government Entity Company

Name: J. Kenneth Payne, Jr., AIA

Representing: VSAIA

Mailing Address: 3200 Norfolk Street, Richmond, Virginia 23230

Email Address: kpayne@moseleyarchitects.com

Telephone Number: 804-794-7555

Proposal Information

Code(s) and Section(s): 2009 IBC Section 903.3.1.1.1 – Exempt locations [for automatic sprinklers]

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

3006.4 Machine rooms and machinery spaces. Elevator machine rooms, rooms housing elevator controllers, and machinery spaces shall be enclosed with *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 712, or both. The *fire-resistance rating* shall not be less than the required rating of the hoistway enclosure served by the machinery. Openings in the *fire barriers* shall be protected with assemblies having a *fire protection rating* not less than that required for the hoistway enclosure doors.

Exceptions:

1. Where machine rooms, rooms housing elevator controllers, and machinery spaces do not abut and have no openings to the hoistway enclosure they serve the *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 712, or both, shall be permitted to be reduced to a 1-hour *fire-resistance rating*.
2. In buildings four *stories* or less above *grade plane* when machine rooms, rooms housing elevator controllers, and machinery spaces do not abut and have no openings to the hoistway enclosure they serve, the machine room and machinery spaces are not required to be fire-resistance rated.

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

Especially with Machine-room-less (MRL) elevators, the elevator controller is oftentimes remotely located, sometimes in a small "closet". There is confusion as to whether the controller constitutes "equipment" or if the room in which it is located is considered a "machine room." ASME A17.1-2004, Section 2.7.1.1.1, seems to imply that controllers ("control equipment") shall be separated by a fire-resistive enclosure, based on the text below:

2.7.1.1.1 Spaces containing machines, control equipment, sheaves, and other machinery shall be separated from the remainder of the building by a fire-resistive enclosure conforming to the requirements of the building code.

Some LAHJ have required rated enclosures and some have not. Since the referenced standard cannot dictate building construction requirements, by adding the proposed text, it clarifies that rooms housing elevator controllers are considered "machine rooms", and therefore, must be designed according to Section 3006.4.

However, if the consensus is that rooms housing elevator controllers do not need to be enclosed in rated construction, then that should be clearly stated. The following proposed text would clarify this position:

3006.4 Machine rooms and machinery spaces. Elevator machine rooms and machinery spaces shall be enclosed with *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 712, or both. The *fire-resistance rating* shall not be less than the required rating of the hoistway enclosure served by the machinery. Openings in the *fire barriers* shall be protected with assemblies having a *fire protection rating* not less than that required for the hoistway enclosure doors.

Exceptions:

1. Where machine rooms and machinery spaces do not abut and have no openings to the hoistway enclosure they serve the *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 712, or both, shall be permitted to be reduced to a 1-hour *fire-resistance rating*.
2. In buildings four *stories* or less above *grade plane* when machine rooms and machinery spaces do not abut and have no openings to the hoistway enclosure they serve, the machine room and machinery spaces are not required to be fire-resistance rated.
3. Rooms housing elevator controllers that do not abut and have no openings to the hoistway enclosure they serve are not required to be fire-resistance rated.

Submittal Information

Date Submitted: April 16, 2009

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 TASO (Technical Assistance and Services Office)
The Jackson Center
501 N. 2nd Street
Richmond, VA 23219-1321

Email Address: taso@dhcd.virginia.gov
Fax Number: (804) 371-7092
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VIRGINIA DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
DIVISION OF BUILDING AND FIRE REGULATION

Code Change Form for the 2009 Code Change Cycle

Code Change Number: _____

Proponent Information

(Check one): Individual Government Entity Company

Name: DHCD staff

Representing: DHCD

Mailing Address: 501 North 2nd Street Richmond Virginia 23219

Email Address: tsu@dhcd.virginia.gov

Telephone Number: 804.371.7140

Proposal Information

Code(s) and Section(s): USBC, Part I – VCC Section 3410.2.5; USBC Part II – VRC Section 1301.2.5

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

Modify sections as follows:

VCC 3410.2.5 Accessibility requirements. All portions of the buildings proposed for change of occupancy shall conform to the accessibility provisions of Chapter 11. All alterations of existing buildings or portions thereof shall conform to the accessibility provisions of Section 3411.

VRC 1301.2.5 Accessibility requirements. All portions of the buildings proposed for change of occupancy shall conform to the accessibility provisions of Chapter 11 of the *International Building Code*. All alterations of existing buildings or portions thereof shall conform to the accessibility provisions of Section 310.

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

These additional accessibility provisions are necessary to align the compliance alternative provisions relative to alterations of existing structures and buildings, or portions thereof, with the accessibility provisions of the Americans with Disabilities Act in order to be eligible for certification by the U.S. Department of Justice as equivalent to the ADA.

Submittal Information

Date Submitted: April 24, 2009

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 TASO (Technical Assistance and Services Office)
The Jackson Center
501 N. 2nd Street
Richmond, VA 23219-1321

Email Address: taso@dhcd.virginia.gov
Fax Number: (804) 371-7092
Phone Numbers: (804) 371-7140 or (804) 371-7150



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

Code Change Form for the 2009 Code Change Cycle

Code Change Number: _____

Proponent Information

(Check one): Individual Government Entity Company

Name: Schaefer Oglesby, State TRB

Representing: Self

Mailing Address: 2309 Heron Hill Pl. Lynchburg, Va 24503

Email Address: ssoglesby@comcast.net

434-258-6616

Proposal Information

Code(s) and Section(s): VCC Section 119.2; VMC Section 106.2

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

Change VCC and VMC Sections 119.2 and 106.2 to read:

Membership of board. The LBBCA shall consist of at least five members ... the terms of the members may be of different length so that less than half will expire in any one-year period. The LBBCA shall meet at least once annually to assure a duly constituted board, appoint officers as necessary and receive such training on the code as may be appropriate or necessary from staff of the locality.

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

Many local appeals boards do not meet very often and when an appeal is filed, they find that members are no longer available to serve and have not been kept up to date on current code issues. This minimal new requirement will help to assure that the local appeals boards are more able to adequately respond to a request for an appeal without having to delay to address appointment issues or elect new officers.

Submittal Information

Date Submitted: April 24, 2009

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 TASO (Technical Assistance and Services Office)
The Jackson Center
501 N. 2nd Street
Richmond, VA 23219-1321

Email Address: taso@dhcd.virginia.gov
Fax Number: (804) 371-7092
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VIRGINIA DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
DIVISION OF BUILDING AND FIRE REGULATION

Code Change Form for the 2009 Code Change Cycle

Code Change Number: _____

Proponent Information

(Check one): Individual Government Entity Company

Name: Gregory H. Revels

Representing: Henrico County Dept. of Building Construction & Inspections

Mailing Address: P.O. Box 90775, Henrico, Va. 23273-0775

Email Address: rev04@co.henrico.va.us

Telephone Number: 804/501-4374

Proposal Information

Code(s) and Section(s): 2009 International Property Maintenance Code, Section 506.3

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

506.3 Grease interceptors. ~~Where it has been determined that a grease interceptor is not being maintained and serviced as intended by this code and the manufacturer's instructions, an *approved* interceptor monitoring system shall be provided or a maintenance program shall be established with documentation submitted to the *code official*.~~ Grease interceptors, grease traps and automatic grease removal devices shall be maintained in accordance with this code and the manufacturer's installation instructions. Grease interceptors, grease traps and automatic grease removal devices shall be regularly serviced and cleaned to prevent the discharge of oil, grease, and other substances harmful or hazardous to the building drainage system, the public sewer, the private sewage disposal system or the sewage treatment plant or processes. All records of maintenance, cleaning and repairs shall be available for inspection by the *code official*.

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

The 2009 IPMC only requires a routine maintenance program after the code official determines that the grease interceptor is not being maintained. The revised text clarifies that grease interceptors, grease traps and automatic grease removal devices require on-going routine maintenance in order to perform their intended function. Any such maintenance should be in accord with the manufacturer's maintenance criteria. The proposed language is coordinated with the provisions of Section 1003.1 of the IPC which establishes when these devices are required to be installed. Failure to maintain these devices results in public health risks via sanitary sewer overflows into buildings, roads and streams and premature deterioration and failure of public and private sewage systems.

Submittal Information

Date Submitted: May 21, 2009

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 TASO (Technical Assistance and Services Office)
The Jackson Center
501 N. 2nd Street
Richmond, VA 23219-1321

Email Address: tsu@dhcd.virginia.gov
Fax Number: (804) 371-7092
Phone Numbers: (804) 371-7140 or (804) 371-7150



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

Code Change Form for the 2009 Code Change Cycle

Code Change Number: _____

Proponent Information

(Check one): Individual Government Entity Company

Name: Sean P. Farrell

Representing: VBCOA Property Maintenance Committee

Mailing Address: 5 County Complex Court, Prince William VA 22192

Email Address: sfarrell@pwcgov.org

Telephone Number: 703-792-5998

Proposal Information

Code(s) and Section(s): International Property Maintenance Code - Modification of IPMC section 604.3.1.1 Exception

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

Change the exception language to read:

Exception: The following equipment shall be allowed to be repaired or reused where an inspection report from the equipment manufacturer, an approved representative of the equipment manufacturer, a third party licensed or certified electrician, or an electrical engineer indicates that the exposed equipment has not sustained damage that requires replacement.

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

This provides further flexibility regarding who can determine if the electrical equipment is damaged or operational; especially in circumstances where the manufacturer is no longer available.

Submittal Information

Date Submitted: 5/15/09

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 TASO (Technical Assistance and Services Office)
The Jackson Center
501 N. 2nd Street
Richmond, VA 23219-1321

Email Address: tsu@dhcd.virginia.gov
Fax Number: (804) 371-7092
Phone Numbers: (804) 371-7140 or (804) 371-7150

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

Code Change Form for the 2009 Code Change Cycle

Code Change Number: _____

Proponent Information

(Check one): Individual Government Entity Company

Name: Robby Dawson

Representing: Virginia Fire Services Board

Mailing Address: 1005 Technology Park Drive, Glen Allen, VA 23059

Email Address: dawsonj@chesterfield.gov

Telephone Number: 804-717-6838

Proposal Information

Code(s) and Section(s): SFPC Sections 108.1.2 and 108.5

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

108.1.2 ~~Types~~Duration of Operational permits. ~~There shall be two types of permits as follows:~~

~~1. Operational permit.~~ An operational permit allows the applicant to conduct an operation or a business for which a permit is required by Section 108.1.1 for either:

- ~~1.1. A prescribed period.~~
- ~~1.2. Until renewed or revoked.~~

~~2. Construction permit.~~ ~~Construction permit are required, and shall be issued in accordance with the USBC and shall be issued by the building official. A construction permit allows the applicant to install or modify systems and equipment for which a permit is required by section 108.5.~~

108.1.3 Operational permits for the same location. When more than one operational permit is required for the same location, the fire official is authorized to consolidate such permits into a single permit provided that each provision is listed in the permit.

108.5 Required construction permits. ~~The building official is authorized to issue construction permits in accordance with the USBC for work as set forth in Sections 108.5.1 through 108.5.12.~~

~~108.5.1 Automatic fire extinguishing systems.~~ ~~A construction permit is required for installation of or modification to an automatic fire extinguishing system. Maintenance performed in accordance with this code is not considered a modification and does not require a permit.~~

~~108.5.2 Compressed gases.~~ ~~When the compressed gases in use or storage exceed the amounts listed in Table 107.2, a construction permit is required to install, repair damage to, abandon, remove, place temporarily out of service, or close or substantially modify a compressed gas system.~~

Exceptions:

- ~~1. Routine maintenance.~~
- ~~2. For emergency repair work performed on an emergency basis, application for permit shall be made within two working days of commencement of work.~~

~~The permit applicant shall apply for approval to close storage, use or handling facilities at least 30 days prior to the termination of the storage, use or handling of compressed or liquefied gases. Such application shall include any change or alteration of the facility closure plan filed pursuant to Section 2701.5.3. The 30 day period is not applicable when approved based on special circumstances requiring such waiver.~~

~~108.5.3 Fire alarm and detection systems and related equipment.~~ ~~A construction permit is required for~~

~~installation of or modification to fire alarm and detection systems and related equipment. Maintenance performed in accordance with this code is not considered a modification and does not require a permit.~~

~~**108.5.4 Fire pumps and related equipment.** A construction permit is required for installation of or modification to fire pumps and related fuel tanks, jockey pumps, controllers, and generators. Maintenance performed in accordance with this code is not considered a modification and does not require a permit.~~

~~**108.5.5 Flammable and combustible liquids.** A construction permit is required:~~

- ~~1. To repair or modify a pipeline for the transportation of flammable or combustible liquids.~~
- ~~2. To install, construct or alter tank vehicles, equipment, tanks, plants, terminals, wells, fuel dispensing stations, refineries, distilleries and similar facilities where flammable and combustible liquids are produced, processed, transported, stored, dispensed or used.~~
- ~~3. To install, alter, remove, abandon, place temporarily out of service or otherwise dispose of a flammable or combustible liquid tank.~~

~~**108.5.6 Hazardous materials.** A construction permit is required to install, repair damage to, abandon, remove, place temporarily out of service, or close or substantially modify a storage facility or other area regulated by Chapter 27 when the hazardous materials in use or storage exceed the amounts listed in Table 107.2.~~

~~**Exceptions:**~~

- ~~1. Routine maintenance.~~
- ~~2. For emergency repair work performed on an emergency basis, application for permit shall be made within two working days of commencement of work.~~

~~**108.5.7 Industrial ovens.** A construction permit is required for installation of industrial ovens covered by Chapter 21.~~

~~**Exceptions:**~~

- ~~1. Routine maintenance.~~
- ~~2. For repair work performed on an emergency basis, application for permit shall be made within two working days of commencement of work.~~

~~**108.5.8 LP-gas.** A construction permit is required for installation of or modification to an LP-gas system.~~

~~**108.5.9 Private fire hydrants.** A construction permit is required for the installation or modification of private fire hydrants.~~

~~**108.5.10 Spraying or dipping.** A construction permit is required to install or modify a spray room, dip tank or booth.~~

~~**108.5.11 Standpipe systems.** A construction permit is required for the installation, modification, or removal from service of a standpipe system. Maintenance performed in accordance with this code is not considered a modification and does not require a permit.~~

~~**108.5.12 Temporary membrane structures, tents and canopies.** A construction permit is required to erect all membrane structures or any tent or air-supported structure that covers an area greater than 900 square feet (84 m²), including within that area all connecting areas or spaces with a common means of egress or entrance, provided such tents or structures have an occupant load of greater than 50 persons. Tents used exclusively for recreational camping shall not be required to obtain a construction permit.~~

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

This proposed change is to alleviate any confusion within the building officials' community, state staff, festival vendors, and anyone else that may be confused by USBC requirements replicate in the SFPC. No attempt is being made to contradict, change any values, or any requirements that are found in the USBC.

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 TASO (Technical Assistance and Services Office)
The Jackson Center
501 N. 2nd Street
Richmond, VA 23219-1321

Email Address: taso@dhcd.virginia.gov
Fax Number: (804) 371-7092
Phone Numbers: (804) 371-7140 or (804) 371-7150



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

Code Change Form for the 2009 Code Change Cycle

Code Change Number: _____

Proponent Information

(Check one): Individual Government Entity Company

Name: DAVID J. THOMAS P.E. Representing: SELF FXCO FPD FX VA.

Mailing Address: FAIRFAX COUNTY FIRE PREVENTION DIVISION
10700 PAGE AV, FAIRFAX VA 22030

Email Address: david.thomas@fairfaxcounty.gov Telephone Number: 703-246-4819

Proposal Information

Code(s) and Section(s): SFRC (IFC) Section 311.5

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

CHANGE IFC SECTION 311.5 to read as follows:
311.5 Placards. ANY VACANT OR ABANDONED BUILDINGS OR structures determined by the fire official to be ~~unsafe pursuant to Section 110.4~~ of this code relating dangerous to fire-fighting operations due to structural or interior hazards shall be marked as required by Sections 311.5.1 through 311.5.5, or marked as ~~required~~ by the local fire official.

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

The placarding provisions were first in the 2006 IFC but due to the use of the term "unsafe" there was a question of whether SFRC state amendment Section 110.4 referencing the code prevented the use of the placarding provisions. This change clarifies that the placarding is for a different purpose and does not create a conflict with the USBC.

Submittal Information

Date Submitted: April 30, 2009

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 TASO (Technical Assistance and Services Office)
The Jackson Center
501 N. 2nd Street
Richmond, VA 23219-1321



Email Address: tsu@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 2009 Code Change Cycle

Code Change Number: _____

Proponent Information

(Check one): Individual Government Entity Company

Name: Robby Dawson

Representing: Virginia Fire Services Board

Mailing Address: 1005 Technology Park Drive, Glen Allen, VA 23059

Email Address: dawsonj@chesterfield.gov

Telephone Number: 804-717-6838

Proposal Information

Code(s) and Section(s): '09 IFC/SFPC Section 609.3.3.2

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

609.3.3.2 Grease accumulation Cleaning. ~~If during the inspection it is found that hoods, grease-removal devices, fans ducts or other appurtenances have an accumulation of grease, such components shall be cleaned.~~ Hoods, grease-removal devices, fans, ducts and other appurtenances shall be cleaned at intervals necessary to prevent the accumulation of grease based upon a written and approved cleaning schedule that shall be established and maintained on the premises by the owner or operator of the ventilation system. Cleanings shall be recorded, and records shall state the extent, time and date of cleaning.

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

Having a pre-approved and mutually agreed upon cleaning schedule removes subjective criteria.

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:

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The Jackson Center
501 N. 2nd Street
Richmond, VA 23219-1321

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Phone Numbers: (804) 371-7140 or (804) 371-7150



DHCD, DBFR 2009 Code Change Process

June 3, 2009 Workgroup 4 Sub-Workgroup on Residential Sprinklers Meeting Agenda Package

CODE ISSUES:

1. 2009 IRC provisions
2. ICC changes
3. Manufactured Homes

DISCUSSION:

1. Options
 - Mandatory with delayed implementation date
 - Delete
 - Incentives
 - Non-mandatory with or without incentives
 - Passive construction improvements
 - Townhomes only
2. Fire Data and Recent Fires in Prince William and Loudoun Counties
3. Other Factors
 - Water fees
 - Lightweight construction
 - Fire-safe cigarettes
 - Arc fault devices
 - Insurance
 - Cost data
 - Educational efforts and operational practices
4. Current USBC Group R-2 Exemption
5. New Business and Next Meeting Date (June 30, 2009)

SECTION R312 GUARDS

R312.1 Where required. *Guards* shall be located along open-sided walking surfaces, including stairs, ramps and landings, that are located more than 30 inches (762 mm) measured vertically to the floor or *grade* below at any point within 36 inches (914 mm) horizontally to the edge of the open side. Insect screening shall not be considered as a *guard*.

R312.2 Height. Required *guards* at open-sided walking surfaces, including stairs, porches, balconies or landings, shall be not less than 36 inches (914 mm) high measured vertically above the adjacent walking surface, adjacent fixed seating or the line connecting the leading edges of the treads.

Exceptions:

1. *Guards* on the open sides of stairs shall have a height not less than 34 inches (864 mm) measured vertically from a line connecting the leading edges of the treads.
2. Where the top of the *guard* also serves as a handrail on the open sides of stairs, the top of the *guard* shall not be not less than 34 inches (864 mm) and not more than 38 inches (965 mm) measured vertically from a line connecting the leading edges of the treads.

R312.3 Opening limitations. Required *guards* shall not have openings from the walking surface to the required *guard* height which allow passage of a sphere 4 inches (102 mm) in diameter.

Exceptions:

1. The triangular openings at the open side of a stair, formed by the riser, tread and bottom rail of a *guard*, shall not allow passage of a sphere 6 inches (153 mm) in diameter.
2. *Guards* on the open sides of stairs shall not have openings which allow passage of a sphere $4\frac{3}{8}$ inches (111 mm) in diameter.

R312.4 Exterior woodplastic composite guards. Woodplastic composite *guards* shall comply with the provisions of Section R317.4.

SECTION R313 AUTOMATIC FIRE SPRINKLER SYSTEMS

R313.1 Townhouse automatic fire sprinkler systems. An automatic residential fire sprinkler system shall be installed in *townhouses*.

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

R313.1.1 Design and installation. Automatic residential fire sprinkler systems for *townhouses* shall be designed and installed in accordance with Section P2904.

R313.2 One- and two-family dwellings automatic fire systems. Effective January 1, 2011, an automatic residential fire sprinkler system shall be installed in one- and two- family *dwellings*.

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

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

SECTION R314 SMOKE ALARMS

R314.1 Smoke detection and notification. All smoke alarms shall be listed in accordance with UL 217 and installed in accordance with the provisions of this code and the household fire warning *equipment* provisions of NFPA 72.

R314.2 Smoke detection systems. Household fire alarm systems installed in accordance with NFPA 72 that include smoke alarms, or a combination of smoke detector and audible notification device installed as required by this section for smoke alarms, shall be permitted. The household fire alarm system shall provide the same level of smoke detection and alarm as required by this section for smoke alarms. Where a household fire warning system is installed using a combination of smoke detector and audible notification device(s), it shall become a permanent fixture of the occupancy and owned by the homeowner. The system shall be monitored by an *approved* supervising station and be maintained in accordance with NFPA 72.

Exception: Where smoke alarms are provided meeting the requirements of Section R314.4.

R314.3 Location. Smoke alarms shall be installed in the following locations:

1. In each sleeping room.
2. Outside each separate sleeping area in the immediate vicinity of the bedrooms.
3. On each additional *story* of the *dwelling*, including *basements* and habitable attics but not including crawl spaces and uninhabitable *attics*. In *dwellings* or *dwelling units* with split levels and without an intervening door between the adjacent levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level is less than one full *story* below the upper level.

When more than one smoke alarm is required to be installed within an individual *dwelling* unit the alarm devices shall be interconnected in such a manner that the actuation of one alarm will activate all of the alarms in the individual unit.

R314.3.1 Alterations, repairs and additions. When *alterations*, repairs or *additions* requiring a *permit* occur, or when one or more sleeping rooms are added or created in existing *dwellings*, the individual *dwelling unit* shall be equipped with smoke alarms located as required for new *dwellings*.

Exceptions:

1. Work involving the exterior surfaces of *dwellings*, such as the replacement of roofing or siding, or the *addition* or replacement of windows or doors, or

P2903.10 Hose bibb. Hose bibbs subject to freezing, including the "frost-proof" type, shall be equipped with an accessible stop-and-waste-type valve inside the building so that they can be controlled and/or drained during cold periods.

Exception: Frostproof hose bibbs installed such that the stem extends through the building insulation into an open heated or semiconditioned space need not be separately valved (see Figure P2903.10).

**SECTION P2904
DWELLING UNIT FIRE SPRINKLER SYSTEMS**

P2904.1 General. Where installed, residential fire sprinkler systems, or portions thereof, shall be in accordance with NFPA 13D or Section P2904, which shall be considered equivalent to NFPA 13D. Section P2904 shall apply to stand-alone and multipurpose wet-pipe sprinkler systems that do not include the use of antifreeze. A multipurpose fire sprinkler system shall supply domestic water to both fire sprinklers and plumbing fixtures. A stand-alone sprinkler system shall be separate and independent from the water distribution system. A backflow flow preventer shall not be required to separate a stand-alone sprinkler system from the water distribution system.

P2904.1.1 Required sprinkler locations. Sprinklers shall be installed to protect all areas of a dwelling unit.

Exceptions:

1. Attics, crawl spaces and normally unoccupied concealed spaces that do not contain fuel-fired appliances do not require sprinklers. In attics, crawl spaces and normally unoccupied concealed spaces that contain fuel-fired equipment, a sprinkler shall be installed above the equipment; however, sprinklers shall not be required in the remainder of the space.
2. Clothes closets, linen closets and pantries not exceeding 24 square feet (2.2 m²) in area, with the

smallest dimension not greater than 3 feet (915 mm) and having wall and ceiling surfaces of gypsum board.

3. Bathrooms not more than 55 square feet (5.1 m²) in area.
4. Garages; carports; exterior porches; unheated entry areas, such as mud rooms, that are adjacent to an exterior door; and similar areas.

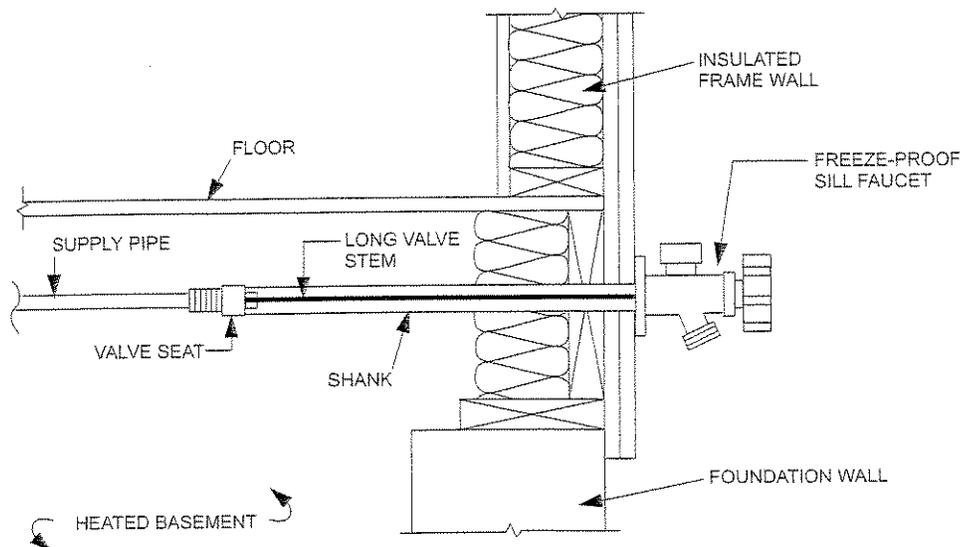
P2904.2 Sprinklers. Sprinklers shall be new listed residential sprinklers and shall be installed in accordance with the sprinkler manufacturer's installation instructions.

P2904.2.1 Temperature rating and separation from heat sources. Except as provided for in Section P2904.2.2, sprinklers shall have a temperature rating of not less than 135°F (57°C) and not more than 170°F (77°C). Sprinklers shall be separated from heat sources as required by the sprinkler manufacturer's installation instructions.

P2904.2.2 Intermediate temperature sprinklers. Sprinklers shall have an intermediate temperature rating not less than 175°F (79°C) and not more than 225°F (107°C) where installed in the following locations:

1. Directly under skylights, where the sprinkler is exposed to direct sunlight.
2. In attics.
3. In concealed spaces located directly beneath a roof.
4. Within the distance to a heat source as specified in Table P2904.2.2

P2904.2.3 Freezing areas. Piping shall be protected from freezing as required by Section P2603.6. Where sprinklers are required in areas that are subject to freezing, dry-side-wall or dry-pendent sprinklers extending from a nonfreezing area into a freezing area shall be installed.



**FIGURE P2903.10
TYPICAL FROSTPROOF HOSE BIBB INSTALLATION NOT REQUIRING SEPARATE VALVE**

TABLE P2904.2.2
LOCATIONS WHERE INTERMEDIATE TEMPERATURE SPRINKLERS ARE REQUIRED

HEAT SOURCE	RANGE OF DISTANCE FROM HEAT SOURCE WITHIN WHICH INTERMEDIATE TEMPERATURE SPRINKLERS ARE REQUIRED ^{a,b} (inches)
Fireplace, side of open or recessed fireplace	12 to 36
Fireplace, front of recessed fireplace	36 to 60
Coal and wood burning stove	12 to 42
Kitchen range top	9 to 18
Oven	9 to 18
Vent connector or chimney connector	9 to 18
Heating duct, not insulated	9 to 18
Hot water pipe, not insulated	6 to 12
Side of ceiling or wall warm air register	12 to 24
Front of wall mounted warm air register	18 to 36
Water heater, furnace or boiler	3 to 6
Luminaire up to 250 watts	3 to 6
Luminaire 250 watts up to 499 watts	6 to 12

For SI: 1 inch = 25.4 mm.

- a. Sprinklers shall not be located at distances less than the minimum table distance unless the sprinkler listing allows a lesser distance.
- b. Distances shall be measured in a straight line from the nearest edge of the heat source to the nearest edge of the sprinkler

P2904.2.4 Sprinkler coverage. Sprinkler coverage requirements and sprinkler obstruction requirements shall be in accordance with Sections P2904.2.4.1 and P2904.2.4.2.

P2904.2.4.1 Coverage area limit. The area of coverage of a single sprinkler shall not exceed 400 square feet (37 m²) and shall be based on the sprinkler listing and the sprinkler manufacturer's installation instructions.

P2904.2.4.2 Obstructions to coverage. Sprinkler discharge shall not be blocked by obstructions unless additional sprinklers are installed to protect the obstructed area. Sprinkler separation from obstructions shall comply with the minimum distances specified in the sprinkler manufacturer's instructions.

P2904.2.4.2.1 Additional requirements for pendent sprinklers. Pendent sprinklers within 3 feet (915 mm) of the center of a ceiling fan, surface-mounted ceiling luminaire or similar object shall be considered to be obstructed, and additional sprinklers shall be installed.

P2904.2.4.2.2 Additional requirements for sidewall sprinklers. Sidewall sprinklers within 5 feet (1524 mm) of the center of a ceiling fan, surface-mounted ceiling luminaire or similar object shall be considered to be obstructed, and additional sprinklers shall be installed.

P2904.2.5 Sprinkler installation on systems assembled with solvent cement. The solvent cementing of threaded adapter fittings shall be completed and threaded adapters for sprinklers shall be verified as being clear of excess cement prior to the installation of sprinklers on systems assembled with solvent cement.

P2904.2.6 Sprinkler modifications prohibited. Painting, caulking or modifying of sprinklers shall be prohibited.

Sprinklers that have been painted, caulked, modified or damaged shall be replaced with new sprinklers.

P2904.3 Sprinkler piping system. Sprinkler piping shall be supported in accordance with the requirements for cold water distribution piping. Sprinkler piping shall comply with all requirements for cold water distribution piping. For multipurpose piping systems, the sprinkler piping shall connect to and be a part of the cold water distribution piping system.

P2904.3.1 Nonmetallic pipe and tubing. Nonmetallic pipe and tubing, such as CPVC and PEX, shall be listed for use in residential fire sprinkler systems.

P2904.3.1.1 Nonmetallic pipe protection. Nonmetallic pipe and tubing systems shall be protected from exposure to the living space by a layer of not less than 3/8 inch (9.5 mm) thick gypsum wallboard, 1/2 inch thick plywood (13 mm), or other material having a 15 minute fire rating.

Exceptions:

1. Pipe protection shall not be required in areas that do not require protection with sprinklers as specified in Section P2904.1.1.
2. Pipe protection shall not be required where exposed piping is permitted by the pipe listing.

P2904.3.2 Shutoff valves prohibited. With the exception of shutoff valves for the entire water distribution system, valves shall not be installed in any location where the valve would isolate piping serving one or more sprinklers.

P2904.3.3 Single dwelling limit. Piping beyond the service valve located at the beginning of the water distribution system shall not serve more than one dwelling.

P2904.3.4 Drain. A means to drain the sprinkler system shall be provided on the system side of the water distribution shutoff valve.

P2904.4 Determining system design flow. The flow for sizing the sprinkler piping system shall be based on the flow rating of each sprinkler in accordance with Section P2904.4.1 and the calculation in accordance with Section P2904.4.2.

P2904.4.1 Determining required flow rate for each sprinkler. The minimum required flow for each sprinkler shall be determined using the sprinkler manufacturer's published data for the specific sprinkler model based on all of the following:

1. The area of coverage.
2. The ceiling configuration.
3. The temperature rating.
4. Any additional conditions specified by the sprinkler manufacturer.

P2904.4.2 System design flow rate. The design flow rate for the system shall be based on the following:

1. The design flow rate for a room having only one sprinkler shall be the flow rate required for that sprinkler, as determined by Section P2904.4.1.
2. The design flow rate for a room having two or more sprinklers shall be determined by identifying the sprinkler in that room with the highest required flow rate, based on Section P2904.4.1, and multiplying that flow rate by 2.
3. Where the sprinkler manufacturer specifies different criteria for ceiling configurations that are not smooth, flat and horizontal, the required flow rate for that room shall comply with the sprinkler manufacturer's instructions.
4. The design flow rate for the sprinkler system shall be the flow required by the room with the largest flow rate, based on Items 1, 2 and 3.
5. For the purpose of this section, it shall be permissible to reduce the design flow rate for a room by subdividing the space into two or more rooms, where each room is evaluated separately with respect to the required design flow rate. Each room shall be bounded by walls and a ceiling. Openings in walls shall have a lintel not less than 8 inches (203 mm) in depth and each lintel shall form a solid barrier between the ceiling and the top of the opening.

P2904.5 Water supply. The water supply shall provide not less than the required design flow rate for sprinklers in accordance with Section P2904.4.2 at a pressure not less than that used to comply with Section P2904.6.

P2904.5.1 Water supply from individual sources. Where a *dwelling unit* water supply is from a tank system, a private well system or a combination of these, the available water supply shall be based on the minimum pressure control setting for the pump.

P2904.5.2 Required capacity. The water supply shall have the capacity to provide the required design flow rate for sprinklers for a period of time as follows:

1. 7 minutes for *dwelling units* one story in height and less than 2,000 square feet (186 m²) in area.
2. 10 minutes for *dwelling units* two or more stories in height or equal to or greater than 2,000 square feet (186 m²) in area.

Where a well system, a water supply tank system or a combination thereof is used, any combination of well capacity and tank storage shall be permitted to meet the capacity requirement.

P2904.6 Pipe sizing. The piping to sprinklers shall be sized for the flow required by Section P2904.4.2. The flow required to supply the plumbing fixtures shall not be required to be added to the sprinkler design flow.

P2904.6.1 Method of sizing pipe. Piping supplying sprinklers shall be sized using the prescriptive method in Section P2904.6.2 or by hydraulic calculation in accordance with NFPA 13D. The minimum pipe size from the water supply source to any sprinkler shall be 3/4 inch (19 mm) nominal. Threaded adapter fittings at the point where sprinklers are attached to the piping shall be a minimum of 1/2 inch (13 mm) nominal.

P2904.6.2 Prescriptive pipe sizing method. Pipe shall be sized by determining the available pressure to offset friction loss in piping and identifying a piping material, diameter and length using the equation in Section P2904.6.2.1 and the procedure in Section P2904.6.2.2.

P2904.6.2.1 Available pressure equation. The pressure available to offset friction loss in the interior piping system (P_i) shall be determined in accordance with the Equation 29-1.

$$P_i = P_{sup} - PL_{svc} - PL_m - PL_d - PL_e - P_{sp} \quad (\text{Equation 29-1})$$

where:

P_i = Pressure used in applying Tables P2904.6.2(4) through P2904.6.2(9).

P_{sup} = Pressure available from the water supply source.

PL_{svc} = Pressure loss in the water-service pipe.

PL_m = Pressure loss in the water meter.

PL_d = Pressure loss from devices other than the water meter.

PL_e = Pressure loss associated with changes in elevation.

P_{sp} = Maximum pressure required by a sprinkler.

2904.6.2.2 Calculation procedure. Determination of the required size for water distribution piping shall be in accordance with the following procedure:

Step 1—Determine P_{sup}

Obtain the static supply pressure that will be available from the water main from the water purveyor, or for an

individual source, the available supply pressure shall be in accordance with Section P2904.5.1.

Step 2—Determine PL_{svc}

Use Table P2904.6.2(1) to determine the pressure loss in the water service pipe based on the selected size of the water service.

Step 3—Determine PL_m

Use Table P2904.6.2(2) to determine the pressure loss from the water meter, based on the selected water meter size.

Step 4—Determine PL_d

Determine the pressure loss from devices other than the water meter installed in the piping system supplying sprinklers, such as pressure-reducing valves, backflow preventers, water softeners or water filters. Device pressure losses shall be based on the device manufacturer's specifications. The flow rate used to determine pressure loss shall be the rate from Section P2904.4.2, except that 5 gpm (0.3 L/S) shall be added where the device is installed in a water-service pipe that supplies more than one dwelling. As alternative to deducting pressure loss for a device, an automatic bypass valve shall be installed to divert flow around the device when a sprinkler activates.

Step 5—Determine PL_e

Use Table P2904.6.2(3) to determine the pressure loss associated with changes in elevation. The elevation used in applying the table shall be the difference between the elevation where the water source pressure was measured and the elevation of the highest sprinkler.

Step 6—Determine P_{sp}

Determine the maximum pressure required by any individual sprinkler based on the flow rate from Section P2904.4.1. The required pressure is provided in the sprinkler manufacturer's published data for the specific sprinkler model based on the selected flow rate.

Step 7—Calculate P_r

Using Equation 29-1, calculate the pressure available to offset friction loss in water-distribution piping between the service valve and the sprinklers.

Step 8—Determine the maximum allowable pipe length

Use Tables P2904.6.2(4) through P2904.6.2(9) to select a material and size for water distribution piping. The piping material and size shall be acceptable if the *developed length* of pipe between the service valve and the most remote sprinkler does not exceed the maximum allowable length specified by the applicable table. Interpolation of P_r between the tabular values shall be permitted.

The maximum allowable length of piping in Tables P2904.6.2(4) through P2904.6.2(9) incorporates an adjustment for pipe fittings, and no additional consideration of friction losses associated with pipe fittings shall be required.

P2904.7 Instructions and signs. An owner's manual for the fire sprinkler system shall be provided to the owner. A sign or valve tag shall be installed at the main shutoff valve to the water distribution system stating the following: "Warning, the water

system for this home supplies fire sprinklers that require certain flows and pressures to fight a fire. Devices that restrict the flow or decrease the pressure or automatically shut off the water to the fire sprinkler system, such as water softeners, filtration systems and automatic shutoff valves, shall not be added to this system without a review of the fire sprinkler system by a fire protection specialist. Do not remove this sign."

P2904.8 Inspections. The water distribution system shall be inspected in accordance with Sections P2904.8.1 and P2904.8.2.

P2904.8.1 Preconcealment inspection. The following items shall be verified prior to the concealment of any sprinkler system piping:

1. Sprinklers are installed in all areas as required by Section P2904.1.1.
2. Where sprinkler water spray patterns are obstructed by construction features, luminaires or ceiling fans, additional sprinklers are installed as required by Section P2904.2.4.2.
3. Sprinklers are the correct temperature rating and are installed at or beyond the required separation distances from heat sources as required by Sections P2904.2.1 and P2904.2.2.
4. The pipe size equals or exceeds the size used in applying Tables P2904.6.2(4) through P2904.6.2(9) or, if the piping system was hydraulically calculated in accordance with Section P2904.6.1, the size used in the hydraulic calculation.
5. The pipe length does not exceed the length permitted by Tables P2904.6.2(4) through P2904.6.2(9) or, if the piping system was hydraulically calculated in accordance with Section P2904.6.1, pipe lengths and fittings do not exceed those used in the hydraulic calculation.
6. Nonmetallic piping that conveys water to sprinklers is listed for use with fire sprinklers.
7. Piping is supported in accordance with the pipe manufacturer's and sprinkler manufacturer's installation instructions.
8. The piping system is tested in accordance with Section P2503.7.

P2904.8.2 Final inspection. The following items shall be verified upon completion of the system:

1. Sprinkler are not painted, damaged or otherwise hindered from operation.
2. Where a pump is required to provide water to the system, the pump starts automatically upon system water demand.
3. Pressure-reducing valves, water softeners, water filters or other impairments to water flow that were not part of the original design have not been installed.
4. The sign or valve tag required by Section P2904.7 is installed and the owner's manual for the system is present.

TABLE P2904.6.2(1)
WATER SERVICE PRESSURE LOSS (PL_{svc})^{a,b}

FLOW RATE ^c (gpm)	³ / ₄ INCH WATER SERVICE PRESSURE LOSS (psi)				1 INCH WATER SERVICE PRESSURE LOSS (psi)				1 ¹ / ₄ INCH WATER SERVICE PRESSURE LOSS (psi)			
	Length of water service pipe (feet)				Length of water service pipe (feet)				Length of water service pipe (feet)			
	40 or less	41 to 75	76 to 100	101 to 150	40 or less	41 to 75	76 to 100	101 to 150	40 or less	41 to 75	76 to 100	101 to 150
8	5.1	8.7	11.8	17.4	1.5	2.5	3.4	5.1	0.6	1.0	1.3	1.9
10	7.7	13.1	17.8	26.3	2.3	3.8	5.2	7.7	0.8	1.4	2.0	2.9
12	10.8	18.4	24.9	NP	3.2	5.4	7.3	10.7	1.2	2.0	2.7	4.0
14	14.4	24.5	NP	NP	4.2	7.1	9.6	14.3	1.6	2.7	3.6	5.4
16	18.4	NP	NP	NP	5.4	9.1	12.4	18.3	2.0	3.4	4.7	6.9
18	22.9	NP	NP	NP	6.7	11.4	15.4	22.7	2.5	4.3	5.8	8.6
20	27.8	NP	NP	NP	8.1	13.8	18.7	27.6	3.1	5.2	7.0	10.4
22	NP	NP	NP	NP	9.7	16.5	22.3	NP	3.7	6.2	8.4	12.4
24	NP	NP	NP	NP	11.4	19.3	26.2	NP	4.3	7.3	9.9	14.6
26	NP	NP	NP	NP	13.2	22.4	NP	NP	5.0	8.5	11.4	16.9
28	NP	NP	NP	NP	15.1	25.7	NP	NP	5.7	9.7	13.1	19.4
30	NP	NP	NP	NP	17.2	NP	NP	NP	6.5	11.0	14.9	22.0
32	NP	NP	NP	NP	19.4	NP	NP	NP	7.3	12.4	16.8	24.8
34	NP	NP	NP	NP	21.7	NP	NP	NP	8.2	13.9	18.8	NP
36	NP	NP	NP	NP	24.1	NP	NP	NP	9.1	15.4	20.9	NP

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 gallon per minute = 0.063 L/s, 1 pound per square inch = 6.895 kPa.

NP - Not permitted. Pressure loss exceeds reasonable limits.

- a. Values are applicable for underground piping materials listed in Table P2905.4 and are based on an SDR of 11 and a Hazen Williams C Factor of 150.
- b. Values include the following length allowances for fittings: 25% length increase for actual lengths up to 100 feet and 15% length increase for actual lengths over 100 feet.
- c. Flow rate from Section P2904.4.2. Add 5 gpm to the flow rate required by Section P2904.4.2 where the water-service pipe supplies more than one dwelling.

TABLE P2904.6.2(2)
MINIMUM WATER METER PRESSURE LOSS (PL_m)^a

FLOW RATE (gallons per minute, gpm) ^b	⁵ / ₈ -INCH METER PRESSURE LOSS (pounds per square inch, psi)	³ / ₄ -INCH METER PRESSURE LOSS (pounds per square inch, psi)	1-INCH METER PRESSURE LOSS (pounds per square inch, psi)
8	2	1	1
10	3	1	1
12	4	1	1
14	5	2	1
16	7	3	1
18	9	4	1
20	11	4	2
22	NP	5	2
24	NP	5	2
26	NP	6	2
28	NP	6	2
30	NP	7	2
32	NP	7	3
34	NP	8	3
36	NP	8	3

For SI: 1 inch = 25.4 mm, 1 pound per square inch = 6.895 kPa, 1 gallon per minute = 0.063 L/s.

NP - Not permitted unless the actual water meter pressure loss is known.

- a. Table 2904.6.2(2) establishes conservative values for water meter pressure loss or installations where the water meter loss is unknown. Where the actual water meter pressure loss is known, P_m shall be the actual loss.
- b. Flow rate from Section P2904.4.2. Add 5 gpm to the flow rate required by Section P2904.4.2 where the water-service pipe supplies more than one dwelling.

TABLE P2904.6.2(3)
ELEVATION LOSS (PL_e)

ELEVATION (feet)	PRESSURE LOSS (psi)
5	2.2
10	4.4
15	6.5
20	8.7
25	10.9
30	13
35	15.2
40	17.4

For SI: 1 foot = 304.8 mm, 1 pound per square inch = 6.895 kPa.

TABLE P2904.6.2(4)
ALLOWABLE PIPE LENGTH FOR 3/4-INCH TYPE M COPPER WATER TUBING

SPRINKLER FLOW RATE ^a (gpm)	WATER DISTRIBUTION SIZE (inch)	AVAILABLE PRESSURE - P _r (psi)									
		15	20	25	30	35	40	45	50	55	60
		Allowable length of pipe from service valve to farthest sprinkler (feet)									
8	3/4	217	289	361	434	506	578	650	723	795	867
9	3/4	174	232	291	349	407	465	523	581	639	697
10	3/4	143	191	239	287	335	383	430	478	526	574
11	3/4	120	160	200	241	281	321	361	401	441	481
12	3/4	102	137	171	205	239	273	307	341	375	410
13	3/4	88	118	147	177	206	235	265	294	324	353
14	3/4	77	103	128	154	180	205	231	257	282	308
15	3/4	68	90	113	136	158	181	203	226	248	271
16	3/4	60	80	100	120	140	160	180	200	220	241
17	3/4	54	72	90	108	125	143	161	179	197	215
18	3/4	48	64	81	97	113	129	145	161	177	193
19	3/4	44	58	73	88	102	117	131	146	160	175
20	3/4	40	53	66	80	93	106	119	133	146	159
21	3/4	36	48	61	73	85	97	109	121	133	145
22	3/4	33	44	56	67	78	89	100	111	122	133
23	3/4	31	41	51	61	72	82	92	102	113	123
24	3/4	28	38	47	57	66	76	85	95	104	114
25	3/4	26	35	44	53	61	70	79	88	97	105
26	3/4	24	33	41	49	57	65	73	82	90	98
27	3/4	23	30	38	46	53	61	69	76	84	91
28	3/4	21	28	36	43	50	57	64	71	78	85
29	3/4	20	27	33	40	47	53	60	67	73	80
30	3/4	19	25	31	38	44	50	56	63	69	75
31	3/4	18	24	29	35	41	47	53	59	65	71
32	3/4	17	22	28	33	39	44	50	56	61	67
33	3/4	16	21	26	32	37	42	47	53	58	63
34	3/4	NP	20	25	30	35	40	45	50	55	60
35	3/4	NP	19	24	28	33	38	42	47	52	57
36	3/4	NP	18	22	27	31	36	40	45	49	54
37	3/4	NP	17	21	26	30	34	38	43	47	51
38	3/4	NP	16	20	24	28	32	36	40	45	49
39	3/4	NP	15	19	23	27	31	35	39	42	46
40	3/4	NP	NP	18	22	26	29	33	37	40	44

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per square inch = 6.895 kPa, 1 gallon per minute = 0.963 L/s.

NP - Not permitted

a. Flow rate from Section P2904.4.2.

TABLE P2904.6.2(5)
ALLOWABLE PIPE LENGTH FOR 1-INCH TYPE M COPPER WATER TUBING

SPRINKLER FLOW RATE ^a (gpm)	WATER DISTRIBUTION SIZE (inch)	AVAILABLE PRESSURE - P _i (psi)									
		15	20	25	30	35	40	45	50	55	60
Allowable length of pipe from service valve to farthest sprinkler (feet)											
8	1	806	1075	1343	1612	1881	2149	2418	2687	2955	3224
9	1	648	864	1080	1296	1512	1728	1945	2161	2377	2593
10	1	533	711	889	1067	1245	1422	1600	1778	1956	2134
11	1	447	586	745	894	1043	1192	1341	1491	1640	1789
12	1	381	508	634	761	888	1015	1142	1269	1396	1523
13	1	328	438	547	657	766	875	985	1094	1204	1313
14	1	286	382	477	572	668	763	859	954	1049	1145
15	1	252	336	420	504	588	672	756	840	924	1008
16	1	224	298	373	447	522	596	671	745	820	894
17	1	200	266	333	400	466	533	600	666	733	799
18	1	180	240	300	360	420	479	539	599	659	719
19	1	163	217	271	325	380	434	488	542	597	651
20	1	148	197	247	296	345	395	444	493	543	592
21	1	135	180	225	270	315	360	406	451	496	541
22	1	124	165	207	248	289	331	372	413	455	496
23	1	114	152	190	228	267	305	343	381	419	457
24	1	106	141	176	211	246	282	317	352	387	422
25	1	98	131	163	196	228	261	294	326	359	392
26	1	91	121	152	182	212	243	273	304	334	364
27	1	85	113	142	170	198	226	255	283	311	340
28	1	79	106	132	159	185	212	238	265	291	318
29	1	74	99	124	149	174	198	223	248	273	298
30	1	70	93	116	140	163	186	210	233	256	280
31	1	66	88	110	132	153	175	197	219	241	263
32	1	62	83	103	124	145	165	186	207	227	248
33	1	59	78	98	117	137	156	176	195	215	234
34	1	55	74	92	111	129	148	166	185	203	222
35	1	53	70	88	105	123	140	158	175	193	210
36	1	50	66	83	100	116	133	150	166	183	199
37	1	47	63	79	95	111	126	142	158	174	190
38	1	45	60	75	90	105	120	135	150	165	181
39	1	43	57	72	86	100	115	129	143	158	172
40	1	41	55	68	82	96	109	123	137	150	164

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per square inch = 6.895 kPa, 1 gallon per minute = 0.963 L/s.
a. Flow rate from Section P2904.4.2.

TABLE P2904.6.2(6)
ALLOWABLE PIPE LENGTH FOR 3/4-INCH CPVC PIPE

SPRINKLER FLOW RATE ^a (gpm)	WATER DISTRIBUTION SIZE (inch)	AVAILABLE PRESSURE - P _i (psi)									
		15	20	25	30	35	40	45	50	55	60
		Allowable length of pipe from service valve to farthest sprinkler (feet)									
8	3/4	348	465	581	697	813	929	1045	1161	1278	1394
9	3/4	280	374	467	560	654	747	841	934	1027	1121
10	3/4	231	307	384	461	538	615	692	769	845	922
11	3/4	193	258	322	387	451	515	580	644	709	773
12	3/4	165	219	274	329	384	439	494	549	603	658
13	3/4	142	189	237	284	331	378	426	473	520	568
14	3/4	124	165	206	247	289	330	371	412	454	495
15	3/4	109	145	182	218	254	290	327	363	399	436
16	3/4	97	129	161	193	226	258	290	322	354	387
17	3/4	86	115	144	173	202	230	259	288	317	346
18	3/4	78	104	130	155	181	207	233	259	285	311
19	3/4	70	94	117	141	164	188	211	234	258	281
20	3/4	64	85	107	128	149	171	192	213	235	256
21	3/4	58	78	97	117	136	156	175	195	214	234
22	3/4	54	71	89	107	125	143	161	179	197	214
23	3/4	49	66	82	99	115	132	148	165	181	198
24	3/4	46	61	76	91	107	122	137	152	167	183
25	3/4	42	56	71	85	99	113	127	141	155	169
26	3/4	39	52	66	79	92	105	118	131	144	157
27	3/4	37	49	61	73	86	98	110	122	135	147
28	3/4	34	46	57	69	80	92	103	114	126	137
29	3/4	32	43	54	64	75	86	96	107	118	129
30	3/4	30	40	50	60	70	81	91	101	111	121
31	3/4	28	38	47	57	66	76	85	95	104	114
32	3/4	27	36	45	54	63	71	80	89	98	107
33	3/4	25	34	42	51	59	68	76	84	93	101
34	3/4	24	32	40	48	56	64	72	80	88	96
35	3/4	23	30	38	45	53	61	68	76	83	91
36	3/4	22	29	36	43	50	57	65	72	79	86
37	3/4	20	27	34	41	48	55	61	68	75	82
38	3/4	20	26	33	39	46	52	59	65	72	78
39	3/4	19	25	31	37	43	50	56	62	68	74
40	3/4	18	24	30	35	41	47	53	59	65	71

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per square inch = 6.895 kPa, 1 gallon per minute = 0.963 L/s.

a. Flow rate from Section P2904.4.2.

TABLE P2904.6.2(7)
ALLOWABLE PIPE LENGTH FOR 1-INCH CPVC PIPE

SPRINKLER FLOW RATE ^a (gpm)	WATER DISTRIBUTION SIZE (inch)	AVAILABLE PRESSURE - P _i (psi)									
		15	20	25	30	35	40	45	50	55	60
		Allowable length of pipe from service valve to farthest sprinkler (feet)									
8	1	1049	1398	1748	2098	2447	2797	3146	3496	3845	4195
9	1	843	1125	1406	1687	1968	2249	2530	2811	3093	3374
10	1	694	925	1157	1388	1619	1851	2082	2314	2545	2776
11	1	582	776	970	1164	1358	1552	1746	1940	2133	2327
12	1	495	660	826	991	1156	1321	1486	1651	1816	1981
13	1	427	570	712	854	997	1139	1281	1424	1566	1709
14	1	372	497	621	745	869	993	1117	1241	1366	1490
15	1	328	437	546	656	765	874	983	1093	1202	1311
16	1	291	388	485	582	679	776	873	970	1067	1164
17	1	260	347	433	520	607	693	780	867	954	1040
18	1	234	312	390	468	546	624	702	780	858	936
19	1	212	282	353	423	494	565	635	706	776	847
20	1	193	257	321	385	449	513	578	642	706	770
21	1	176	235	293	352	410	469	528	586	645	704
22	1	161	215	269	323	377	430	484	538	592	646
23	1	149	198	248	297	347	396	446	496	545	595
24	1	137	183	229	275	321	366	412	458	504	550
25	1	127	170	212	255	297	340	382	425	467	510
26	1	118	158	197	237	276	316	355	395	434	474
27	1	111	147	184	221	258	295	332	368	405	442
28	1	103	138	172	207	241	275	310	344	379	413
29	1	97	129	161	194	226	258	290	323	355	387
30	1	91	121	152	182	212	242	273	303	333	364
31	1	86	114	143	171	200	228	257	285	314	342
32	1	81	108	134	161	188	215	242	269	296	323
33	1	76	102	127	152	178	203	229	254	280	305
34	1	72	96	120	144	168	192	216	240	265	289
35	1	68	91	114	137	160	182	205	228	251	273
36	1	65	87	108	130	151	173	195	216	238	260
37	1	62	82	103	123	144	165	185	206	226	247
38	1	59	78	98	117	137	157	176	196	215	235
39	1	56	75	93	112	131	149	168	187	205	224
40	1	53	71	89	107	125	142	160	178	196	214

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per square inch = 6.895 kPa, 1 gallon per minute = 0.963 L/s.
a. Flow rate from Section P2904.4.2.

TABLE P2904.6.2(8)
ALLOWABLE PIPE LENGTH FOR 3/4-INCH PEX TUBING

SPRINKLER FLOW RATE ^a (gpm)	WATER DISTRIBUTION SIZE (inch)	AVAILABLE PRESSURE - P _i (psi)									
		15	20	25	30	35	40	45	50	55	60
		Allowable length of pipe from service valve to farthest sprinkler (feet)									
8	3/4	93	123	154	185	216	247	278	309	339	370
9	3/4	74	99	124	149	174	199	223	248	273	298
10	3/4	61	82	102	123	143	163	184	204	225	245
11	3/4	51	68	86	103	120	137	154	171	188	205
12	3/4	44	58	73	87	102	117	131	146	160	175
13	3/4	38	50	63	75	88	101	113	126	138	151
14	3/4	33	44	55	66	77	88	99	110	121	132
15	3/4	29	39	48	58	68	77	87	96	106	116
16	3/4	26	34	43	51	60	68	77	86	94	103
17	3/4	23	31	38	46	54	61	69	77	84	92
18	3/4	21	28	34	41	48	55	62	69	76	83
19	3/4	19	25	31	37	44	50	56	62	69	75
20	3/4	17	23	28	34	40	45	51	57	62	68
21	3/4	16	21	26	31	36	41	47	52	57	62
22	3/4	NP	19	24	28	33	38	43	47	52	57
23	3/4	NP	17	22	26	31	35	39	44	48	52
24	3/4	NP	16	20	24	28	32	36	40	44	49
25	3/4	NP	NP	19	22	26	30	34	37	41	45
26	3/4	NP	NP	17	21	24	28	31	35	38	42
27	3/4	NP	NP	16	20	23	26	29	33	36	39
28	3/4	NP	NP	15	18	21	24	27	30	33	36
29	3/4	NP	NP	NP	17	20	23	26	28	31	34
30	3/4	NP	NP	NP	16	19	21	24	27	29	32
31	3/4	NP	NP	NP	15	18	20	23	25	28	30
32	3/4	NP	NP	NP	NP	17	19	21	24	26	28
33	3/4	NP	NP	NP	NP	16	18	20	22	25	27
34	3/4	NP	NP	NP	NP	NP	17	19	21	23	25
35	3/4	NP	NP	NP	NP	NP	16	18	20	22	24
36	3/4	NP	NP	NP	NP	NP	15	17	19	21	23
37	3/4	NP	NP	NP	NP	NP	NP	16	18	20	22
38	3/4	NP	NP	NP	NP	NP	NP	16	17	19	21
39	3/4	NP	NP	NP	NP	NP	NP	NP	16	18	20
40	3/4	NP	NP	NP	NP	NP	NP	NP	16	17	19

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per square inch = 6.895 kPa, 1 gallon per minute = 0.963 L/s.

NP - Not permitted.

a. Flow rate from Section P2904.4.2.

TABLE P2904.6.2(9)
ALLOWABLE PIPE LENGTH FOR 1-INCH PEX TUBING

SPRINKLER FLOW RATE ^a (gpm)	WATER DISTRIBUTION SIZE (inch)	AVAILABLE PRESSURE - P _r (psi)									
		15	20	25	30	35	40	45	50	55	60
		Allowable length of pipe from service valve to farthest sprinkler (feet)									
8	1	314	418	523	628	732	837	941	1046	1151	1255
9	1	252	336	421	505	589	673	757	841	925	1009
10	1	208	277	346	415	485	554	623	692	761	831
11	1	174	232	290	348	406	464	522	580	638	696
12	1	148	198	247	296	346	395	445	494	543	593
13	1	128	170	213	256	298	341	383	426	469	511
14	1	111	149	186	223	260	297	334	371	409	446
15	1	98	131	163	196	229	262	294	327	360	392
16	1	87	116	145	174	203	232	261	290	319	348
17	1	78	104	130	156	182	208	233	259	285	311
18	1	70	93	117	140	163	187	210	233	257	280
19	1	63	84	106	127	148	169	190	211	232	253
20	1	58	77	96	115	134	154	173	192	211	230
21	1	53	70	88	105	123	140	158	175	193	211
22	1	48	64	80	97	113	129	145	161	177	193
23	1	44	59	74	89	104	119	133	148	163	178
24	1	41	55	69	82	96	110	123	137	151	164
25	1	38	51	64	76	89	102	114	127	140	152
26	1	35	47	59	71	83	95	106	118	130	142
27	1	33	44	55	66	77	88	99	110	121	132
28	1	31	41	52	62	72	82	93	103	113	124
29	1	29	39	48	58	68	77	87	97	106	116
30	1	27	36	45	54	63	73	82	91	100	109
31	1	26	34	43	51	60	68	77	85	94	102
32	1	24	32	40	48	56	64	72	80	89	97
33	1	23	30	38	46	53	61	68	76	84	91
34	1	22	29	36	43	50	58	65	72	79	86
35	1	20	27	34	41	48	55	61	68	75	82
36	1	19	26	32	39	45	52	58	65	71	78
37	1	18	25	31	37	43	49	55	62	68	74
38	1	18	23	29	35	41	47	53	59	64	70
39	1	17	22	28	33	39	45	50	56	61	67
40	1	16	21	27	32	37	43	48	53	59	64

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per square inch = 6.895 kPa, 1 gallon per minute = 0.963 L/s.

a. Flow rate from Section P2904.4.2.

3. IRC 2006, Preface, Development, Page iii, 3rd paragraph "This code is founded on principles intended to establish provisions consistent with the scope of a residential code that adequately protects public health, safety and welfare; *provisions that do not unnecessarily increase construction costs*; provisions that do not restrict the use of new materials, products or methods of construction; and *provisions that do not give preferential treatment to particular types or classes of materials, products or methods of construction.*" *[Emphasis added]*
4. IRC 2006, R101.3 Purpose. "The purpose of this code is to *provide minimum requirements* to safeguard the public safety, health and general welfare through affordability, structural strength, means of egress facilities, stability, sanitation, light and ventilation, energy conservation and safety to life and property from fire and other hazards attributed to the built environment. *[Emphasis added]*

Final Action: AS AM AMPC _____ D

RB62-07/08

R313.1 (New), Appendix P, Chapter 43

Proposed Change as Submitted:

Proponent: Sandra Stanek, Fire Code Consultants LLC, representing herself; John C. Dean, National Association of State Fire Marshals (NASFM)

1. Add new text as follows:

**SECTION R313
SMOKE ALARMS FIRE SPRINKLER SYSTEMS**

R313.1 General. An approved automatic fire sprinkler system shall be installed in new one-and two-family dwellings and townhouses in accordance with NFPA 13D.

(Renumber subsequent sections)

2. Delete appendix without substitution:

**APPENDIX P
FIRE SPRINKLER SYSTEM**

~~The provisions contained in this appendix are not mandatory unless specifically referenced in the adopting ordinance.~~

~~**AP101 Fire sprinklers.** An approved automatic fire sprinkler system shall be installed in new one and two family dwellings and townhouses in accordance with Section 903.3.1 of the *International Building Code*.~~

3. Add standard to Chapter 43 as follows:

NFPA
13D-07 Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes

Reason (Stanek): All new houses should have fire sprinklers. The majority of the members attending the Rochester ROC meeting in May 07 were in favor of residential sprinklers in all new one & two family dwellings. I believe the will of the majority of ICC members as shown in Rochester should be upheld.

There are many reasons why NOW is the time to change the IRC and establish residential sprinklers as part of the minimum safety package set forth in the national model code for residential construction. Substantial justification was offered last cycle, and additional substantiation is offered in this proposal, primarily focusing on the issues raised in opposition.

1. System freeze-ups in cold climates: Opponents of residential sprinklers assert that system freeze-ups will cause problems in cold climates. However, a sprinkler system poses no greater risk of freezing than domestic plumbing if the system is properly designed and installed. Freeze-ups result from design or installation errors that can occur with any plumbing system, and it is incorrect to suggest that sprinkler systems in cold climates are predisposed to freezing. In fact, on the contrary, there are many jurisdictions with severely freezing climates that have adopted residential sprinkler ordinances, which would surely have been repealed if freezing problems were widespread. This simply hasn't happened. There are many options available to sprinkler homes in freezing climates to combat the risks of frozen piping. These include, among others:

- o Using sidewall sprinklers supplied by pipes running in walls, soffits, closets and crawl spaces to keep sprinkler piping out of unheated attics, or
- o Properly installing piping beneath the insulation in attics to protect the piping from the unheated attic space. This technique has been used in climates as cold as Wrangle, Alaska to successfully sprinkler single family homes.

The Residential Fire Safety Institute documents that hundreds of jurisdictions in at least 25 states have adopted residential sprinkler legislation, including mountainous states and Northern states ranging from New York to Alaska. In addition, sprinkler systems are required in all residential occupancies governed by the IBC, which include group homes and townhouses exceeding 3-stories in height. The bottom line is that residential sprinkler systems have been installed in homes located in freezing climates for many years, and if freeze concerns are being addressed in these cases, as they must be, then homes sprinklered in accordance with the IRC can and will be handled in the same manner.

2. Cost impact of inflated water tap fees: Opponents of residential sprinklers argue that sprinklers costs will skyrocket in jurisdictions where local water purveyors inflate the cost of larger water taps. Obviously, this is not a building code issue, and local fees should not serve as an impediment to national policy established by the IRC. Nevertheless, an experienced designer can avoid the use of a larger meter, and associated fee increases, by applying alternative design approaches that are already permitted by NFPA 13D. Such alternatives include:

- o Using reduced sprinkler spacing in rooms protected by more than one sprinkler. UL listed sprinklers are already on the market for reduced spacing that only require 9 gpm per sprinkler. Given that NFPA 13D requires that a maximum of two sprinklers be calculated for dwelling systems, this yields a total demand of 18 gpm, which can be supplied by many municipal systems using a standard 5/8-inch meter. With this design approach, extended coverage sprinklers can still be used in rooms requiring only a single sprinkler. Although this design approach may not be the best choice for every case, it is particularly suited to smaller homes at the entry/affordable housing level.
- o If the tap fees for larger supplies are substantially out of line, there is always an option available to install a small tank/pump system supplied by a standard size water tap. Obviously, this option comes with its own associated cost, but it does provide an upper limit to the potential impact of high tap fees.

The options listed above are available today, and they meet NFPA 13D. Obviously, the most effective approach to fighting unfairly high tap fees is to encourage that the fees be reduced when increased meter sizes are being used to support the installation of a fire sprinkler system. Mandating sprinklers will put builders and code officials on the same side of this issue, trying to get affordable sprinklers, rather than arguing over whether sprinklers should be provided. The home building industry could be using its powerful political contacts to reduce the costs of tap fees rather than resisting the efforts to install fire sprinklers.

For such an effort to be successful, water purveyors will need to understand that increasing meter/tap sizes to supply residential sprinklers does not increase the demand on a public water system. On the contrary, residential sprinklers actually reduce demand because sprinklers only flow water when a fire occurs, and the amount of water used by a residential fire sprinkler system is only a fraction of what firefighters use to extinguish fires in unsprinklered properties. This argument has already successfully resolved tap fee issues in some jurisdictions.

3. Cost of sprinklers and impact on affordable housing. Before specifically addressing the cost of sprinklers, there is a basic question that has to be asked when it comes to the price of housing in America, "What drives the price of a new home?" In many markets, the answer to this question is not "construction costs." Instead, prices are established based on an analysis of what the market will bear. In these markets, sales prices will continue to rise as long as there are buyers who are willing to pay the asking price, and in these markets, it would be disingenuous, at best, to suggest that the cost of fire sprinklers would price buyers out of the market.

In other segments of the home building industry, new home pricing does follow the "cost plus" model, and in these cases, the added cost of a sprinkler system is an important consideration. Such costs will be a function of many variables, including but not limited to, the availability of a public water supply, the size of the home, the level of competition in the local market, the design approach, the climate and enhancements that may be desired by the owner, such as custom colored cover plates for sprinklers.

One source of cost data associated with the widespread installation of residential sprinklers is available from Scottsdale, Arizona. Scottsdale, which became one of the first major U.S. jurisdictions to require residential sprinklers roughly 20 years ago, serves as an excellent demonstration case to show the effects of a community's decision to require residential sprinklers on system cost, life safety, property protection and the local fire-protection infrastructure. With respect to cost, residential sprinkler systems in Scottsdale were recently quoted as costing \$0.55 to \$0.75 per square foot, and there are now well over 40,000 sprinklered homes in the city. No one is suggesting that every other jurisdiction where residential sprinklers are required will match Scottsdale's cost structure, but Scottsdale's experience clearly demonstrates that a competitive marketplace greatly reduces sprinkler costs.

Technology, creative design approaches and labor charges also impact these costs. Multipurpose systems, which are already permitted by NFPA 13D, have been shown to be particularly well suited to certain types of homes because they add minimal cost to the plumbing installation. Recent surveys of sprinkler costs for affordable homes in the 1,000 to 1,200 square foot range showed that the added cost of materials related to sprinkler protection was in the \$0.25 to 0.30 per square foot range, and the sprinkler installation required less than 8 hours of additional labor. While no cost increase is inconsequential when dealing with affordable housing, the significant fire safety benefits gained by installing sprinklers for such a small cost (in the \$4/month range on a 30-year mortgage, not including any insurance or tax credit) certainly appears to be money well invested.

With respect to the cost of sprinklers in larger homes, the actual impact of sprinkler costs on the owner's monthly payment isn't much different. Figuring the cost of a hypothetical \$3,000 sprinkler system in a \$300,000 home with a 6.5% mortgage, a 5% credit on a \$2,000/year insurance bill, and a combined Federal/State income tax rate of 33%; the net cost of fire sprinklers, after mortgage related tax deductions, would be \$4.37 per month. This represents a 0.23% increase in the monthly payment and roughly equates to the cost of a premium beverage at Starbucks. The total cost on an annual basis would be \$52.44, which would easily be offset by insurance reductions.

With all of the foregoing information in mind, it seems fair to say that the true impact on the housing market associated with requiring residential sprinklers will be far less than what opponents of residential sprinklers would like code officials to believe. It has been demonstrated many times in the many jurisdictions throughout the country where residential sprinklers are required that housing markets are not affected by fire sprinklers. These local experiences show us that, once the IRC requires residential sprinklers, home building will continue as it always has. Home prices will fluctuate based on the law of supply and demand; home builders will adjust their products to meet consumer preferences and trends; and home buyers will continue to buy homes.

For a full cost/benefit analysis of the impact of sprinklers on society, see the article, "Cost/Benefit to Society for Having Sprinklers in One and Two Family Dwellings - A Pessimistic Analysis", written by Kenneth E. Isman, P.E. for *SQ Magazine* in the Fall 2005 issue. It should be noted that the article is not designed to show what the fire sprinkler industry thinks will happen if all one and two family dwellings are sprinklered. Instead, the article was written to show that sprinklers still make sense, from a cost/benefit perspective, even if all of the pessimistic assumptions of the homebuilders are correct such as the assumption that fires only occur in older homes. If a more realistic approach is taken, then the benefits for fire sprinklers far outweigh the costs.

4. Does the public want residential sprinklers? Opponents of residential sprinklers have suggested that the general public, which isn't well represented at code hearings, would oppose residential sprinklers, but a recent national poll conducted by Harris Interactive indicates that this claim misrepresents public opinion. The survey of over 1,000 adults revealed that:

- o 45% of homeowners said that a sprinklered home is more desirable than an unsprinklered home,
- o 69% of homeowners said that having a fire sprinkler system increases the value of a home, and
- o 38% of homeowners said that they would be more likely to purchase a home with fire sprinklers than without. The reason that this number isn't higher appears largely tied to an unfounded fear of water damage. 48% of homeowners cited water damage as the reason they would not want to install a sprinkler system. Clearly, this indicates a need for public education on the operation and reliability of sprinkler systems as being a major component in enhancing public support and demand for sprinklers.

The results of this survey support the assertion that the general public has become aware of and has warmed up to the concept of residential sprinklers. Certainly, this is due, at least in part, to the fact that many homeowners live in multifamily occupancies before they own a one- or two-family dwelling. Now that the IRC requires all new multi-family dwellings to be sprinklered, it is fair to say that the home-buying public will continue to become more familiar with residential sprinklers and that public support for residential fire sprinkler systems will continue to grow.

5. Correlation between a home's age and fire risk...aren't homes built to the IRC already safe enough? Opponents of residential sprinklers would like to convince us that residential fire deaths are a function of a home's age and that new homes, built in accordance with the IRC, are safe. Many people buy these arguments because, on the surface, they seem to make sense. However, further analysis paints a different picture.

First, most residential fires deaths result from fires caused directly or indirectly by people. Compliance with the IRC doesn't prevent these types of fires or many other common fire causes, and once a fire starts, compliance with the IRC will not slow its spread. The speed by which a fire spreads in a home is instead a function of contents and room geometry.

Second, a simplistic correlation of residential fire deaths with the age of homes ignores several variables that tend to vary based on the age of a home. These include the socioeconomic status of the occupants, the density of occupants, the age of the occupants, and the presence or omission of smoke detectors (discussed separately below), among others. Fire safety experts know that these factors are far more likely to be contributory factors in fire deaths than the age of a structure. In addition, the fact that more fire deaths occur in "older" homes than newer homes may also be related to the fact that the median age of homes in the U.S., according to a recent HUD study, is 32 years. By sheer numbers, a lot of people live in older homes.

6. Since only a small percentage of fire department responses are for actual structure fires, does the fire service really need residential sprinklers? With respect to residential fire losses, the statistics submitted with last cycle's proposal clearly demonstrated the scope and magnitude of the residential fire problem in the United States. Although the percentage of emergency responses to residential structure fires is a small fraction of overall fire department responses, a shocking 45 percent of firefighter deaths that occur on the fire ground occur at residential occupancies, almost always 1- and 2-family dwellings. Dwelling fires have three characteristics that present disproportionate risks as compared to fires in other occupancies:

- o First, they are typically well developed, post-flashover fires by the time the fire department arrives.
- o Second, they often occur at night, and
- o Third, they often involve a real or perceived need to perform search and rescue operations.

In short, dwelling fires represent a small percentage of our emergency responses but account for a very large percentage of firefighters who are killed in the line of duty.

It is also important to point out that the ability of the fire service to protect our communities by responding to residential fires has declined significantly in recent years, and the situation isn't getting better. The public has a relatively simple expectation with respect to the fire department when a fire happens...they call 911, and the fire department responds to rescue trapped occupants and put out the fire. Unfortunately, that expectation isn't being effectively met in many parts of the country because of dwindling resources.

Nationally, volunteer firefighters, who comprise 73% of the American fire service and protect the vast majority of the geographic area of the United States, are becoming harder and harder to retain. In New York alone, the ranks of volunteer firefighters have declined from 110,000 in the early 1990s to approximately 85,000 today. Considering that all-volunteer fire departments protect 95% of New York communities with a population of less than 10,000, what will happen when there are no longer enough firefighters to respond to 911 calls? This situation is national. It is not unique to New York.

Long after many home builders leave a community, the homes that they leave behind and the people who live in them continue to place demands on the fire service. While the fire service will always strive to meet those demands, it is unrealistic to expect that our volunteers will always be able to do so. Therefore, the fire services' message is simple...if the public is going to be protected from home fires; it's time that we build that protection into new construction.

7. Aren't smoke alarms enough? Homebuilders often suggest that smoke alarms are good enough to protect the public and that residential sprinklers aren't justified. Everyone can agree that smoke alarms save lives and that they are largely responsible for a reduction in the fire death rates that occurred over the past 30 years. Nevertheless, smoke alarms on their own do nothing to stop the spread of fire, protect property or protect firefighters.

Two other issues related to reliance on smoke alarms are of concern. First, as smoke alarms age, their reliability declines. This concern prompted smoke alarm manufacturers and testing laboratories to begin stamping an expiration date on each unit indicating a 10-year replacement cycle. How many alarms will actually be replaced at 10-year intervals, and what will happen to the reliability of alarms that are not replaced? Although an estimated 96% of U.S. homes with telephones now have at least one smoke alarm, in 1/4 of reported fires in smoke alarm equipped homes, the devices didn't work.

The second issue related to the effectiveness of smoke alarms in further reducing fire death rates has to do with their performance and waking effectiveness. In a study that was just completed in 2006, only 58% of a test group of children ages 6-12 awakened when a standard smoke alarm sounded, and only 38% of the test group successfully evacuated. The median time to awaken was 3 minutes, and the median time to escape was the maximum allowed 5 minutes.

Another study revealed that a surprising 34% of fire deaths in one- and two-family dwellings during the 2000-2004 period occurred in homes with a working smoke detector. Perhaps this statistic correlates with the fact that fire death rates for the young and the elderly, those who are least likely to be capable of self-preservation even if they are awakened by a smoke detector, are roughly double those for individuals in the central age group. Smoke detectors are good, but they can only go so far in reducing the nation's fire death and injury rates. We need residential sprinklers.

8. What about homes without a public water supply? Opponents of residential sprinklers have suggested that it is impractical and too expensive to require sprinklers in homes that will use a well as the water supply. However, design options are available that make wells a viable water supply for both sprinklers and domestic service. Wells essentially fall into two categories, deep and shallow. With a shallow well, the well will likely be designed to provide a direct feed to the home, with no intervening tank. With these types of systems, pumps can be selected at reasonable costs that are capable of supplying both the domestic and sprinkler demands. Constant pressure, variable speed pumps are an excellent choice for this type of application.

One question that is frequently raised with respect to direct feed well systems involves the "recharge" rate, or the rate at which water can keep up with the required flow. Wells may not be capable of keeping up with the demand associated with a sprinkler system, which will typically be 20 gallons per minute or more. Many automatically assume that a tank and a secondary pump are necessary in these cases, greatly increasing the cost of the sprinkler system, but a lesser known yet simple approach called "developing the well" is a much better solution.

Developing a well essentially creates an underground cistern that replaces the need for a tank. The approach involves digging the well substantially below the water table and allowing the hole to fill with water, retaining the needed capacity underground. By using an appropriate pump with a developed well, an interior tank and pump arrangement can be avoided, and the water supply costs can be limited.

For deeper wells, there are two options. First, there are constant pressure, variable speed pumps suited for these applications. For installations utilizing this approach, a "developed well" as described above can also be used to accommodate needed water retention to satisfy the sprinkler demand.

The second alternative involves a tank and pump, which can be installed between the well pump and the plumbing system. This approach is the common arrangement utilized for deep wells supplying domestic service. To supply sprinklers simply requires that the size of the domestic supply tank be increased to something in the range of 200-300 gallons, and the secondary pump needs to have an increased flow rating. Both of these enhancements can be made at modest cost.

Some have suggested that the IRC should not require homes on wells to have fire sprinklers, yet homes in rural areas, usually corresponding to homes served by wells, are the homes that are least likely to survive a fire because of long or inadequate responses by the fire service. The solution is instead educating contractors on cost-efficient design options for well systems.

9. Impact of residential sprinklers on public and private water systems: It was suggested by one builder last cycle that the operation of residential sprinklers connected to a small water system resulted in the jurisdiction having to drain and decontaminate the entire water system. Subsequent identification and review of the cited event revealed that the concern regarding contamination of the water supply, which was a private system, was linked to the use of fire hydrants during suppression activities, not the sprinkler system. This clearly makes more sense, and for the record, the fire actually started outside of this building, spread to the interior, and sprinklers still helped to stop the fire's progress.

To suggest that the water demand caused by operation of a one- or two-family dwelling or townhouse sprinkler system will lead to contamination of an entire community water system is absurd and demonstrates a complete lack of understanding regarding residential sprinkler systems. The same logic would suggest that a single broken residential pipe, which would flow more water than operating sprinklers, would have the same result. Any water system that is this feeble has much bigger concerns than residential sprinklers.

The truth is that residential sprinklers actually result in a significantly decreased demand on water systems because residential sprinklers use far less water than firefighters to extinguish a fire. Scottsdale, Arizona's experience provides data to support this claim. Scottsdale found that the average estimated sprinkler flow per residential fire incident was 341 gallons, as compared to an estimated manual suppression flow for unsprinklered residential fire incidents of 2,935 gallons.

10. Wait for more cost-effective approaches to residential sprinkler protection before adopting a requirement in the IRC. Opponents of residential sprinklers suggest that we should hold off on requiring such systems in dwellings until improvements in technology make the systems more cost effective. The truth is that many recent improvements in sprinkler technology have largely improved cost effectiveness already. The real problem isn't a lack of cost effective design and installation options.

Instead, the problem appears to stem from a lack of communication within the supply, design and installation communities regarding these efficient design options and the fact that momentum often drives us to continue doing things the way we've done them in the past. To drive the industry toward more innovative solutions, more competition is needed, and changing the IRC to require residential sprinklers will create the demand that will increase competition and motivate cost efficient designs.

Market demand will also drive the creation of design tools that will simplify the exercises of locating sprinklers and sizing pipe. These tools, which will present design requirements in prescriptive, cookbook formats, have already been developed, and are being used in communities like Prince Georges County, Maryland, with a great deal of success for well over ten years. It is expected that they can easily become national in scope as more communities adopt the IRC.

11. Required maintenance: Opponents of residential sprinklers have stated that residential sprinkler systems need regular maintenance and questioned who would perform this service. Someone suggested that local fire departments will have to perform or verify maintenance, potentially raising concerns regarding right of entry.

The fact is that residential sprinkler systems are essentially maintenance free. The owner just needs to be taught what NOT to do. Don't close the valve, don't paint the sprinklers and don't hang clothes from sprinklers. Multipurpose systems are essentially tested every time the domestic water is used. For systems with water flow alarms (not required by NFPA 13D, but installed on some systems) the alarm can easily be tested by the homeowner by turning a valve to create some flow and seeing if the alarm sounds. The test is hardly rocket science and is no more complicated than testing a burglar alarm or replacing a furnace filter, operations that homeowners perform regularly. None of this maintenance would need to be performed or witnessed by the fire department.

12. Trained labor/inspectors: Opponents of residential sprinklers have suggested that, if the IRC were to require residential sprinklers, there would be a shortage of trained labor and trained inspectors to install and inspect these systems. This subject is not a legitimate concern. The fire sprinkler industry has always responded to the increased demand created by code requirements. In the seven years between 1992 and 1999, the fire sprinkler industry doubled in size (going from approximately 20 million sprinklers installed each year to 40 million sprinklers installed). During this time, the industry kept pace with demand, adding additional people to the labor force. There is no doubt that the sprinkler industry can continue to respond to the increase in demand. Once the IRC has been revised, it will take several years for jurisdictions to begin to adopt and enforce the 2009 edition. Some jurisdictions will not choose to adopt the sprinkler requirements, so the impact on the industry will be gradual. There is no question that the demand will be met by the industry as the IRC is changed, adopted and implemented at the local level.

Preliminary discussions have already taken place with the ICC and other certification bodies regarding the possibility of having specific certification programs for installers of residential sprinkler systems and local inspectors that would review and approve the installations. Training programs are underway to take people with a general knowledge of pipe fitting and teach them the additional important requirements for residential fire sprinkler systems, so that all of the installations meet NFPA 13D.

13. Leakage and mold damage: Opponents of residential sprinklers have expressed fear that sprinklers would leak and cause mold damage, which could make a home uninsurable. In response, it should be pointed out that residential sprinkler systems are no different than residential plumbing. If quality products are used and the system is properly installed, it won't leak.

With respect to sprinkler systems, sprinkler piping and fittings, and sprinklers themselves, are subject to rigorous testing to ensure quality. Unquestionably, sprinklers are far higher quality and more thoroughly tested than domestic piping and fixtures. Sprinkler tests required for listing include, among other requirements, a 700 psi hydrostatic strength test, a 500 psi leakage resistance test, a 100,000 cycle water hammer resistance test, a 35-125°F temperature cycling test, and a freeze performance test to -20°F for 24 hours. Also, sprinkler piping and components are rated for a pressure of 175 psi, while plumbing water supply systems are rated for only 80 psi.

14. Appendix P, good enough for now? Opponents of residential sprinklers have suggested that the IRC Appendix P is fairly new and that we should wait to see what happens with it. Unfortunately, this dodges the issues at hand.

When a local jurisdiction goes to adopt Appendix P, the first statement that the local homebuilders make during the hearings is, "Appendix P isn't necessary or important. After all, if sprinklers were really necessary, they would have put them in the body of the code rather than the Appendix." So, the homebuilders end up playing both sides of the fence. At the IRC hearings, they point to Appendix P and use that as justification to keep the requirements for sprinklers out of the code. Then, at the local hearings, they point to the fact that the requirements are in the Appendix as a reason not to mandate sprinklers.

Another reason that we need sprinklers in the body of the standard rather than the Appendix is that the benefits to society become significantly greater when all homes are sprinklered. With the rule in the Appendix, there will be some jurisdictions that don't pass the requirement, leaving these communities unprotected and the public will not be able to reap the benefits (in fact, they may never even know what they are missing). But with the requirements in the body of the IRC, people may debate removing them when they adopt the IRC, but at least they will have some sense of what they are losing.

A third reason that we need the requirements for sprinklers in the body of the IRC rather than the Appendix is that the fire service and the fire sprinkler industry can't bring experts to the debate in every local jurisdiction. There are tens of thousands of jurisdictions where this debate might occur and the homebuilders are going to have their local representatives loaded for these hearings. The fire service and the fire sprinkler industry just don't have the money or the personnel to compete with the homebuilders on a dollar-for-dollar basis. The debate as to the right level of fire protection for a home should be at the national level, with all of the national experts. The right decision (to put sprinklers in homes) should be done at the national level in the body of the code. Then, if people want to modify the code at the local level and take sprinklers out, they do so at their own peril and without the recommendations of the national experts.

Putting the sprinkler requirement into the body of the IRC certainly won't end the local debate, but it will at least put the burden on the home building industry to justify making an amendment to take sprinklers out. Other codes including the Uniform Fire Code, the NFPA Building Code and the Life Safety Code have already set a moral precedent by adding mandatory dwelling sprinkler requirements in their 2006 editions. The IBC and IFC have also done their parts by now requiring all residential occupancies within their respective scopes to be protected by fire sprinklers. Now it is time for the IRC to catch up.

Conclusion: Unlike many issues that we face at code hearings, THIS change strikes directly at the heart of America's fire problem. Opponents of residential sprinklers have a record of fighting just about every initial effort to improve dwelling safety. The same groups initially fought against smoke detectors, ground fault interrupters and mandatory sprinklers in multi-family residential occupancies. On each of these topics, code officials heard the same predictions of gloom and doom, but once the codes moved forward to require these features, the home building industry proceeded without so much as a detectible bump in the road. As years passed, prices for all of these features declined, some dramatically, and technology advanced to create better, yet less expensive products.

Reason (Dean): The life safety hazards in one- and two-family occupancies are clear: Between the years of 2000 and 2004 there was an average of 375,200 reported home structure fires resulting in 2,970 civilian deaths, 14,390 civilian injuries and \$5.6 billion dollars in direct property damage per year. These losses and deaths far exceed any of the other occupancy types. 75% of reported home structure fires and 87% of total fire deaths occurred in the one- and two-family dwelling environment.¹¹

The ICC documents provide much more onerous code requirements for occupancy types other than the one- and two-family dwelling. These other occupancy types have significantly less fire death and loss history, yet they are provided with greater protection. Based on the current code requirements, the protection levels in the IRC do not match the life safety hazards in the one and two-family dwelling environment.

In the year 2006, 39% of all fireground firefighter deaths occurred in dwellings and apartments.¹² At the 2006 Code Development Hearing in Orlando, the Committee disapproved the original proposal put forward and at the May 2007 Rochester Final Action Hearing, the membership heard many of the same arguments. The following paragraphs identify and respond to the concerns raised at both hearings. With these issues addressed, NASFM encourages the support of all code officials in supporting this code change.

1. Does the public want residential sprinklers? Opponents of residential sprinklers suggested in Orlando that the general public, which isn't well represented at code hearings, would oppose residential sprinklers, but a recent national poll conducted by Harris Interactive indicates that this claim misrepresents public opinion. The survey of over 1,000 adults revealed that:

- 45% of homeowners said that a sprinklered home is more desirable than an unsprinklered home. • 69% of homeowners said that having a fire sprinkler system increases the value of a home, and
- 38% of homeowners said that they would be more likely to purchase a home with fire sprinklers than without. The reason that this number isn't higher appears largely tied to an unfounded fear of water damage. 48% of homeowners cited water damage as the reason they would not want to install a sprinkler system. Clearly, this indicates a need for public education on the operation and reliability of sprinkler systems as being a major component in enhancing public support and demand for sprinklers.

The results of this survey support the assertion that the general public has become aware of and has warmed up to the concept of residential sprinklers. Certainly, this is due, at least in part, to the fact that many homeowners live in multifamily occupancies before they own a one- or two-family dwelling. Now that the IBC requires all new multi-family dwellings to be sprinklered, it is fair to say that the home-buying public will continue to become more familiar with residential sprinklers and that public support for residential fire sprinkler systems will continue to grow.

2. Correlation between a home's age and fire risk...aren't homes built to the IRC already safe enough?: Opponents of residential sprinklers would like to convince us that residential fire deaths are a function of a home's age and that new homes, built in accordance with the IRC, are safe. Many people buy these arguments because, on the surface, they seem to make sense. However, further analysis paints a different picture.

First, most residential fires deaths result from fires caused directly or indirectly by people. Compliance with the IRC doesn't prevent these types of fires or many other common fire causes, and once a fire starts, compliance with the IRC will not slow its spread. The speed by which a fire spreads in a home is instead a function of contents and room geometry.

Second, a simplistic correlation of residential fire deaths with the age of homes ignores several variables that tend to vary based on the age of a home. These include the socioeconomic status of the occupants, the density of occupants, the age of occupants, and the presence or omission of smoke detectors (discussed separately below), among others. Fire safety experts know that these factors are far more likely to be contributory factors in fire deaths than the age of a structure. In addition, the fact that more fire deaths occur in "older" homes than newer homes may also be related to the fact that the median age of homes in the U.S., according to a recent HUD study, is 32 years. By sheer numbers, a lot of people live in older homes. In summary, we do not debate that a home built in accordance with the IRC is safe, but that changes when people move in.

3. Since only a small percentage of fire department responses are for actual structure fires, does the fire service really need residential sprinklers? With respect to residential fire losses, the statistics submitted clearly demonstrate the scope and magnitude of the residential fire problem in the United States. Although the percentage of emergency responses to residential structure fires is a small fraction of overall fire department responses, a shocking 45 percent of firefighter deaths that occur on the fire ground occur at residential occupancies, almost always 1- and 2-family dwellings. Dwelling fires have three characteristics that present disproportionate risks as compared to fires in other occupancies. First, they are typically well developed, post-flashover fires by the time the fire department arrives. Second, they often occur at night, and third, they often involve a real or perceived need to perform search and rescue operations. In short, dwelling fires represent a small percentage of our emergency responses but account for a very large percentage of firefighters who are killed in the line of duty.

It is also important to point out that the ability of the fire service to protect our communities by responding to residential fires has declined significantly in recent years, and the situation isn't getting better. The public has a relatively simple expectation with respect to the fire department when a fire happens...they call 911, and the fire department responds to rescue trapped occupants and put out the fire. Unfortunately, that expectation isn't being effectively met in many parts of the country because of dwindling resources.

Nationally, volunteer firefighters, who comprise 73% of the American fire service and protect the vast majority of the geographic area of the United States, are becoming harder and harder to retain. In New York alone, the ranks of volunteer firefighters have declined from 110,000 in the early 1990s to approximately 85,000 today. Considering that all volunteer fire departments protect 95% of New York communities with a population of less than 10,000, what will happen when there are no longer enough firefighters to respond to 911 calls? This situation is national

and is not unique to New York. Long after many home builders leave a community, the homes that they leave behind and the people who live in them continue to place demands on the fire service. While the fire service will always strive to meet those demands, it is unrealistic to expect that our volunteers will always be able to do so. Therefore, the fire services' message is simple...if the public is going to be protected from home fires, it's time that we build that protection into new construction.

4. Aren't smoke alarms enough? Homebuilders who testified at the Orlando hearing suggested that smoke alarms are good enough to protect the public and that residential sprinklers aren't justified. Everyone can agree that smoke alarms save lives and that they are largely responsible for the dramatic reduction in fire death rates that has occurred in the U.S. over the past 30 years. Nevertheless, smoke alarms are only life-safety devices. On their own, they do nothing to stop the spread of fire, protect property or protect firefighters. Two other issues related to reliance on smoke alarms are of concern. First, as smoke alarms age, their reliability declines. This concern prompted smoke alarm manufacturers and testing laboratories to begin stamping an expiration date on each unit indicating a 10-year replacement cycle. The questions before us are how many alarms will actually be replaced at 10-year intervals, and what will happen to the reliability of alarms that are not replaced? Although an estimated 96% of U.S. homes with telephones now have at least one smoke alarm, in ¼ of reported fires in smoke alarm equipped homes, the devices didn't work.

In contrast, residential sprinkler systems have a life expectancy of 50-years, and they require essentially no maintenance, particularly for multipurpose systems. With these systems, if the domestic water is turned on, sprinklers are on as well. With the combination of sprinklers and smoke alarms, homeowners will have the best of both technologies. The second issue related to the effectiveness of smoke alarms in further reducing fire death rates has to do with their performance and waking effectiveness. In a study that was just completed in 2006, only 58% of a test group of children ages 6-12 awakened when a standard smoke alarm sounded, and only 38% of the test group successfully evacuated. The median time to awaken was 3 minutes, and the median time to escape was the maximum allowed 5 minutes. Another study revealed that a surprising 34% of fire deaths in one- and two-family dwellings during the 2000-2004 period occurred in homes with a working smoke detector. Perhaps this statistic correlates with the fact that fire death rates for the young and the elderly, those who are least likely to be capable of self-preservation even if they are awakened by a smoke detector, are roughly double those for individuals in the central age group. Smoke detectors are good, but they can only go so far in reducing the nation's fire death and injury rates. We need residential sprinklers.

5. What about homes without a public water supply? Opponents of residential sprinklers have suggested that it is impractical and too expensive to require sprinklers in homes that will use a well as the water supply. However, design options are available that make wells a viable water supply for both sprinklers and domestic service. Wells essentially fall into two categories, deep and shallow. With a shallow well, the well will likely be designed to provide a direct feed to the home, with no intervening tank. With these types of systems, pumps can be selected at reasonable costs that are capable of supplying both the domestic and sprinkler demands. Constant pressure, variable speed pumps are an excellent choice for this type of application.

One question that is frequently raised with respect to direct feed well systems involves the "recharge" rate, or the rate at which water can keep up with the required flow. Wells may not be capable of keeping up with the demand associated with a sprinkler system, which will typically be 20 gallons per minute or more. Many automatically assume that a tank and a secondary pump are necessary in these cases, greatly increasing the cost of the sprinkler system, but a lesser known yet simple approach called "developing the well" is a much better solution. Developing a well essentially creates an underground cistern that replaces the need for a tank. The approach involves digging the well substantially below the water table and allowing the hole to fill with water, retaining the needed capacity underground. By using an appropriate pump with a developed well, an interior tank and pump arrangement can be avoided, and the water supply costs can be limited. For deeper wells, there are two options. First, there is constant pressure, variable speed pumps suited for these applications. For installations utilizing this approach, a "developed well" as described above can also be used to accommodate needed water retention to satisfy the sprinkler demand. The second alternative involves a tank and pump, which can be installed between the well pump and the plumbing system. This approach is the common arrangement utilized for deep wells supplying domestic service. To supply sprinklers simply requires that the size of the domestic supply tank be increased to something in the range of 200-300 gallons, and the secondary pump needs to have an increased flow rating. Both of these enhancements can be made at modest cost. Some have suggested that the IRC should not require homes on wells to have fire sprinklers, yet homes in rural areas, usually corresponding to homes served by wells, are the homes that are least likely to survive a fire because of long or inadequate responses by the fire service. The solution is instead educating contractors on cost-efficient design options for well systems.

6. Impact of residential sprinklers on public and private water systems: It was suggested by one builder during testimony at the Orlando hearing that operation of residential sprinklers connected to a small water system in a Michigan jurisdiction resulted in the jurisdiction having to drain and decontaminate the entire water system. Subsequent identification and review of the cited event revealed that the concern regarding contamination of the water supply, which was a private system, was linked to the use of fire hydrants during suppression activities, not the sprinkler system. This clearly makes more sense, and for the record, the fire actually started outside of this building, spread to the interior, and sprinklers still helped to stop the fire's progress.

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The truth is that residential sprinklers actually result in a significantly decreased demand on water systems because residential sprinklers use far less water than firefighters to extinguish a fire. Scottsdale, Arizona's experience provides data to support this claim. Scottsdale found that the average estimated sprinkler flow per residential fire incident was 341 gallons, as compared to an estimated manual suppression flow for unsprinklered residential fire incidents of 2,935 gallons.

7. Wait for more cost-effective approaches to residential sprinkler protection before adopting a requirement in the IRC. Opponents of residential sprinklers suggest that we should hold off on requiring such systems in dwellings until improvements in technology make the systems more cost effective. The truth is that many recent improvements in sprinkler technology have largely improved cost effectiveness already. The real problem isn't a lack of cost effective design and installation options. Instead, the problem appears to stem from a lack of communication within the supply, design and installation communities regarding these efficient design options and the fact that momentum often drives us to continue doing things the way we've done them in the past.

To drive the industry toward more innovative solutions, more competition is needed, and changing the IRC to require residential sprinklers will create the demand that will increase competition and motivate cost efficient designs.

Some have suggested that we should wait for NFPA 13D or the IRC to permit the use of a single operating sprinkler as a design basis, as opposed to the currently required two sprinklers, before requiring sprinklers in the IRC. Some have also suggested that we should revisit whether sprinklers are really needed everywhere NFPA 13D requires them before requiring residential sprinklers in the IRC. The best way to encourage research and discussion on both of these ideas is to pass the IRC requirement now. Market demand will drive the research and interest in residential sprinklers will grow.

Market demand will also drive the creation of design tools that will simplify the exercises of locating sprinklers and sizing pipe. These tools, which will present design requirements in prescriptive, cookbook formats, are already being developed, and it is expected that they will be published prior to publication of the 2009 IRC.

8. Required maintenance: Opponents of residential sprinklers stated in Orlando that residential sprinkler systems need regular maintenance and questioned who would perform this service. Someone suggested that local fire departments will have to perform or verify maintenance, potentially raising concerns regarding right of entry.

The fact is that residential sprinkler systems are essentially maintenance free. Multipurpose systems have no maintenance requirements at all, and stand-alone systems only require an occasional test of the water flow alarm, if provided (not required by NFPA 13D or the IRC when the sprinkler pipe is copper, CPVC, or PEX) and the backflow preventer, if provided (again, not required by NFPA 13D). None of this maintenance would be performed or witnessed by the fire department. The alarm test can be conducted by the owner, in the same way the owner may periodically test a burglar alarm, and a plumber is required to test a backflow preventer. This test, which is a public health issue, is not associated with functionality or reliability of the sprinkler system, and therefore, it is not a fire safety concern.

9. Trained labor/inspectors: Opponents of residential sprinklers suggested in Orlando that, if the IRC were to require residential sprinklers, there would be a shortage of trained labor and trained inspectors to install and inspect these systems. While that is true today, there is no doubt that industry and code officials will respond once the IRC has been revised, and there will be several years to ramp up before the 2009 IRC begins to have an impact. This is exactly what has happened in the many local jurisdictions that have passed sprinkler ordinances.

Preliminary discussions have already taken place with ICC regarding the possibility of having ICC oversee a certification program for residential sprinkler installers and inspectors. Other organizations have also expressed interest in handling installer training and certification. It is expected that, in some jurisdictions, plumbers will become trained and certified to install residential sprinklers and sprinklers will be installed as part of the plumbing system. Likewise, it is expected that, in some jurisdictions, plumbing inspectors will be trained and certified to inspect these systems. This model is not unlike the approach taken with smoke alarms. They are located and installed by electricians and they are inspected by the electrical or building inspector.

10. Leakage and mold damage: In Orlando, opponents of residential sprinklers expressed fear that sprinklers would leak and cause mold damage, which could make a home uninsurable. In response, it should be pointed out that residential sprinklers systems are no different than residential plumbing. If quality products are used and the system is properly installed, it won't leak. If substandard products are used or workmanship is faulty, leaks will occur.

With respect to sprinkler systems, sprinkler piping and fittings, and sprinklers themselves, are subject to rigorous testing to ensure quality. Unquestionably, sprinklers are far higher quality and more thoroughly tested than domestic piping and fixtures. Sprinkler tests required for listing include, among others, 700 psi hydrostatic strength, 500 psi leakage resistance, 100,000 cycles water hammer resistance, 35-125°F temperature cycling, and freeze performance to 20°F below for 24 hours. Also, sprinkler piping and components are rated for a pressure of 175 psi, while plumbing water supply systems are rated for only 80 psi.

11. Appendix P, good enough for now? Opponents of residential sprinklers suggested in Orlando that, with the IRC having just accepted Appendix P, maybe it would be best to leave the sprinkler requirements in the appendix for a while to see what happens with it. This approach will certainly be appealing to some because it delays the sprinkler issue and gives home builders a leg up in fighting sprinklers at the local level.

However, isn't it time that we give local code officials the leg up? Code officials who have been through the local adoption process will certainly understand that it's much easier to justify taking something controversial out of the code than to add something new during an adoption review. With respect to residential sprinklers, code officials know all too well that arguing them into the code at the local level is a very uphill climb given local politics and the strength of local home builder associations.

Putting the sprinkler requirement into the body of the IRC certainly won't end the local debate, but it will at least put the burden on the home building industry to justify making an amendment to take sprinklers out. Local code officials would then have a respectable chance of keeping the sprinkler requirement. Other codes including the Uniform Fire Code, the NFPA Building Code and the Life Safety Code have already set a moral precedent by adding mandatory dwelling sprinkler requirements in their 2006 editions. The IBC and IFC have also done their parts by now requiring all residential occupancies within their respective scopes to be protected by fire sprinklers. Now it is time for the IRC to do the same.

i Ahrens, 2007, p. 2

ii Ibid.

iii Fahy & Leblanc, 2007, p. 24

Cost impact (Stanek): The code change proposal will have the effect of a minor increase in the cost of construction in the short term that will be recouped in the long run due to other savings that more than offset the costs. See the Cost/Benefit analysis submitted with this proposal.

Cost impact (Dean): The code change proposal will increase the cost of construction.

Analysis: Review of proposed new standard NFPA 13D-07 indicated that, in the opinion of ICC Staff, the standard did comply with ICC standards criteria.

Committee Action:

Disapproved

Committee Reason: The committee felt that there was insufficient effective or substantial reason to move the sprinkler requirements out of Appendix P where it is now.

Assembly Action:

None

Individual Consideration Agenda

This item is on the agenda for individual consideration because public comments were submitted.

Public Comment 1:

Rick Davidson, City of Maple Grove, MN, representing Association of Minnesota Building Officials, requests Approval as Modified by this Public Comment.

Modify proposal as follows:

**SECTION R313
FIRE SPRINKLER SYSTEMS**

R313.1 General. An approved automatic fire sprinkler system shall be installed, repaired, operated and maintained in new one-and two-family dwellings and townhouses in accordance with NFPA 13D when required by the International Fire Code. Separate permits shall be obtained for installation, repair, operation and maintenance when required by the International Fire Code.

(Renumber subsequent sections)

(Portions of proposal not shown remain unchanged)

Commenter's Reason: This modification places the authority for permitting and enforcement of residential sprinklers in the Fire Code. It seems appropriate that sprinkler requirements be placed in the code of those who most support their installation. They are in the best position to defend their inclusion in the code when it comes to local adoption.

Analysis. Section 101.2 of the IBC refers to the IRC as a stand alone code. As such, the provisions of the IRC are self-contained, and the provisions for a building constructed in accordance with the IRC are contained solely within the scope of the IRC and not within the scope of any other I-Code. Therefore the modification proposed is outside the scope of the International Fire Code. Additionally, the proposed text in the modification cannot be applied, as there are no provisions in the International Fire Code that are applicable to the IRC. The requirements for sprinkler systems contained in the IFC are keyed to occupancy groups. Since a building built in accordance with the IRC has no occupancy classification, there is no linkage to buildings built in accordance with the IRC.

Public Comment 2:

John C. Dean, National Association of State Fire Marshals (NASFM), requests Approval as Modified by this public comment.

Sean DeCrane, International Association of Firefighters (IAFF), requests Approval as Modified by this Public Comment

Modify proposal as follows:

**SECTION R313
FIRE SPRINKLER SYSTEMS**

R313.1 General. An approved automatic fire sprinkler system shall be installed in new one-and two-family dwellings and townhouses in accordance with Section P2904 of the International Residential Code or NFPA 13D.

(Renumber subsequent sections)

(Portions of proposal not shown remain unchanged)

Commenter's Reason: This modification addresses the approval of proposal RP3 by the IRC Committee which provides for either an NFPA 13D sprinkler system or a dwelling sprinkler system installed in accordance with new provisions in IRC Section P2904.

Final Action: AS AM AMPC _____ D

RB64-07/08

R313 (New), Appendix P, Chapter 43 (New)

Proposed Change as Submitted:

Proponent: Ronny J. Coleman, Retired California State Fire Marshal, representing IRC Fire Sprinkler Coalition

1. Add new section as follows:

**SECTION R313
FIRE SPRINKLER SYSTEMS**

R313.1 General. Effective January 1, 2011, an approved automatic fire sprinkler system shall be installed in new one-and two-family dwellings and townhouses in accordance with NFPA 13D.

(Renumber subsequent sections)

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2. Delete IRC Appendix P without substitution:

APPENDIX P FIRE SPRINKLER SYSTEM

~~The provisions contained in this appendix are not mandatory unless specifically referenced in the adopting ordinance.~~

~~**AP101 Fire sprinklers.** An approved automatic fire sprinkler system shall be installed in new one- and two-family dwellings and townhouses in accordance with Section 903.3.1 of the *International Building Code*.~~

3. Add standard to Chapter 43 as follows:

NFPA

13D-07 Installation of Sprinkler Systems in One- and Two-family Dwellings and Manufactured Homes

Reason: This proposal is submitted as part of a package of three proposals that were developed in cooperation with the International Association of Fire Chiefs with input from code officials, home builders, fire chiefs and other interested parties. During last year's code development cycle, many ICC members stated that the preferred way to advance fire sprinklers into new home construction is through a comprehensive approach that involves:

1. A schedule for implementation,
2. Reasonable and appropriate design and construction incentives, and
3. A simple, prescriptive methodology for designing systems.

In response, representatives of the IRC Fire Sprinkler Coalition (IRCFSC) and the International Association of Fire Chiefs have developed and submitted three proposals for this code cycle, one addressing each topic.

This proposal addresses the first issue, "a schedule for implementation." It requires new homes constructed after January 1, 2011 to have fire sprinklers. The delayed implementation date provides a time buffer that will allow for development of infrastructure, such as trained installers and inspectors, prior to the residential sprinkler requirement becoming effective. While the approach of delaying a code requirement may be unfamiliar to some, it is entirely appropriate, and it is already used by the IRC in Chapter 38, as follows:

E3802.12 Arc-fault protection of bedroom outlets. *All branch circuits that supply 120-volt, single-phase, 15- and 20-ampere outlets installed in bedrooms shall be protected by a combination type or branch/feeder type arc-fault circuit interrupter installed to provide protection of the entire branch circuit. Effective January 1, 2008, such arc-fault circuit interrupter devices shall be combination type. (emphasis added).*

It is common knowledge that fires in one- and two-family dwellings are the root of America's fire problem, and a substantial majority of ICC members who voted at last year's final action hearing, 56%, agreed that residential sprinklers are the right solution. To truly address America's fire problem, ICC members know that we must, at some point, begin to mainstream fire sprinklers into new home construction, and this proposal provides a rational way to make the transition by fixing a future date for the requirement to become effective.

During last year's debate, the IRCFSC provided detailed responses that addressed all of the concerns cited in testimony as a basis for opposing residential sprinklers. These concerns, which included the use of wells to supply sprinklers, freezing, leakage and cost, among others, were addressed in our public comment to proposal RB114-06/07 and in testimony offered at the final action hearing in Rochester. They were also addressed in a Web cast aired by the IRCFSC in May 2007, copies of which are now available on a free DVD that can be ordered at www.IRCFireSprinkler.org.

As a result of this outreach effort, opposition to sprinklers based on myths and misinformation has largely dissipated, and the debate has largely become focused on two issues: First, whether the requirement for fire sprinklers in dwellings should be determined at a local level, and second, whether the residential fire problem is limited to older homes. The remainder of this reason statement focuses on these two issues.

1. Should the requirement for fire sprinklers in dwellings be a local issue? Several speakers in Rochester who spoke in opposition to RB114 conveyed an opinion that requirements for fire sprinklers in dwellings should be decided at the local level. The question is why? By including Appendix P, the IRC has already acknowledged fire sprinklers as a basic safety feature that should be included in new homes. There is no premise for the IRC to promote residential fire safety on community-by-community basis. The IRC, as a model code, should promote safety and regulatory consistency among all jurisdictions, as opposed to creating a local "shopping list" of safety requirements.

No other ICC code treats sprinkler requirements or residential fire safety as a local choice to be made at the time of code adoption. The IBC establishes a baseline that ALL residential occupancies must be protected by fire sprinklers, including one- and two-family dwellings and townhouses. Some argue that it's appropriate for IBC to be more restrictive than the IRC because use of the IBC is only mandatory for dwellings exceeding three stories in height, but that argument disregards one very important fact; most residential fire deaths occur in one- and two-story homes. To have an impact on fire deaths in one- and two-story homes, we need a fire sprinkler requirement in the IRC.

A newly published study by the National Institute of Standards and Technology (NIST) entitled "Benefit-Cost Analysis of Residential Fire Sprinkler Systems," reports that, out of almost 2,000 fire incidents in homes equipped with fire sprinklers during the 4-year period 2002 to 2005, there were no fire-related fatalities. This statistic clearly demonstrates the potential for sprinklers to save thousands of lives that would otherwise be lost in residential fires. With the knowledge that residential fire sprinklers are a proven, life-saving technology, it is clear that the IRC should establish a model that sprinklers are a minimum safety feature that should be included in all new homes.

2. Is the residential fire problem limited to older homes?

According to a recent HUD study, the median age of homes in the U.S. is 32 years. With this in mind, it makes perfect sense that more fires and fire deaths occur in "older" homes, simply because there are many more of them. However, the residential fire problem is certainly not limited to older homes, and it is has not been correlated with home age.

To evaluate the relationship between the age of a home and fire risk, it is necessary break the concept of fire risk into its two components, the probability of a fire event occurring and the associated consequence once the event occurs. The probability of a fire event occurring equates to the risk of fire ignition. With respect to the age of a home, only those ignition sources that are permanently affixed to a home, such as central heating systems or electrical distribution systems, might be directly correlated to home age, but to date, there are no known studies demonstrating increased fire risk as these systems age. Such a study would be difficult to perform because heating and electrical systems are often replaced when a home is remodeled, breaking any correlation that might otherwise exist between the age of a home and the age of fixed systems installed therein. Nevertheless, because most fire deaths are associated with ignition scenarios related to human behavior, which are independent of home age, it is clear that home age has little to do with the probability of a fire event.

With respect to consequences associated with a fire event, assuming that an ignition has occurred, it is again difficult to establish any correlation with home age, except to the extent that the probability of safe evacuation is increased based on the possible presence of working smoke alarms and/or escape windows. On the contrary, some design and construction methods commonly used in new homes actually reduce fire safety. These include the use of lightweight trusses (now used in more than 60% of new homes according to the Wood Truss Council of America), which are known to become unstable and collapse more quickly in fire situations than conventional construction; and open floor plans, which reduce compartmentation and allow a fire to quickly spread throughout a home.

The truth is that fire growth in a home is largely dependent on contents, not the structure itself, and contents are independent of home age. Although smoke alarms and escape windows associated with newer homes are beneficial in some fire incidents, statistics show that the value of these features is declining over time, as fire deaths in homes that have working smoke alarms are becoming increasingly common. The most recent data (for the period 2000 to 2004), shows that 34% of fire deaths occurred in homes that had WORKING smoke alarms. This is up from 24% in the previous period, and as smoke alarms age, we can only assume that their reliability will continue to decline unless they are periodically replaced, which seems to be wishful thinking when one considers that we have a problem even getting people to change batteries in smoke alarms on a regular basis.

In summary, a simple risk analysis demonstrates that home age is largely independent of either the risk of ignition or the consequences of a fire, if ignition occurs. Therefore, it is clear that home age has little to do with the residential fire problem or the need for residential sprinklers.

Conclusion:

The outpouring of support for residential sprinklers has been building for many years, and today, all U.S. model building codes require fire sprinklers in residential occupancies, including one- and two-family dwellings, with the exception of the IRC. It is only logical that the IRC should finally acknowledge the value of residential sprinklers in preventing deaths, injuries and property loss by making sprinklers a standard feature in new home construction.

Although some in the IRC arena have argued that "big government" shouldn't intrude into American homes by requiring fire sprinklers, those of us who have been around for a while will recall that this same argument was made 30-years ago when smoke alarms were first required in dwellings. Today, it's hard to imagine any reasonable individual arguing that the IRC requirement for smoke alarms constitutes a "government intrusion" into the American home, largely because smoke alarms are viewed as cost-effective safety devices. Sprinklers should be viewed the same way.

Given the proposed incentive package and prescriptive design option for multipurpose fire sprinkler systems being advanced this year in a proposal by the International Association of Fire Chiefs, it is entirely feasible that it will be cheaper to build some homes with fire sprinklers than without. For those cases where there is a net cost to sprinklers, NIST's newly published "Benefit-Cost Analysis of Residential Fire Sprinkler Systems" report concludes that multipurpose residential fire sprinkler systems are still a good investment, yielding a positive present value of net benefits (PVNB) for every home type studied, including ranch-style homes, colonial-style homes and townhouses.

This proposal provides a reasonable and justified approach for advancing fire sprinklers into the body of the IRC, and the time has come to for the IRC to include fire sprinklers as part of the model for residential construction.

ABOUT THE IRC FIRE SPRINKLER COALITION: The IRC Fire Sprinkler Coalition is an organization that represents national, state and regional groups of code officials and other associations focused on public safety. The Coalition has been active in presenting training programs to code officials and others aimed at conveying facts and debunking myths and misinformation about residential sprinklers. At the time of submittal of this proposal, groups who pledged to support the IRC Fire Sprinkler Coalition's mission of mainstreaming fire sprinklers into new home construction included:

NATIONAL AND REGIONAL COALITION MEMBERS

- * International Association of Fire Chiefs – Fire and Life Safety Section
- * Center for Campus Fire Safety
- * ICC Joint Fire Service Review Committee
- * Institution of Fire Engineers, US Branch
- * International Fire Marshals Association
- * National Association of State Fire Marshals
- * New England Association of Fire Marshals
- * New England Division of the International Association of Fire Chiefs
- * Safe Buildings Coordinating Committee
- * Society of Fire Protection Engineers
- * Southeastern Association of Fire Chiefs
- * Uniform Fire Code Association
- * Western Fire Chiefs Association

STATE AND LOCAL COALITION MEMBERS

Alaska

- * Alaska Fire Chiefs Association

Arizona

- * Arizona Fire Chiefs Association
- * Arizona Fire Marshals Association
- * Arizona: Society of Fire Protection Engineers, Arizona Chapter
- * Arizona: Yuma County, AZ Fire Officer's Association

California

- * California: California Fire Chiefs Association
- * California: Northern California Fire Prevention Officers Section
- * California: Orange County Fire Chiefs Association
- * California: Southern California Fire Prevention Officers Section

Colorado

- * Colorado: Fire Marshals Association of Colorado

Connecticut

- * Connecticut: Capitol Region Fire Marshals Association of Connecticut

Delaware

- * Delaware: Fire Marshals Association of Delaware Valley

Florida

- * Florida Fire Marshals and Inspectors Association
- * Florida Fire Chiefs Association
- * Florida: Northeast Florida Fire Prevention Association

Idaho

- * Idaho Fire Chiefs Association
- * Idaho Fire Prevention Officers Association

Illinois

- * Illinois Fire Inspectors Association
- * Illinois Fire Chiefs Association
- * Illinois: Lake County Fire Chiefs Association

Indiana:

- * Indiana: Fire Inspectors Association Of Indiana

Iowa

- * Iowa: Hawkeye State Fire Safety Association, Iowa
- * Iowa Fire Marshal's Association

Louisiana

- * Louisiana Association of Fire Prevention Chiefs

Maryland

- * Maryland Building Officials Association
- * Maryland State Firemen's Association

Maine

- * Maine Fire Chiefs Association

Massachusetts

- * Massachusetts: Fire Chiefs Association of Massachusetts

Michigan

- * Michigan Association of Fire Chiefs
- * Michigan Fire Inspectors Society
- * Michigan: Macomb County Fire Chiefs Association

Missouri

- * Missouri: Tri-Lakes Fire Chiefs Association

Minnesota

- * Minnesota: Fire Marshals Association of Minnesota

Nebraska

- * Nebraska Municipal Fire Chiefs Association

Nevada

- * Nevada: Fire Prevention Association of Nevada

New Jersey

- * New Jersey Fire Prevention and Protection Association
- * New Jersey: Northern Ocean Fire Chiefs Association
- * New Jersey: Uniform Fire Prevention/Protection Officials Assn. of Ocean County

New Mexico

- * New Mexico Fire Marshals Association

New York

- * New York: Association of Fire Districts of the State of New York
- * New York: Career Fire Chiefs' Association of New York State
- * New York: Fire Marshals Association of Suffolk County
- * New York: Firemen's Association of the State of New York
- * New York: Monroe County, NY Fire Marshals & Inspectors Association
- * New York State Association of Fire Chiefs
- * New York State Building Officials Conference
- * New York State Code Coalition to Protect and Preserve our Communities:
- * New York State Fire Marshals and Inspectors Association
- * New York: Suffolk County Fire Chiefs Association

North Carolina

- * North Carolina State Firemen's Association

Ohio

- * Ohio Fire Officials Association

Oregon

- * Oregon Fire Code Committee
- * Oregon Fire Marshals Association

Pennsylvania

- * Pennsylvania Fire and Emergency Services Institute

Rhode Island

- * Rhode Island Association of Fire Marshals

Tennessee

- * Tennessee Fire Safety Inspectors Association

Texas

- * Texas Fire Marshals Association
- * Texas: Fire Prevention Association of North Texas

Virginia

- * Virginia: Central Virginia Fire and Arson Association
- * Virginia Fire Chiefs Association
- * Virginia Fire Prevention Association

Washington

- * Washington Fire Chiefs Association
- * Washington State Assn of Fire Marshals

Cost impact: This code change will increase the cost of construction.

Analysis: This proposal includes an "effective date" which is typically not included in the I-Codes. Typically, the provisions in the code become effective when the code is adopted.

Analysis: Review of proposed new standard NFPA 13D-07 indicated that, in the opinion of ICC Staff, the standard did comply with ICC standards criteria.

Committee Action:

Disapproved

Committee Reason: The committee felt that putting language into the code that mandated sprinklers on a future date, January 1, 2011, was a problem. The committee felt that there was insufficient effective or substantial reason to move the sprinkler requirements out of Appendix P where it is now.

Assembly Action:

None

Individual Consideration Agenda

This item is on the agenda for individual consideration because public comments were submitted.

Public Comment 1:

Julius Ballanco, PE, CPD, President, American Society of Plumbing Engineers, requests Approval as Modified by this Public Comment.

Replace proposal as follows:

SECTION R313
SPRINKLER PROTECTION

R313.1 Sprinklers. Effective January 1, 2011, all dwelling units shall be protected with an automatic residential fire sprinkler system.

Exception: Sprinkler protection shall not be required for additions or alterations of existing buildings that do not have an automatic residential fire sprinkler system installed.

R312.2 Design and installation. Automatic residential fire sprinkler systems shall be designed and installed in accordance with Section P2904 or NFPA 13D.

(Renumber subsequent sections)

Delete IRC Appendix P without substitution:

APPENDIX P
FIRE SPRINKLER SYSTEM

The provisions contained in this appendix are not mandatory unless specifically referenced in the adopting ordinance.

AP104 Fire sprinklers. An approved automatic fire sprinkler system shall be installed in new one- and two-family dwellings and townhouses in accordance with Section 903.3.1 of the *International Building Code*.

Add standard to Chapter 43 as follows:

NFPA 13D-07 Installation of Sprinkler Systems in One- and Two-family Dwellings and Manufactured Homes

Commenter's Reason: As stated in the original proposal, ASPE is a firm believer that residential sprinkler systems should be installed in all residential buildings to provide life safety. The fire deaths and statistic regarding the performance of NFPA 13D systems clearly justifies the requirements for residential sprinklers for all new residential buildings.

ASPE can agree with the IRC Fire Sprinkler Coalition regarding the delay in enactment of the code requirement. While we believe this should happen immediately, it is recognized that it could take time to complete the training and education of all parties involved. Therefore, we in effect are suggesting the combination of the two proposed code changes RB63 and RB64.

The purpose of the code is to provide life safety protection to everyone. To provide this protection, residential sprinklers are a necessary component in building construction.

Public Comment 2:

Ronny J. Coleman, Retired California State Fire Marshal, representing Fire Sprinkler Coalition, requests Approval as Modified by this Public Comment.

Replace proposal as follows:

**SECTION R313
SPRINKLER PROTECTION**

R313.1 Required Installation. Effective January 1, 2011, a residential fire sprinkler system shall be installed in one- and two-family dwellings and townhouses.

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

R312.2 Design and Installation. Residential fire sprinkler systems shall be designed and installed in accordance with Section P2904 or NFPA 13D.

(Renumber subsequent sections)

Delete IRC Appendix P without substitution:

Also RP 3 - page 786

**APPENDIX P
FIRE SPRINKLER SYSTEM**

The provisions contained in this appendix are not mandatory unless specifically referenced in the adopting ordinance.

AP104 Fire sprinklers. An approved automatic fire sprinkler system shall be installed in new one- and two-family dwellings and townhouses in accordance with Section 903.3.1 of the *International Building Code*.

Add standard to Chapter 43 as follows:

NFPA 13D-07 Installation of Sprinkler Systems in One- and Two-family Dwellings and Manufactured Homes

Commenter's Reason: It is important to point out that there was no comprehensive debate on this proposal at the hearing in Palm Springs. The IRC Fire Sprinkler Coalition (www.IRCFireSprinkler.org) and many others chose to forgo debate since it was clear, based on committee actions on prior proposals, that the committee would not accept any proposal having to do with residential sprinklers.

When RB64 was called to the floor, there were only 10 committee members present (other than the chairman), and 4 of these individuals were appointed by the National Association of Home Builders. Given NAHB's well-known policy of opposing residential sprinklers, passage of RB64 would have required a unanimous vote of the remaining 6 members. Such a requirement, the threshold of unanimity among committee members who don't have a pre-determined vote, to pass a code change is inconsistent with the concept of consensus code making, and it deprecates ICC's code-making process. Accordingly, the committee vote lacks merit and should be ignored.

We ask the ICC membership to support this public comment based on the overwhelming evidence that has been presented in support of residential sprinklers over the past few years. The reason statement provided with the original RB64 proposal and the reason statements provided with many other proposals this year clearly make the case that residential sprinklers represent the best way to achieve a sustainable and long-term reduction in residential fire losses.

We know that: 1) the residential fire problem is not limited to older homes, 2) the residential fire problem cannot be solved with smoke alarms, 3) more firefighters are killed fighting fires in dwellings than in any other occupancy, and 4) residential sprinklers represent a cost effective solution to America's residential fire problem. These conclusions are clearly documented in publicly available reports.

We also know that consumers are accepting residential sprinklers as an important feature in new home construction in increasing numbers. This comes as no surprise because the IBC requires EVERY other residential occupancy built today to have sprinklers, and it simply makes sense that renters who live in sprinklered apartments will want to move into sprinklered homes.

While NAHB suggests that sprinklers should remain a "choice" for new homeowners, the concept of choice has two significant flaws. First, it's common knowledge that major home builders won't offer sprinklers even if the owner wants them installed, so home buyers who want sprinklers are simply told that they're not offered as an option. Second, why should the first home buyer be given the right to choose whether a home gets a fire sprinkler system, on behalf of all future homeowners, their families, and the community who ultimately assumes responsibility for providing fire protection for unsprinklered properties? This simply makes no sense.

The fact that the National Association of Home Builders is the only national organization to oppose the adoption of residential sprinklers as a mainstream feature in new home construction is very telling, and we are optimistic that ICC's membership will make the decision that the time has finally come for all homes to be sprinklered. It seems that everyone agrees that we'll eventually get there, so what are we waiting for?

Final Action: AS AM AMPC 2 D

RB65-07/08
R325 (New), Chapter 43 (New)

Proposed Change as Submitted:

Proponent: Jim Jorgensen/Greg Reed, City of Lenexa, KS

1. Add new section as follows:

SECTION R325
AUTOMATIC SPRINKLER SYSTEM

R325.1 Fire protection systems. An automatic residential fire sprinkler system shall be installed in new townhouses in accordance with NFPA 13D.

2. Add standard to Chapter 43 as follows:

NFPA
13D-07 Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes

Reason: Townhouses present a unique fire protection and property protection issues for fire departments and owners of connected townhouses. With separate ownerships townhouses are uniquely affected by fires in adjacent units even if the fire does not breach the two hour walls separating the units. After a severe fire the structure is open to the elements and subject to damage from water intrusion and other effects. These detrimental effects contribute to ongoing damage of adjacent townhouses since the process for repair may take an extended period of time. Legal issues may further complicate the repair process. Adding sprinklers will minimize the extent of damage so that repairs are easier to complete and the time of exposure of adjacent units to adverse affects is minimized.

Significant documentation was provided RB114-06/07 to show that non-sprinkled dwellings are a major contributing factor to the amount of property damage and loss of life from fires. Sprinkling is now required for all multi-family dwellings and townhouses should be treated in a similar manner.

Cost Impact: The code change proposal will increase the cost of construction.

Analysis: Review of proposed new standard NFPA 13D-07 indicated that, in the opinion of ICC Staff, the standard did comply with ICC standards criteria.

Committee Action: **Disapproved**

Committee Reason: The committee felt that there was insufficient effective or substantial reason to move the sprinkler requirements out of Appendix P where it is now. The committee agreed that if the code is going to mandate sprinklers for new construction that it should apply to all structures in the scope of the *International Residential Code* not just townhouses in a piecemeal approach.

Assembly Action: **Approved as Submitted**

Individual Consideration Agenda

This item is on the agenda for individual consideration because an assembly action was successful.

Final Action: AS AM AMPC _____ D

RB66-07/08

R101.2, R301.1.3.1 (New), R313 (New), R317.2, R317.2.4, R310.1, AP102 (New), Chapter 43 (New)

Proposed Change as Submitted:

Proponent: Rick Morris, AvalonBay Communities, Inc.

1. Revise as follows:

R101.2 (Supp) Scope. The provisions of the *International Residential Code for One- and Two-family Dwellings* shall apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, removal and demolition of detached one- and two-family dwellings and townhouses not more than three stories above-grade in height with a separate means of egress and their accessory structures.

The provisions of this Code shall also apply to the construction, alteration, enlargement and replacement of townhouses not more than 4 stories above grade plane that are equipped throughout with an automatic sprinkler system installed in accordance with NFPA 13D.

Exception: Live/work units complying with the requirements of Section 419 of the *International Building Code* shall be permitted to be built as one- and two-family dwellings or townhouses. Fire suppression required by Section 419.5 of the *International Building Code* when constructed under the *International Residential Code for One- and Two-family Dwellings* shall conform to Section 903.3.1.3 of the *International Building Code*.

2. Add new text as follows:

R301.1.3 Engineered design. When a building of otherwise conventional construction contains structural elements exceeding the limits of Section R301 or otherwise not conforming to this code, these elements shall be designed in accordance with accepted engineering practice. The extent of such design need only demonstrate compliance of nonconventional elements with other applicable provisions and shall be compatible with the performance of the conventional framed system. Engineered design in accordance with the *International Building Code* is permitted for all buildings and structures, and parts thereof, included in the scope of this code.

R301.1.3.1 Townhouses four stories above grade plane. For structural design of townhouses four stories above grade plane, the structural provisions of the *International Building Code* for Group R-3 shall apply

3. Rename section and add new R313.1 as follows:

R313
FIRE PROTECTION SYSTEMS AND SMOKE ALARMS

R313.1 Fire protection systems. An approved automatic fire sprinkler system shall be installed in new townhouses in accordance with NFPA 13D, except as follows:

1. Where townhouses have separation walls designed based on R317.2, Exception 2, sprinklers shall be provided to protect exterior combustible balconies, decks, porches and ground floor patios located under such combustible projections. Exterior sprinklers and supply piping shall be protected from freezing where freeze protection is required by P2603.6. Where sidewall sprinklers are installed beneath exposed wood joists, sprinklers shall be permitted to be installed with deflectors located 1 inch (25 mm) to 6 inches (152 mm) below the joists, not to exceed a maximum distance of 14 inches (356 mm) below the deck.
2. Where townhouses with private garages have separation walls designed based on R317.2, Exception 2, fire sprinkler protection shall be provided in the garage. Sprinklers in garages shall be connected to a system that complies with NFPA 13D. Garage sprinklers shall be residential sprinklers or quick-response sprinklers, designed to provide a density of 0.05 gpm/ft². Garage doors shall not be considered as obstructions with respect to sprinkler placement.

(Renumber subsequent sections)

4. Revise as follows:

R317.2 Townhouses. Each townhouse shall be considered a separate building and shall be separated by fire-resistance-rated wall assemblies meeting the requirements of Section R302 for exterior walls.

Exceptions:

1. A common 2-hour fire-resistance-rated wall is permitted for townhouses if such walls do not contain plumbing or mechanical equipment, ducts or vents in the cavity of the common wall. Electrical installations shall be installed in accordance with Chapters 33 through 42. Penetrations of electrical outlet boxes shall be in accordance with Section R317.3.
2. A common 1-hour fire-resistance rated wall is permitted for townhouses equipped throughout with an automatic sprinkler system installed in accordance with R313.1. The wall shall be rated for fire exposure from both sides and shall extend to and be tight against exterior walls and the underside of the roof sheathing. Where roof surfaces adjacent to the wall are at different elevations, the rated wall shall continue to the upper roof sheathing.

5. Revise as follows:

R317.2.4 Structural independence. Each individual townhouse shall be structurally independent.

Exceptions:

1. Foundations supporting exterior walls or common walls.
2. Structural roof and wall sheathing from each unit may fasten to the common wall framing.
3. Nonstructural wall coverings.
4. Flashing at termination of roof covering over common wall.
5. Townhouses separated by a common 2-hour fire-resistance-rated wall as provided in Section R317.2.

6. Revise as follows:

R310.1 (Supp) Emergency escape and rescue required. Basements and every sleeping room shall have at least one operable emergency escape and rescue opening. Such opening shall open directly into a public street, public alley, yard or court. Where basements contain one or more sleeping rooms, emergency egress and rescue openings shall be required in each sleeping room. Where emergency escape and rescue openings are provided they shall have a sill height of not more than 44 inches (1118 mm) above the floor. Where a door opening having a threshold below the adjacent ground elevation serves as an emergency escape and rescue opening and is provided with a bulkhead enclosure, the bulkhead enclosure shall comply with Section R310.3. The net clear opening dimensions required by this section shall be obtained by the normal operation of the emergency escape and rescue opening from the inside. Emergency escape and rescue openings with a finished sill height below the adjacent ground elevation shall be provided with a window well in accordance with Section R310.2. Emergency escape and rescue openings shall open directly into a public way, or to a yard or court that opens to a public way.

Exceptions:

1. Basements used only to house mechanical equipment and not exceeding total floor area of 200 square feet (18.58 m²).
2. In dwelling units equipped throughout with an automatic sprinkler system installed in accordance with NFPA 13D.

7. Add new text as follows:

AP102 Fire flow. The fire-flow requirements for townhouses specified by IFC Appendix B, where adopted, shall be permitted to be reduced by 75% for buildings equipped throughout with an automatic sprinkler system installed in accordance with NFPA 13D.

Reason: This proposal would add a requirement for residential sprinkler systems to be installed in all new townhouses constructed under the *International Residential Code*, and it includes a package of sprinkler incentives that will help offset the added cost of sprinklers, as well as improve design flexibility. If a reasonable package of incentives can be offered by the code, it simply makes sense for multifamily developers to provide these systems to protect new townhouses.

It is well known that sprinklers are the best tool for providing firesafety in residential occupancies, and the concept of the code providing incentives to encourage the use of these systems in residential occupancies is already in use in the IBC. In fact, the IBC's incentive package provided a basis for major multifamily builders to not oppose the IBC requirement for all residential occupancies to be sprinklered when that issue was considered several years ago.

By accepting this code change, sprinkler protection for townhouses would become reasonably affordable to the builders who build townhouses and to the homeowners who buy them. As a result, we could take a significant step forward in improving life safety and reducing property losses in residential occupancies for decades to come.

The following is an explanation of each new proposed section relating to this sprinkler alternative for dwellings:

1. *Revise Section R101.2:* Typical townhouse construction is no more than 4 stories above grade plane. Presently when a developer goes from 3 to 4 stories above grade, the project is then required to be designed under the IBC. Covering townhouses up to 4 stories above grade plane in the IRC provides a significant incentive for developers. The impact on 4-story buildings would be significant enough to warrant installing sprinklers in 2- and 3-story buildings, which will gain far less benefit from this change, when one considers the overall package. The overall gain of having all townhouses equipped with fire sprinklers makes the allowance of 4-story townhouses under the IRC a worthwhile investment in safety.
2. *Add new Subsection R301.1.3.1 to the "Engineered design" requirement.* This new subsection will address the structural design requirements for townhouses built under the IRC that are 4 stories above grade. The existing structural requirements in the IRC are based on a maximum 3 stories above grade, and by referencing the IBC, proper design is assured.
3. *Rename Section R313 and add new Section R313.1:* This provides a charging requirement for providing residential sprinklers in accordance with NFPA 13D for townhouses. The two exceptions deal with issues not addressed by NFPA 13D, one is outside combustible decks and the other is private garages. The combustible deck sprinkler requirement is consistent with a similar provision to IBC Section 903.3.1.2.1, "Balconies and decks". Most likely a dry sidewall sprinkler supplied by a wet pipe sprinkler system would be used to comply with this exception. The garage sprinkler criteria are based on NFPA 13R Section 6.8.3.3. Dry pendent sprinklers supplied by a wet pipe sprinkler system would most likely be used to protect garages.
4. & 5. *Add new Exception #2 to R 317.2 and revise Exception #5 to R317.2.4:* This is a similar one hour exception that was in BOCA Code Section 310.5 Exception #2 for multiple single-family dwellings. That section of Code read: "In multiple single-family dwellings that are equipped throughout with an approved automatic sprinkler system installed in accordance with Section 906.2.3 (NFPA 13D), the fire-resistance rating between each dwelling unit shall not be less than 1 hour and shall be constructed as a fire partition."
6. *Add new Exception to Section R310.1:* The IRC already allows elimination of escape windows in Groups R-1, R-2, R-4 and I-1 occupancies (IBC Section 1026, Exception 1) based on the installation of fire sprinklers. NFPA Life Safety Code, also contains an NFPA 13D related exception to the escape window requirement for one- and two-family dwellings in Section 24.2.2.1.2(2).
7. *Revise Appendix P101:* The reduction in fire flow is similar to allowances granted by the IFC.

Cost Impact: The code change proposal may increase or decrease the cost of construction, depending on the value of sprinkler incentives versus the cost of adding sprinklers to a particular building.

Analysis: Review of proposed new standard NFPA 13D-07 indicated that, in the opinion of ICC Staff, the standard did comply with ICC standards criteria.

Committee Action:

Disapproved

Committee Reason: The committee felt that there was insufficient effective or substantial reason to move the sprinkler requirements out of Appendix P where it is now. The committee agreed that if the code is going to mandate sprinklers for new construction that it should apply to all structures in the scope of the International Residential Code not just townhouses in a piecemeal approach. The issues of fire flow and not wanting a direct reference to the International Fire Code were also issues in the committee's decision.

Assembly Action:

None

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

George Martin, Howard County, Department of Licenses & Permits, representing Maryland Building Officials Association (MBOA), requests Approval as Modified by this Public Comment.

Steven L. McDaniel, CPCA, New York State Building Officials Conference, requests Approval as Modified by this Public Comment.

Rick Morris, AvalonBay Communities, Inc., requests Approval as Modified by this Public Comment.

Replace proposal as follows:

1. Add new section as follows:

R313 FIRE SPRINKLER SYSTEM FOR TOWNHOUSES

R313.1 Townhouse Fire Sprinklers. An automatic residential fire sprinkler system shall be installed in townhouses.

Exception: A sprinkler system shall not be required when additions or alterations are made to existing townhouses that do not have a fire sprinkler system installed.

R312.2 Design and installation. Automatic residential fire sprinkler systems for townhouses shall be designed and installed in accordance with P2904.

(Renumber subsequent sections)

2. Modify AP101 as follows:

AP101 Fire sprinklers. An approved automatic fire sprinkler system shall be installed in new one-and two-family dwellings and townhouses in accordance with P2904 NFPA 13D.

3. Modify exception as follows:

R317.2 Townhouses. Each townhouse shall be considered a separate building and shall be separated by fire-resistance-rated wall assemblies meeting the requirements of Section R302 for exterior walls.

Exception: A common 2 1-hour fire-resistance rated wall is permitted for townhouses if such walls do not contain plumbing or mechanical equipment, ducts or vents in the cavity of the common wall. The wall shall be rated for fire exposure from both sides and shall extend to and be tight against exterior walls and the underside of the roof sheathing. Electrical installations shall be installed in accordance with Chapters 33 through 42. Penetrations of electrical outlet boxes shall be in accordance with Section R317.3.

4. Modify exception 5 as follows:

R317.2.4 Structural independence. Each individual townhouse shall be structurally independent.

Exceptions:

1. Foundations supporting exterior walls or common walls.
2. Structural roof and wall sheathing from each unit may fasten to the common wall framing.
3. Nonstructural wall coverings.
4. Flashing at termination of roof covering over common wall.
5. Townhouses separated by a common 2 1-hour fire-resistance-rated wall as provided in Section R317.2.

Commenter's Reason (Martin): In 1989 the State of Maryland enacted House Bill 658, "Sprinkler Systems – Installation in New Construction", that required dormitories, hotels, lodging or rooming houses, multifamily residential dwellings and townhouses to be sprinklered. Therefore, since 1990, townhouses in Maryland have been sprinklered and being so has not been detrimental to the homebuilding industry, but has been a major success to saving lives over the past 18 years.

To address reasonable fire protection and affordable housing, many Maryland jurisdictions over the years have permitted townhouse separation of one hour with sprinklers installed in accordance with NFPA 13D. Therefore, based on our past success with sprinklered townhouses with one hour separations between the townhouses, MBOA is in support of mandatory sprinklers in townhouses with one hour dwelling unit separations.

The modifications in Items #1 & #2 will coordinate the IRC Committee approved Code Proposal RP3-07/08 (the prescriptive sprinkler design criteria that is now being placed in the body of the IRC) with this code change.

Commenter's Reason (McDaniel): Our Building Officials Association believes that fair and reasonable sprinkler package should be provided in the IRC to encourage the installation of residential sprinkler systems in townhouse in the IRC. This public comment provides a good beginning with a sprinkler alternative that we believe meet these criteria.

To address reasonable fire protection and affordable housing, many other jurisdictions throughout the country over the years have permitted townhouse separation of one hour with sprinklers installed in accordance with NFPA 13D. Therefore, based on these past successes with sprinklered townhouses with one hour separations between the townhouses, our building officials association is in support of mandatory sprinklers in townhouses with one hour dwelling unit separations.

The modifications in Items #1 & #2 will coordinate the IRC Committee approved Code Proposal RP3-07/08 (the prescriptive sprinkler design criteria that is now being placed in the body of the IRC) with this code change.

Commenter's Reason (Morris) AvalonBay originally submitted RB66-07/08 because we believe that a fair and reasonable sprinkler package should be provided in the IRC to encourage the installation of residential sprinkler systems in townhouses in the IRC. Contrary to the Committee's published reason for disapproval of RB66, there are numerous state and local building code amendments to the IRC throughout the U.S. where townhouses are require to be sprinklered, whereas detached single family homes are not, because it is considered the "first step" in eventually getting all residential uses sprinklered. In fact, even though the committee also disapproved RB65 for the same reason as this code proposal (RB66), there was an assembly vote on RB65 and it passed, over the disapproval of the committee. Therefore, clearly the ICC membership does see merit in the rationale for mandatory sprinkling of townhouses.

This public comment simplifies the original RB66. It provides a good beginning for a townhouse sprinkler requirement that AvalonBay believes would meet code officials' and townhouse builders/developers' criteria as fair, reasonable and economical.

To address reasonable fire protection and affordable housing, many other jurisdictions throughout the country over the years have permitted townhouse separation of one hour with sprinklers installed in accordance with NFPA 13D. Therefore, based on these past successes with sprinklered townhouses with one hour separations between the townhouses, AvalonBay is in support of mandatory sprinklers in townhouses with one hour dwelling unit separations.

The modifications in Items #1 and #2 will coordinate the IRC Committee approved Code Proposal RP3-07/08 (the prescriptive sprinkler design criteria that is now being placed in the body of the IRC) with this code change.

Final Action: AS AM AMPC D

RB67-07/08

R302.1, Table R302.1, Table R302.1(2) (New), R317.2, R317.2.4, R317.2.5 (New), R309.7 (New), R313.2, R310.1, AP102 (New)

Proposed Change as Submitted:

Proponent: Tom Lariviere, Fire Department, Madison, MS, representing Fire & Life Safety Section of the International Association of Fire Chiefs (IAFC)

1. Revise as follows:

R302.1 (Supp) Exterior walls. Construction, projections, openings and penetrations of exterior walls of dwellings and accessory buildings shall comply with Table R302.1(1); or for dwellings equipped throughout with an automatic sprinkler system installed in accordance with NFPA 13D and Table R302.1(2).

Exceptions:

1. Walls, projections, openings, or penetrations in walls perpendicular to the line used to determine the fire separation distance.
2. Walls of dwellings and accessory structures located on the same lot.
3. Detached tool sheds and storage sheds, playhouses and similar structures exempted from permits are not required to provide wall protection based on location on the lot. Projections beyond the exterior wall shall not extend over the lot line.
4. Detached garages accessory to a dwelling located within 2 feet (610 mm) of a lot line are permitted to have roof eave projections not exceeding 4 inches (102 mm).
5. Foundation vents installed in compliance with this code are permitted.

**TABLE R302.1(1) (Supp)
EXTERIOR WALLS**

EXTERIOR WALL ELEMENT		MINIMUM FIRE-RESISTANCE RATING	MINIMUM FIRE SEPARATION DISTANCE
Walls	(Fire-resistance rated)	1 hour with exposure from both sides	0 feet
	(Not fire-resistance rated)	0 hours	5 feet
Projections	(Fire-resistance rated)	1 hour on the underside	2 feet
	(Not fire-resistance rated)	0	5 feet
Openings	Not allowed	N/A	< 3 feet
	25 % Maximum of Wall Area	0 hours	3 feet
	Unlimited	0 hours	5 feet
Penetrations	All	Comply with Section R317.3	< 5 feet
		None required	5 feet

N/A = Not Applicable

TABLE R302.1(2)
EXTERIOR WALLS – DWELLINGS WITH FIRE SPRINKLERS

<u>EXTERIOR WALL ELEMENT</u>		<u>MINIMUM FIRE-RESISTANCE RATING</u>	<u>MINIMUM FIRE SEPARATION DISTANCE</u>
<u>Walls</u>	<u>(Fire-resistance rated)</u>	<u>1 hour with exposure to the fire from the outside</u>	<u>0 feet</u>
	<u>(Not fire-resistance rated)</u>	<u>0 hours</u>	<u>3 feet¹</u>
<u>Projections</u>	<u>Fire-resistance rated</u>	<u>1 hour on the underside</u>	<u>2 feet¹</u>
	<u>(Not fire-resistance rated)</u>	<u>0</u>	<u>3 feet</u>
<u>Openings</u>	<u>Not allowed</u>	<u>N/A</u>	<u>< 3 feet</u>
	<u>Unlimited</u>	<u>0</u>	<u>3 feet¹</u>
<u>Penetrations</u>	<u>All</u>	<u>Comply with Section R317.3</u>	<u>< 3 feet</u>
		<u>None required</u>	<u>3 feet¹</u>

¹ For residential subdivisions where all dwellings are equipped throughout with an automatic sprinkler systems installed in accordance with NFPA 13D, as amended by R309.7, the fire separation distance for non-rated exterior walls and rated projections shall be permitted to be reduced to zero feet, and unlimited unprotected openings and penetrations shall be permitted, where the adjoining lot provides an open setback yard that is 6 feet or more in width on the opposite side of the property line.

2. Revise as follows:

R317.2 Townhouses. Each townhouse shall be considered a separate building and shall be separated by fire-resistance-rated wall assemblies meeting the requirements of Section R302 for exterior walls.

Exceptions:

1. A common 2-hour fire-resistance-rated wall is permitted for townhouses if such walls do not contain plumbing or mechanical equipment, ducts or vents in the cavity of the common wall. Electrical installations shall be installed in accordance with Chapters 33 through 42. Penetrations of electrical outlet boxes shall be in accordance with Section R317.3.
2. A common 1-hour fire-resistance rated wall is permitted for townhouses equipped throughout with an automatic sprinkler system installed in accordance with NFPA 13D, as amended by R309.7 and R317.2.5, up to an aggregate floor area of 28,000 square feet per building. The wall shall be rated for fire exposure from both sides and shall extend to and be tight against exterior walls and the underside of the roof sheathing. Where roof surfaces adjacent to the wall are at different elevations, the rated wall shall continue to the upper roof sheathing.

R317.2.4 Structural independence. Each individual townhouse shall be structurally independent.

Exceptions:

1. Foundations supporting exterior walls or common walls.
2. Structural roof and wall sheathing from each unit may fasten to the common wall framing.
3. Nonstructural wall coverings.
4. Flashing at termination of roof covering over common wall.
5. Townhouses separated by a common 2-hour fire-resistance-rated wall as provided in Section R317.2.

3. Add new text as follows:

R317.2.5 Fire sprinklers for balconies, decks, porches and ground floor patios. Where townhouses have separation walls designed based on R317.2, Exception 2, sprinklers shall be provided to protect exterior combustible balconies, decks, porches and ground floor patios located under such combustible projections. Exterior sprinklers and supply piping shall be protected from freezing where freeze protection is required by P2603.6. Where sidewall sprinklers are installed beneath exposed wood joists, sprinklers shall be permitted to be installed with deflectors located 1 inch (25 mm) to 6 inches (152 mm) below the joists, not to exceed a maximum distance of 14 inches (356 mm) below the deck.

4. Add new text as follows:

R309.7 Fire Sprinklers. Private garages shall be protected by fire sprinklers, where:

1. The garage is in a townhouse having separation walls designed based on R317.2, Exception 2.
2. A garage wall has been designed based on Table R302.1(b), Footnote 1.

Sprinklers in garages shall be connected to a system that complies with NFPA 13D. Garage sprinklers shall be residential sprinklers or quick-response sprinklers, designed to provide a density of 0.05 gpm/ft². Garage doors shall not be considered obstructions with respect to sprinkler placement.

5. Revise as follows:

R313.2 Location. Smoke alarms shall be installed in the following locations:

1. In each sleeping room.
2. Outside each separate sleeping area in the immediate vicinity of the bedrooms.

Exception: In dwelling units equipped throughout with an automatic sprinkler system installed in accordance with NFPA 13D.

3. In a common area on each additional story of the dwelling, including basements but not including crawl spaces and uninhabitable attics. In dwellings or dwelling units with split levels and without an intervening door between the adjacent levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level is less than one full story below the upper level.

When more than one smoke alarm is required to be installed within an individual dwelling unit the alarm devices shall be interconnected in such a manner that the actuation of one alarm will activate all of the alarms in the individual unit.

6. Revise as follows:

R310.1 (Supp) Emergency escape and rescue required. Basements and every sleeping room shall have at least one operable emergency escape and rescue opening. Such opening shall open directly into a public street, public alley, yard or court. Where basements contain one or more sleeping rooms, emergency egress and rescue openings shall be required in each sleeping room. Where emergency escape and rescue openings are provided they shall have a sill height of not more than 44 inches (1118 mm) above the floor. Where a door opening having a threshold below the adjacent ground elevation serves as an emergency escape and rescue opening and is provided with a bulkhead enclosure, the bulkhead enclosure shall comply with Section R310.3. The net clear opening dimensions required by this section shall be obtained by the normal operation of the emergency escape and rescue opening from the inside. Emergency escape and rescue openings with a finished sill height below the adjacent ground elevation shall be provided with a window well in accordance with Section R310.2. Emergency escape and rescue openings shall open directly into a public way, or to a yard or court that opens to a public way.

Exceptions:

1. Basements used only to house mechanical equipment and not exceeding total floor area of 200 square feet (18.58 m²).
2. In dwelling units equipped throughout with an automatic sprinkler system installed in accordance with NFPA 13D.

7. Add new text as follows:

AP102 Fire flow. As provided in IFC Appendix B, where adopted, the fire-flow requirements for one and two family dwellings and townhouses shall be permitted to be reduced by 50% for buildings equipped throughout with an automatic sprinkler system installed in accordance with NFPA 13D.

Reason: Fire sprinklers are universally recognized as the most effective means of reducing America's fire losses and preventing firefighter deaths and injuries associated with firefighting operations. Both of these objectives are fundamental to the mission of the International Association of Fire Chiefs (IAFC). Through this proposal, the IAFC hopes to encourage more widespread use of residential sprinklers by establishing a package of sprinkler incentives in the IRC that will appeal to homebuilders and consumers.

The use of incentives to encourage the installation of fire sprinkler systems is traceable in model building codes for at least 80 years, and today, these incentives are woven into the text of nearly every ICC code. Likewise, in communities throughout the United States where residential sprinklers are required, incentives play a critical roll in developing and maintaining community support for sprinklers. Nevertheless, sprinkler incentives remain few and far between in the IRC, offering little to offset the cost of installing sprinklers or to enhance their value through building design options. Many stakeholders in the residential construction industry have made it clear that this must change before we'll see residential sprinklers in the mainstream of new home construction, and as an organization dedicated to public safety, IAFC chose to undertake the challenge of assembling a reasonable IRC incentive package to motivate the use of sprinklers. To identify incentives that would be seen by the homebuilding industry as having value, input was sought and received from the National Association of Homebuilders, and although NAHB was unable to consider endorsing this proposal prior to the code change submittal deadline, their input is reflected in the proposed text.

Overall, IAFC believes that the package of incentives contained in this proposal will significantly enhance the safety of buildings constructed in accordance with the IRC, and ultimately, we expect to see more homes protected by fire sprinklers once these revisions are published in the IRC. Although individual items in this package may be viewed by some as too liberal, while others will say that they are not liberal enough, IAFC believes that each of the suggested changes is reasonable and justifiable for a sprinklered dwelling.

The following discussion provides justifications for each of the 7 parts of this proposal.

1. **Modify existing Section R302.1 and add a new Table R302.1(b):** This change provides a significant financial and design incentive for residential sprinklers. From a financial perspective, the proposal permits cost reductions related to exterior wall construction and, in the case of a planned community, could result in more developable lots. From a design advantage perspective, the proposal permits homes to have larger footprints without triggering fire-rated exterior walls and permits more flexible use of windows on walls facing property lines.

From a firesafety perspective, the proposed requirements generally put the code back where it was in 2000 and 2003, so there is essentially no concession compared to how homes have been built under the IRC since the code was first published in 2000. In 2006, the IRC's fire separation distances for non-rated exterior walls were increased from 3 feet to 5 feet for the purpose of coordinating the IRC's residential separation distances with those in the IBC (Code Change G128-03/04). History shows that residential sprinklers reliably limit fire spread to the room of origin, and with such protection, allowing the code to revert to a 3-foot separation distance provides a reasonable compensation for sprinklers. Certainly, the probability of a favorable outcome in the event of a fire is much better for a sprinklered building with a 3-foot separation versus a nonsprinklered building with a 5-foot separation, so encouraging sprinklers is a preferred approach.

2. **Revise the exceptions to R317.2 and R317.2.4:** Because residential sprinklers will slow fire growth and often completely extinguish a fire, the fire challenge to townhouse separation walls is expected to be significantly delayed, reduced or eliminated. Precedent for this incentive exists in Section 310.5 Exception 2 of the BOCA code, which read: "In multiple single-family dwellings that are equipped throughout with an approved automatic sprinkler system installed in accordance with Section 906.2.3 (NFPA 13D), the fire resistance rating between each dwelling unit shall not be less than 1 hour and shall be constructed as a fire partition." Clearly, the overall level of safety and best chance for a favorable outcome in the event of a fire is through the use of fire sprinklers with a 1-hour wall versus no sprinklers and a 2-hour wall.
3. **Add a new Section R317.2.5:** This revision provides a limitation on the incentive described in Part 2 above. Because NFPA 13D systems are being recognized to a limited degree for property protection, as well as life safety, it was considered appropriate to ask for sprinklers to protect combustible exterior projections sometimes associated with outdoor fires, typically associated with a barbecue grill on a deck. Similar requirements are established by the IBC in Section 903.3.1.2.1 for NFPA 13R systems. Often, this type of protection is provided by dry sidewall sprinklers connected to a wet pipe sprinkler system.
4. **Add a new Section R309.7:** This revision provides a limitation on the incentive described in Part 2 above. Because NFPA 13D systems are being recognized to a limited degree for property protection, as well as life safety, it was considered appropriate to ask for sprinklers to protect sprinklers to protect garages. Design criteria suggested for sprinklers was derived from NFPA 13R Section 6.8.3.3, which addresses sprinkler protection for garages in buildings protected by NFPA 13R sprinkler systems. Often, this type of protection is provided by dry pendent sprinklers connected to a wet pipe sprinkler system.
5. **Revise Section R313.2:** The value of smoke alarms with respect to life safety is well recognized. Nevertheless, code requirements associated with how many smoke alarms must be installed in a dwelling and where they must be located were developed without respect to the presence of fire sprinklers. It is widely known that the addition of fire sprinklers to a dwelling will provide a significant improvement to life safety and property protection versus having smoke alarms alone, so eliminating a minimal number of smoke alarms as part of a package to gain sprinklers is a reasonable approach.

Contrary to what one might expect as a result of reducing the number of smoke alarms, the proposed revision could actually improve the performance of smoke alarms because it will require that a minimum of one smoke alarm be located in the common area on each floor. Currently, the code only requires smoke alarms outside of sleeping areas, often satisfied by installing a smoke alarm in the hallway outside of bedroom doors. The number of alarms will only be reduced in cases where there is more than one sleeping area on a floor.

Given that fires often start in kitchens and living rooms, installing a smoke alarm in a more central area, as required by this proposal, may well result in more effective detection of fires in these areas. Plus, with the code still requiring smoke alarms in each bedroom, connected to common area smoke alarms, waking effectiveness and protection of bedroom areas will not be impacted by this proposal.

6. **Add a new Exception to Section R310.1:** This part of the proposal will, on its own, provide enough incentive to get a home sprinklered in some cases. Homebuilders and homeowners often want greater flexibility to use a variety of window types and configurations to provide required light and ventilation (it should be noted an exception to the emergency escape window requirement is unlikely to result in rooms without windows or doors because rooms will still require light and ventilation to comply with R303.1 and it seems unlikely that homeowners would choose to forgo natural light in bedrooms). For example, by allowing side-hinged windows, smaller windows or strategically positioned windows that wouldn't meet the current escape window requirements, there are potential gains in energy efficiency and wind resistance versus traditional hung windows with friction seals used to meet escape provisions.

To those who might regard egress windows as a safety feature that should not be equated to sprinkler protection, consider that the IRC already allows elimination of escape windows in Groups R-1, R-2, R-4 and I-1 occupancies (IBC Section 1026, Exception 1) based on the installation of fire sprinklers. It simply makes no sense that sprinkler protection should be considered as providing adequate safety without escape windows in fraternities, apartments, hotels, adult care, child care and assisted living facilities, among others, but not in one- and two-family dwellings. In fact, even the NFPA Life Safety Code, a document with a pure life safety focus, provides an exception to the escape window requirement for one- and two-family dwellings [2006 NFPA 101, Section 24.2.2.1.2(2)] based on the installation of fire sprinklers in accordance with NFPA 13D. Recognizing the high level of safety that will be provided in homes that have both smoke alarms and sprinklers, providing adequate time for occupants to escape a fire using the normal means of egress, and with so much code precedent and a high incentive value, it makes sense to extend the sprinkler allowance for escape windows to include one- and two-family dwellings and townhouses.

7. **Add a new Section AP102:** The reduction in fire flow simply calls attention to an allowance already permitted by the IFC.

Cost Impact: The code change proposal will decrease the cost of construction.

Analysis: Review of proposed new standard NFPA 13D-07 indicated that, in the opinion of ICC Staff, the standard did comply with ICC standards criteria.

Disapproved

Committee Action:

Committee Reason: The committee felt that without mandatory language requiring sprinkler systems in the body of the code the trade off's offered by this code change don't belong. Further, the issues of outside wall protection and attic protection were a concern with this proposal. There was additional concern about trading off needed passive protection. Overall, the committee felt that there was insufficient effective or substantial reason to move the sprinkler requirements out of Appendix P where it is now. Keeping this in the appendix makes it available to jurisdictions that wish to take advantage of it and just because it is in the Appendix doesn't mean the provisions are hidden.

Assembly Action:

None

Individual Consideration Agenda

This item is on the agenda for individual consideration because public comments were submitted.

Public Comment 1:

Robert F. Loeper, Jr., President, representing Region VII Chapter of ICC, requests Approval as Modified by this Public Comment.

George Martin, Howard County, Department of Licenses and Permits, representing Maryland Building Officials Association (MBOA), requests Approval as Modified by this Public Comment.

Steven L. McDaniel, CPCA, New York State Building Officials Conference, requests Approval as Modified by this Public Comment.

Rick Morris, AvalonBay Communities, Inc., requests Approval as Modified by this Public Comment.

Replace proposal as follows:

R302.1 Exterior walls. Construction, projections, openings and penetrations of exterior walls of dwellings and accessory buildings shall comply with Table R302.1(1) or for dwellings equipped throughout with an automatic sprinkler system installed in accordance with Section P2904, Table R302.1(2). These provisions shall not apply to walls, projections, openings or penetrations in walls that are perpendicular to the line used to determine the fire separation distance. Projections beyond the exterior wall shall not extend more than 12 inches (305 mm) into the areas where openings are prohibited.

Exceptions:

1. Detached tool sheds and storage sheds, playhouses and similar structures exempted from permits are not required to provide wall protection based on location on the lot. Projections beyond the exterior wall shall not extend over the lot line.
2. Detached garages accessory to a dwelling located within 2 feet (610 mm) of a lot line are permitted to have roof eave projections not exceeding 4 inches (102 mm).
3. Foundation vents installed in compliance with this code are permitted.

**TABLE R302.1(1)
EXTERIOR WALLS**

Exterior Wall Element		Minimum Fire-Resistance Rating	Minimum Fire Separation Distance
Walls	(Fire-resistance rated)	1 hour with exposure from both sides	0 feet
	(Not fire-resistance rated)	0 hours	5 feet
Projections	(Fire-resistance rated)	1 hour on the underside	2 feet
	(Not fire-resistance rated)	0	5 feet
Openings	Not allowed	N/A	< 3 feet
	25 % Maximum of Wall Area	0 hours	3 feet
	Unlimited	0 hours	5 feet
Penetrations	All	Comply with Section R317.3	< 5 feet
		None required	5 feet

N/A = Not Applicable

**TABLE R302.1(2)
EXTERIOR WALLS – DWELLINGS WITH FIRE SPRINKLERS**

Exterior Wall Element		Minimum Fire-Resistance Rating	Minimum Fire Separation Distance
Walls	(Fire-resistance rated)	1 hour with exposure to the fire from the outside	0 feet
	(Not fire-resistance rated)	0 hours	3 feet ¹
Projections	Fire-resistance rated	1 hour on the underside	2 feet ¹
	(Not fire-resistance rated)	0	3 feet
Openings	Not allowed	N/A	< 3 feet
	Unlimited	0	3 feet ¹
Penetrations	All	Comply with Section R317.3	< 3 feet
		None required	3 feet ¹

1. For residential subdivisions where all dwellings are equipped throughout with an automatic sprinkler systems installed in accordance with Section P2904, the fire separation distance for non-rated exterior walls and rated projections shall be permitted to be reduced to zero feet, and unlimited unprotected openings and penetrations shall be permitted, where the adjoining lot provides an open setback yard that is 6 feet or more in width on the opposite side of the property line.

R310.1 Emergency escape and rescue required. Basements and every sleeping room shall have at least one operable emergency and rescue opening. Such opening shall open directly into a public street, public alley yard or court. Where basements contain one or more sleeping rooms, emergency egress and rescue openings shall be required in each sleeping room, but shall not be required in adjoining areas of the basement. Where emergency escape and rescue openings are provided they shall have a sill height of not more than 44 inches (1118 mm) above the floor. Where a door opening having a threshold below the adjacent ground elevation serves as an emergency escape and rescue opening and is provided with a bulkhead enclosure, the bulkhead enclosure shall comply with Section R310.3. The net clear opening dimensions required by this section shall be obtained by the normal operation of the emergency escape and rescue opening from the inside. Emergency escape and rescue openings with a finished sill height below the adjacent ground elevation shall be provided with a window well in accordance with Section R310.2. Emergency escape and rescue openings shall open directly into a public way, or to a yard or court that opens to a public way.

Exceptions:

1. Basements used only to house mechanical equipment and not exceeding total floor area of 200 square feet (18.58 m2).
2. In dwelling units equipped throughout with an automatic sprinkler system installed in accordance with Section P2904.

Commenter's Reason (Bartell/Loeper): ICC Region 7 unanimously believes that fair and reasonable sprinkler alternatives should be provided in the IRC to encourage the installation of residential sprinkler systems. This public comment provides a good beginning with these two (2) sprinkler alternatives that we believe meet these criteria.

To address reasonable fire protection and affordable housing, there have been many jurisdictions over the years that have permitted the elimination of the bedroom emergency window (which is called the "secondary means of escape" under the NFPA 101, "Life Safety Code") in accordance with NFPA 101 Section 24.2.2.1.2 without any detriment to the safety of the occupants in these sprinklered dwellings. This window exception for sprinklers in one and two-family dwellings has been in the Life Safety Code since the 1981 edition (over 9 editions and 27 years). In fact, in those jurisdictions that have permitted the use of this exception the great majority of bedroom designs have included the use of windows that meet the emergency window criteria and this exception has typically been used to accommodate specific design features or unusual circumstance. This truly does afford additional flexibility to the homebuilder or homeowner to utilize other types of windows and design features without the encumbrance of the minimum opening and height above the floor requirements, and, without any detriment to the safety of the occupants of these sprinklered dwellings.

In addition, the exterior wall provisions for sprinklered dwellings, is also a reasonable fire protection compensatory feature to provide and also addresses the affordable housing issue.

Additionally, the modifications in this public comment referencing Section P2904 will coordinate the IRC Committee approved Code Proposal RP3-07/08 (the prescriptive sprinkler design criteria that is now being placed in the body of the IRC) with this code change.

Commenter's Reason (Martin): In 1989 the State of Maryland enacted House Bill 658, "Sprinkler Systems – Installation in New Construction", that required dormitories, hotels, lodging or rooming houses, multifamily residential dwelling and townhouses to be sprinklered. Therefore, since 1990, townhouses in Maryland have been sprinklered and being so has not been detrimental to the homebuilding industry, but has been a major success to saving lives over the past 18 years.

In addition to the sprinkling of the above-noted residential occupancies by the State of Maryland, as of this year 79 out of 157 Maryland jurisdictions have mandatory sprinkling of one-and two family dwellings.

To address reasonable fire protection and affordable housing, many Maryland jurisdictions over the years have permitted the elimination of the bedroom emergency window (which is called the "secondary means of escape" under the NFPA 101, "Life Safety Code") in accordance with NFPA 101 Section 24.2.2.1.2 without any detriment to the safety of the occupants in these sprinklered dwellings. This window exception for sprinklers in one and two family dwellings has been in the Life Safety Code since the 1981 edition (over 9 editions and 27 years). In fact, just because jurisdictions permit this exception does not mean in the great majority of bedroom designs that no window is provided. It only provides additional flexibility to the homebuilder or homeowner to provide other types of windows that they desire without the encumbrance of the minimum opening and height above the floor requirement.

In addition, the exterior wall provisions for sprinklered dwellings, is also a reasonable fire protection compensatory feature to provide and also addresses the affordable housing issue.

Therefore, based on our past success with sprinkling one-and two dwellings in over half the jurisdictions in Maryland over the past 18 years, MBOA is in support of this public proposal to provide further incentives to encourage sprinkling of dwellings in the IRC.

The modifications in this public comment to reference Section P2904 will coordinate the IRC Committee approved Code Proposal RP3-07/08 (the prescriptive sprinkler design criteria that is now being placed in the body of the IRC) with this code change.

Commenter's Reason (McDaniel): Our Building Officials Association believes that fair and reasonable sprinkler alternatives should be provided in the IRC to encourage the installation of residential sprinkler systems in the IRC. This public comment provides a good beginning with two (2) sprinkler alternatives that we believe meet these criteria.

To address reasonable fire protection and affordable housing, there has been many jurisdictions over the years that have permitted the elimination of the bedroom emergency window (which is called the "secondary means of escape" under the NFPA 101, "Life Safety Code") in accordance with NFPA 101 Section 24.2.2.1.2 without any detriment to the safety of the occupants in these sprinklered dwellings. This window exception for sprinklers in one and two family dwellings has been in the Life Safety Code since the 1981 edition (over 9 editions and 27 years). In fact, just because jurisdictions permit this exception does not mean in the great majority of bedroom designs that no window is provided. It only provides additional flexibility to the homebuilder or homeowner to provide other types of windows meeting the light and ventilation requirements under the IRC Code Section R303 without the encumbrance of the minimum opening and height requirement above the floor of Section R310.2.

In addition, the exterior wall provisions for sprinklered dwellings, is also a reasonable fire protection compensatory feature to provide and also addresses the affordable housing issue.

In addition, the modifications in this public comment to reference Section P2904 will coordinate the IRC Committee approved Code Proposal RP3-07/08 (the prescriptive sprinkler design criteria that is now being placed in the body of the IRC) with this code change.

Commenter's Reason (Morris): After reading the Committee's published reason for disapproval and then watching the video of the actual public testimony on RB67-07/08 at <http://www.ircfiresprinkler.org/resources.htm>, I find the Committee's reason for turning down this reasonable sprinkler alternative package that was submitted by the International Association of Fire Chiefs, illogical and without reasonable merit. Based on the IAFC's written supporting statement and the public testimony give in support of this code proposal vs. the opposing testimony, there was more than adequate justification to approve this code proposal. This code proposal (RB67) does NOT mandate sprinklers, but only provided fair and reasonable "trade-offs" when sprinklers are installed.

AvalonBay believes that fair and reasonable sprinkler alternatives should be provided in the IRC to encourage the installation of residential sprinkler systems in the IRC. This public comment provides a good beginning with two (2) sprinkler alternatives that we believe meet this minimum criteria.

To address reasonable fire protection and affordable housing, there have been many jurisdictions over the years that her permitted the elimination of the bedroom emergency window (which is called the "secondary means of escape" under NFPA 101, "Life Safety Code") in accordance with NFPA 101, Section 24.2.2.1.2 without any detriment to the safety of the occupants in these sprinklered dwellings. This window exception for sprinklers in one and two family dwellings has been in the Life Safety Code since the 1981 edition (over 9 editions and 27 years). In fact, just because jurisdictions permit this exception does not mean in the great majority of bedroom designs that no window is provided. It only provides additional flexibility to the homebuilder or homeowner to provide other types of windows that they desire without the encumbrance of the minimum opening and height above the floor requirement.

In addition, the exterior wall provisions for sprinklered dwellings, is also a reasonable fire protection compensatory feature to provide and also addresses the affordable housing issue.

In addition, the modifications in this public comment to reference Section P2904 will coordinate the IRC Committee approved code proposal RP3-07/08 (the prescriptive sprinkler design criteria that is now being placed in the body of the IRC) with this code change.

Public Comment 2:

Crystal Feiser, representing West Virginia Code Officials Association, requests Disapproval.

Commenter's Reason: The Committee's action to disapprove this and all proposals to mandate sprinklers in the body of the IRC is correct and should not be overturned. The decision to require sprinklers should be left up to state and local jurisdictions. Appendix P can be adopted, if so desired. West Virginia will be forced to amend or delete the fire sprinkler requirements for the following reasons: water line size, pressure and lack of water availability.

Final Action: AS AM AMPC_____ D



RB68-07/08

R313.1 (New), Chapter 43 (New)

Proposed Change as Submitted:

Proponent: Sean DeCrane, Fire Department, Cleveland, OH, representing International Association of Fire Fighters, Local 93

1. Add new text as follows:

R313.1 Fire protection systems. One and two family dwellings that incorporate lightweight truss or engineered lightweight material such as wooden I-beams, cold form steel or trusses in the floor or ceiling areas shall have the floors/ceilings assemblies protected by a thirty (30) minute fire-rated barrier.

Exception: Where the building is protected with a sprinkler system designed to NFPA 13D.

(Renumber subsequent sections)

2. Add standard to Chapter 43 as follows:

NFPA

13D-07 Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes

Reason: On August 13, 2006 a Wisconsin fire fighter was killed, and a second fire fighter injured, when the floor they were operating on collapsed sending them into the basement. One fire fighter fell directly into the room of origin and was killed, the second fire fighter landed on the opposite side of a block wall and survived by shielding herself and making an escape through a rear window. They checked the floor to ensure it was safe and solid, just prior to collapse they heard a loud crack. T

The floor they were operating on was unprotected lightweight construction that collapsed without warning. In the ensuing investigation, the National Institute for Occupational Safety and Health released report F2006-26. One of the recommendations is to "modify current building codes to require that lightweight trusses be protected with a fire barrier". This should not only pertain to truss construction. There are additional forms of construction that can be determined to be lightweight, cold form steel, bar joists, wooden engineered I-beam, etc., the recent trend in residential construction is to use products that are financially beneficial. It is the belief of many of us in the fire service that as the industry engineers products to a more finite point we are losing our safety factors.

In April, 2005, NIOSH released their report "Preventing Injuries and Deaths of Fire Fighters due to Truss System Failures". In their release they recommended the placement of a labeling system on buildings to indicate the type of construction. While this recommendation will probably not be acceptable to residents of a one or two family home, we can mandate that they increase the protection of the construction type to provide increased safety to the residents and the responding fire fighters.

1. National Institute for Occupational Safety and Health Report F206-26, July, 2007.
2. National Institute for Occupational Safety and Health Alert, "Preventing Injuries and Deaths of Fire Fighters due to Truss System Failures".

Cost impact: This code change proposal will increase the cost of construction.

Analysis: Review of proposed new standard NFPA 13D-07 indicated that, in the opinion of ICC Staff, the standard did comply with ICC standards criteria.

Committee Action:

Disapproved

Committee Reason: The committee indicated that the proposed language lacked the proper technical definition of lightweight materials. Further, the committee raised some issues with crawl spaces as they applied to the proposed text as it addressed floor or ceiling areas. There was insufficient technical justification specifically no time differences provided as they apply to lightweight trusses and lightweight material including wooden I-beams and cold formed steel or trusses to support this proposal.

Assembly Action:

None

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Sean DeCrane, Fire Department, Cleveland, OH, representing international Association of Fire Fighters, requests Approval as Modified by this Public Comment.

Replace proposal as follows:

R313.1 Fire protection systems: One Family and Two Family Occupancies incorporating designed lightweight materials such as trusses or engineered lightweight material (including but not limited to wooden I-Beams, cold-form steel or light gauge bar joist trusses) in the structural floor or ceiling areas, shall protect the floors/ceilings areas with a barrier exhibiting a thirty (30) minute fire resistance on the underside of the floor/ceiling system.

Exception: If the underside of a floor system is a crawl space where no combustible materials are stored.

(Renumber subsequent sections)

Commenter's Reason: On August 13, 2006 a Wisconsin fire fighter was killed, and a second fire fighter injured, when the floor they were operating on collapsed sending them into the basement. One fire fighter fell directly into the room of origin and was killed, the second fire fighter landed on the opposite side of a block wall and survived by shielding herself and making an escape through a rear window. They checked the floor to ensure it was safe and solid, just prior to collapse they heard a loud crack. T

The floor they were operating on was unprotected lightweight construction that collapsed without warning. In the ensuing investigation, the National Institute for Occupational Safety and Health released report F2006-26. One of the recommendations is to "modify current building codes to require that lightweight trusses be protected with a fire barrier". This should not only pertain to truss construction. There are additional forms of construction that can be determined to be lightweight, cold form steel, bar joists, wooden engineered I-beam, etc., the recent trend in residential construction is to use products that are financially beneficial. It is the belief of many of us in the fire service that as the industry engineers products to a more finite point we are losing our safety factors.

In their report 2007-12 released May 16, 2008, NIOSH recommended "Ensure fire fighters are trained for extreme conditions such as high winds and rapid fire progression associated with lightweight construction". They further stated, "In this era of new lightweight construction, training procedures covering strategy and tactics in extreme operations conditions, such as high winds and lightweight building construction (i.e. materials and design) are needed for all levels of fire fighters. Lightweight constructed buildings fail rapidly with little warning, complicating rescue efforts. The potential for fire fighters to become trapped or involved in a collapse may be increased. There are twenty-nine actions for fire fighters can take to protect themselves when confronted with buildings utilizing lightweight building components as structural members. They range from looking for signs or indicators that these materials are used in buildings (such as, newer structures, large unsupported spans, and heavy black smoke being generated) to getting involved in newer building code development".

On September 27, 2007 NIOSH released report 2006-24. The first recommendation of the report read "Ensure that fire fighters and incident commanders are aware unprotected pre-engineered I-joist floor systems may fail at a faster rate than solid wood joists when exposed to direct fire impingement, and they should plan interior operations accordingly". The discussion of the recommendation is quite lengthy but identifies the

advantages of the construction industry using this type of construction but also relates the dangers to fire fighters, "The Illinois Fire Service Institute, at the University of Illinois, conducted tests to help determine the structural stability of sample floor systems. These studies suggest that engineered wooden I-beams can fail in as little as 4 minutes and 40 seconds under controlled test conditions". The report also states that weakened floors are difficult to detect from above as the floor surface may appear intact.

On November 16, 2007, NIOSH released report F2007-07. In this Fire Fighter Death in the Line-of-Duty report, NIOSH recommends "building code officials and local authorities having jurisdiction should consider modifying the current codes to require that lightweight trusses are protected with a fire barrier on both the top and the bottom". The report further states "In this incident, the floor trusses for the first floor did not have any protection on the bottom cord, which immediately exposed the trusses to fire in the basement. Unfinished basements are very common throughout the country. Basements typically house additional fire exposures such as alternative heating sources, hot water heaters, clothes dryers, etc.. It is critical for trusses and lightweight engineered wood I-beams that are used in a load-bearing assembly to be protected with a thermal barrier such as gypsum wallboard. The function of the thermal barrier is a critical factor in the fire performance of the assembly".

In April, 2005, NIOSH released their report "Preventing Injuries and Deaths of Fire Fighters due to Truss System Failures". In their release they recommended the placement of a labeling system on buildings to indicate the type of construction. While this recommendation will probably not be acceptable to residents of a one or two family home, we can mandate that they increase the protection of the construction type to provide increased safety to the residents and the responding fire fighters.

1. National Institute for Occupational Safety and Health Report F206-26, July, 2007.
2. National Institute for Occupational Safety and Health Report F2007-12, May, 2008.
3. National Institute for Occupational Safety and Health Report F206-24, September, 2007.
4. National Institute for Occupational Safety and Health Report F2007-07, November, 2007.
5. National Institute for Occupational Safety and Health Alert, "Preventing Injuries and Deaths of Fire Fighters due to Truss System Failures".

Final Action: AS AM AMPC **D**

RB71-07/08
R313, R313.1.1 (New), R313.1.2 (New), R313.1.3 (New), Chapter 43 (New)

Proposed Change as Submitted:

Proponent: Roger R. Evans, Park City Municipal Corporation, representing Utah Chapter of ICC

1. Revise section title as follows:

SECTION R313
SMOKE ALARMS

2. Add new text as follows:

R313.1.1 Carbon monoxide alarms. In new construction, dwelling units within which fuel-fired appliances are installed shall be provided with an approved carbon monoxide alarm installed outside of each separate sleeping area in the immediate vicinity of the bedroom(s).

R313.1.2 Where required-existing dwellings. In existing dwellings, where interior alterations, repairs, fuel-fired appliance replacements of additions requiring a permit occur, or where one or more sleeping rooms are added or created, carbon monoxide alarms shall be provided in accordance with Section 313.1.1.

R313.1.3 Alarm requirements. The required carbon monoxide alarms shall be clearly audible in all bedrooms over background noise levels with all intervening doors closed. Carbon monoxide alarms shall be listed as complying with UL 2034 and shall be installed in accordance with this code and the manufacturer's installation instructions.

(Renumber subsequent sections)

3. Add standard to Chapter 43 as follows:

UL
2034-96 Standard for Single and Multiple Station Carbon Monoxide Alarms

Reason: According to the Journal of the American Medical Association (JAMA), carbon monoxide is the leading cause of accidental poisoning deaths in America. Over 1,500 people die annually due to accidental carbon monoxide exposure and an additional 10,000 seek medical attention. www.homesafe.com

Cost Impact: The code change proposal will increase the cost of construction from between \$50.00 to \$300.00 per dwelling unit.

Analysis: Review of proposed new standard UL 2034-96 indicated that, in the opinion of ICC Staff, the standard did comply with ICC standards criteria, Section 3.6.3.1.

Hodge, Vernon (DHCD)

From: Wallace, Clinton (DHCD)
Sent: Wednesday, May 20, 2009 9:31 AM
To: Hodge, Vernon (DHCD)
Subject: FW: Fire Sprinkler Protection

FYI

Clinton Wallace
 State Building Codes Administrator
 Division of Building and Fire Regulation
 Department of Housing and Community Development
 Commonwealth of Virginia
 804-371-7161 Office
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From: Matchneer, William W [mailto:william.w.matchneer@hud.gov]
Sent: Friday, May 15, 2009 4:15 PM
To: 'MHARRDG@aol.com'; 'Mark Weiss (MMARKWEISS@AOL.COM)'; 'prdaniels@fuquamgmt.com'; 'charles44@ameritech.net'; 'jack.henry@chiefind.com'; 'lkeener@palmharbor.com'; 'rickmurdock@guerdon.com'; 'ronnie@hstr.com'; 'nashua@nashuahomesofidaho.com'; 'scott@heritagehomesandrealty.com'; 'buck@hstr.com'; 'pat@shamrock-homes.com'; 'readm@fourseasonshousing.com'; 'wbell@palmharbor.com'; 'kengeljack@hi-techhousing.com'; 'jweldy@verizon.net'; 'mobile00@frontiernet.net'; 'chartley@taylorhomes.net'; 'Weldonwatson@aol.com'; 'psurles@athensparkhomes.com'; 'DShaffer@patriohomes.com'; 'kenny@rochesterhomesinc.com'; 'jcummings@platinumhomes-llc.com'; 'rlyons@pennlyon.com'; 'jmcgee@modularone.net'; 'bob.phillips@chiefind.com'; 'Tissie114@aol.com'; 'wait2701@earthlink.net'; 'cboyer@hstr.com'; 'Gary.Pritchard@clayton.net'; 'BELLMHKS@DOOR.NET'; 'THOMASHAGAR@MMHA.NET'; 'DJH@SOLITAIREHOMES.COM'; 'Kfoskey@liveoakhomes07.com'; 'GSULLIVAN@liveoakhomes07.com'; 'pknight@championhomes.net'; 'dbatchelor@sehomes.com'; 'kbrown@sehomes.com'; 'dpajakowski@skylinecorp.com'; 'GGINDY500@aol.com'; 'Kathy.Munson@fleetwood.com'; 'charley.lott@fleetwood.com'; 'kip.thrush@fleetwood.com'; 'tomjr@horerandassociates.com'; 'mark@homesteadhousinginc.com'; 'bbv2008@earthlink.net'; 'foggies2@yahoo.com'; 'Andersonarizona@aol.com'; 'Hworks4u2@aol.com'; 'laddawson@guerdon.com'; 'tdecio@skylinecorp.com'; 'wgriffiths@championhomes.net'; 'leo@forahouse.com'; 'chris@magnoliahomes.biz'; 'JGledhill@championhomes.net'; 'dgraham@tombigbee.com'; 'len.mcgilli@fleetwood.com'; 'tom@modular.org'; 'rsvinas@pbsnc.com'; 'ned@fuquahomes-mo.com'; 'albert.g.endres@state.or.us'; 'Benito Martinez'; 'bjohnson@radcoinc.com'; 'chris.stephens@mail.oci.state.ga.us'; Chuck Smith (smith.chuck@hsmv.state.fl.us); 'darlene.warren@state.tn.us'; Dick Reinhard (dreinhard@pfscorporation.com); 'hajo235@lni.wa.gov'; 'James Bergan'; 'JRoethman@pfscorporation.com'; Mark Luttich (mark.luttich@nebraska.gov); Mike Ziemann (MikeZiemann@aol.com); 'mpalmer@trarnold.com'; 'nancy.gephart@dfbls.az.gov'; 'rmarchman@radcoinc.com'; 'nolan@hwceng.com'; 'rtanger@trarnold.com'; Steve Bernia (steve.bernia@state.co.us); 'steve.hibner@state.tn.us'; 'tompos@ntainc.com'; 'trodgers@dfs.idaho.gov'; 'Alfred Cocce'; 'Brian Ferris'; 'Cal Steiner'; 'Charles Cook'; Cindy Bocz (cbocz@tdhca.state.tx.us); 'Dan Chapman'; 'Dan Jones'; 'debra.blake@dfbls.az.gov'; 'Don LeBrun'; 'Dwight Davis'; 'Ed Landon'; 'Gary Childer'; Gene Humphrey (genehumphrey@mid.state.ms.us); 'Hazel Stephenson'; 'Irvin Poke'; Jimmy Sloan (Jimmy.Sloan@amhc.alabama.gov); 'Joe Garcia'; 'John Leyden'; 'John McMillan'; 'John Reilly'; 'Justin DeWitt'; 'Kevin Cimini'; 'Kevin deGroat'; Dyer, Lorenzo (DHCD); 'Lynne King'; Mark Conte (mconte@state.pa.us); 'Mark Long'; 'Mike Anderson'; 'Mike Montoya'; Mitch Woodrum (mitch.e.woodrum@wv.gov); 'Paul Govig'; 'Paul Merriman'; 'Peter Desch'; 'Peter Schmidt'; Randy Vogt (randy.vogt@state.mn.us); 'Rich Bolten'; Richard Weinert (rweinert@hcd.ca.gov); 'Richelle Wakefield'; 'Ricky Davis'; Robert Leclair (robert.v.leclair@maine.gov); 'Ron Pleus'; Sammy Hoover (sammy.hoover@dps.la.gov); 'Scott McLellan'; Tim King (tking@dos.state.ny.us); 'Tina Lechowicz'; 'Tom Rodgers'; Wallace, Clinton (DHCD); Warren Ducharme; Whit Waller (whit.waller@arkansas.gov); Brian Cooney (BRIAN@mfghome.org); Gail Cardwell (gcardwell@mfghome.org); Jeff Inks (JEFF@mfghome.org); Thayer Long (TLong@mfghome.org); Tom Beers (tbeers@mfghome.org); Kevin Jewell (mhcc@kgjewell.com); Tim Sheahan (tpsheahan@cox.net); Bill Farish (bill.farish@fleetwood.com); Bill Lagano (wjlagano@aol.com); Bill Stamer; Danny Ghorbani (MHARRDG@AOL.COM); Doug Gorman (doug@homemart.us); Frank Walter (fandrwalter@verizon.net); Jack Berger (jberger@comcast.net); Karl Braun (mhckarisr@cs.com); Martin Denesse (graceharbourchurch@yahoo.com); Michael Wade (mwade@cavhomesinc.com); Mike Lubliner (lubliner@energy.wsu.edu); Susan Brenton (suebrenton@aol.com); Terry Nelson (mhoai1@aol.com); Theresa DesFosses (theresa@statemanufacturedhomes.com)
Cc: Aguolu, Geraldine O; Brolin, John; Carpio, Daniel; Cocke, Elizabeth A; Garrison-Richardson, Veronica; McDuffie, Patricia A; Mckee, Shawn P; Mendlen, Rick A; Pethel, Hubert L; Wallace, Angelo M; Ashok Goswami (agoswami@ibts.org); Darioush Danaei; Dick St. Onge (RSt.Onge@ibts.org); Howard Weissman (HWeissman@ibts.org); Jason McJury (jmcjury@ibts.org); Paul Hancher (phancher@IBTS.org); Christman, Courtney E; Cornejo, Eleonora X; Goldstein, Steven M; Iveycolson, Kirsten A; Jones, Yvonne D; Kritikos, Efosine; Podzius, Kasey M; Postiglione, Amanda J; Race, Peter S; Shumway, John B; Varrieur, Brian M
Subject: FW: Fire Sprinkler Protection

Folks:

Here is an update on fire sprinkler laws. Whether or not you agree with the tone of the text, this trend is simply the current reality. Don't expect a preemption argument that HUD properly discarded twenty years ago to stop this tide, either at HUD or in the courts. The only reasonable approach now is for the industry to get behind a sprinkler rule that would at least preempt state and local governments from dictating the design, installation and testing of sprinkler systems when they are required. The more time we waste, the more adverse impact the industry will suffer.

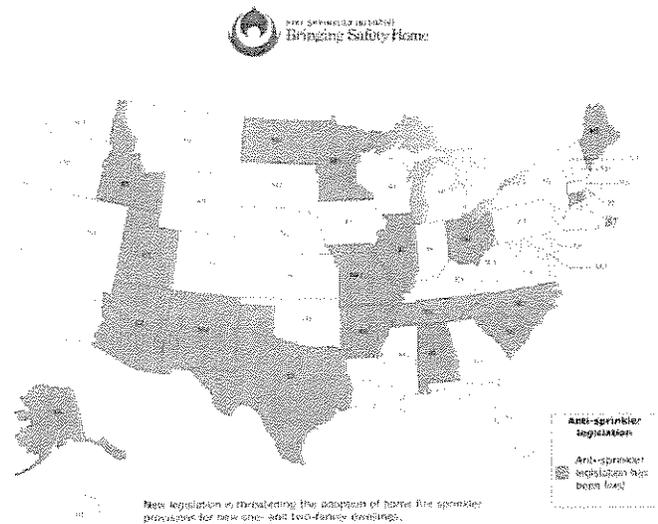
Legislative Alert

New legislation is threatening the adoption of home fire sprinkler provisions for new one- and two-family dwellings. Across the United States, sprinkler opponents are pushing state legislation that would restrict a community's ability to make its own decision about model safety codes for new construction. The legislation would prevent any community from implementing any new sprinkler mandates in one- and two-family homes. If it becomes law, such legislation will put lives at risk.

By getting involved, you can help make sure that this law does not pass. Below, you will find resources you can use to help educate others in your

community about the issue, and a letter you can use to let your elected officials know that you do not support any statewide effort to prevent home fire sprinklers. Please be sure to [register with our site](#) so we can keep you updated as new information and materials become available. Thank you for your continued commitment to public safety.

States where anti-sprinkler legislation has been filed



State	Bill and scope	Contact state lawmakers
AL	HB 633 : Changes the make-up of the promulgating board	House , Senate
AK	SB 129 : Prevents locals from adopting sprinkler provision Update: legislative session ended without action on this bill.	House , Senate
AZ	HB 2267 : Prevents locals from adopting sprinkler provision Note: Download " Vote NO on HB2267 " (PDF, 14 KB)	House , Senate
AR	HB 1839 : Prevents locals from adopting sprinkler provision	House , Senate
CT	HB 6204 : Prevents locals from amending the state code with more restrictive provisions -- no sprinkler reference currently	House , Senate
ID	HB 202 : Changes the make-up of the promulgating board HB 218 : Prevents locals from adopting sprinkler provision Update: Signed by governor HB 220 : Revises membership on state building code board and initially prohibited certain amendments to state building code Update: Signed by governor	House , Senate
IL	HB 592/SB 328 : Limits adoption to certain ICC codes (edition year removed) SB 1980 : Prevents locals from adopting sprinkler provision Update: Illinois legislation defeated in committee.	House , Senate
ME	LD 440 : Prevents locals from adopting sprinkler provision -- no sprinkler reference currently Update: Fire service leaders help to stop anti-fire safety legislation	House , Senate
MN	Regulatory Notice : No update to 2009 codes	House , Senate
MO	SB 7 Sect. 67.281 : Reduces mandatory requirement to an optional requirement Update: no further action on this bill	House , Senate
NM	HB 0599 : Prevents locals from amending the state code with more restrictive provisions -- no sprinkler reference currently	House , Senate
NC	S 911 : Changes the make-up and scope of the promulgating boards	House , Senate
ND	SB 2354 : Prevents locals from adopting sprinkler provision Update: Signed by governor	House , Senate
OH	HB2 : Changes the make-up of the promulgating board Update: Fire service leaders help to stop anti-fire safety legislation	House , Senate
SC	HB 3769/SB 618 : Changes the make-up and scope of the promulgating boards	House , Senate

TN	SB2300, HB2318 : Removes provision from state code, but allows for local option	House, Senate
TX	HB 00554/SB 820: changes the make-up of the promulgating board HB 01511 : sets threshold of 7500 sq. ft. before sprinkler provision can be adopted	House, Senate
UT	HB 0394 , SB 0211: Two separate bills – changes make-up and scope of promulgating boards (reduces fire service input) Update: SB 0211 signed by governor	House, Senate

Resources

- Use language in this [fill-in-the-blank letter](#) (doc, 29 KB) to encourage your state lawmakers to reject the anti-sprinkler legislation.
 - Download this [reproducible fact sheet](#) (PDF, 73 KB) that explains the anti-sprinkler legislation and what you can do to combat the effort.

04/20/2009

How cheap do sprinklers have to become before they're considered cost-effective?

The cost of residential fire sprinkler systems has been a major point raised by builders in the residential fire sprinkler battle. They often cite unknown studies pointing to how many people will not be able to afford a home if the residential (one and two-family) code requirement is adopted.

I recently sat next to an actuary during one of my many flights and engaged in conversation as I often do with my seat mates. Of course, the conversation turned to residential fire sprinklers when he asked what I do for a living. So began the opportunity to take advantage of a "teachable moment" as I explained the whole residential sprinkler issue to this person who, as many persons, had not even thought of this technology when making a home purchase decision.

The very first question he asked after he learned all about this life safety technology was, you guessed it; how much does it cost? I explained about the 1 to 1.5% of a home's cost and the research putting this cost at \$1.61 a sq. sprinklered foot. Immediately his mathematical mind went to work and within seconds he said; "That would only translate into approximately \$5.00 extra mortgage payment a month" After I got over my awe of his mathematical abilities without the use of a calculator I remembered reading somewhere someone say that the additional mortgage amount would equal the cost of a "Big Mac" a month.

During one of the recent hearings, someone provided testimony begging the question posed by the title of this blog. I bring it to you here in its entirety and urge you to make similar analogies, if given the chance, when addressing the cost of residential sprinkler systems. The testimony follows:

"To really look at the issue of the cost impact on homes and whether sprinklers will impact the cost of affordable housing, there is a basic question that has to be asked, "What drives the price of a new home?" In many, if not most, markets, the answer to this question is not construction costs, but instead, what the market will bear, with sales prices rising and falling based on what buyers are willing to pay. In such markets, costs associated with mandatory sprinklers are absorbed into the price by adjusting other costs or features or builder markup.

Even if there is an increase in the cost of a home based on sprinklers, the impact on a monthly mortgage payment is negligible in an average home.

Consider a hypothetical \$3,000 sprinkler system in a \$300,000 home with a 6.5% mortgage, a 5% credit on a \$2,000/year insurance bill, and a combined Federal/State income tax rate of 33%; the net cost of fire sprinklers, after mortgage related tax deductions, would be \$4.37 per month. This represents a 0.23% increase in the monthly payment and roughly equates to the cost of a premium beverage at your local coffee shop

So, I pose the question to everyone listening to this program today, just how cheap do sprinklers have to become before they're considered cost-effective?"

Maria Figueroa

Hodge, Vernon (DHCD)

From: Wallace, Clinton (DHCD)
Sent: Wednesday, May 20, 2009 6:49 AM
To: Rodgers, Emory (DHCD); Brock, Larry (DHCD); Dyer, Lorenzo (DHCD); Leatherby, Eric (DHCD); Potts, Richard (DHCD); Negley, Valrae (DHCD)
Cc: Eubank, Paula (DHCD); Hodge, Vernon (DHCD)
Subject: FW: Fire Sprinkler Protection

FYI, a way to test sprinklers in manufactured home if it passes in Virginia.

Clinton Wallace
 State Building Codes Administrator
 Division of Building and Fire Regulation
 Department of Housing and Community Development
 Commonwealth of Virginia
 804-371-7161 Office
 804-371-7092 Fax
Clinton.Wallace@dhcd.virginia.gov

From: Richard Weinert [mailto:RWeinert@hcd.ca.gov]
Sent: Tuesday, May 19, 2009 4:21 PM
To: 'King, Timothy (DOS)'; 'Matchneer, William W'; 'MHARRDG@aol.com'; 'MMARKWEISS@AOL.COM'; 'prdaniels@fuquamgmt.com'; 'charles44@ameritech.net'; 'jack.henry@chiefind.com'; 'lkeener@palmharbor.com'; 'rickmurdock@guerdon.com'; 'ronnie@hstr.com'; 'nashua@nashuahomesofidaho.com'; 'scott@heritagehomesandrealty.com'; 'buck@hstr.com'; 'pat@shamrock-homes.com'; 'readm@fourseasonshousing.com'; 'wbell@palmharbor.com'; 'kengeljack@hi-techhousing.com'; 'jweldy@verizon.net'; 'mobile00@frontiernet.net'; 'chartley@taylorhomes.net'; 'Weldonwatson@aol.com'; 'psurles@athensparkhomes.com'; 'DShaffer@patriothomes.com'; 'kenny@rochesterhomesinc.com'; 'jcumings@platinumhomes-llc.com'; 'rlyons@pennlyon.com'; 'jmcgee@modularone.net'; 'bob.phillips@chiefind.com'; 'Tissie114@aol.com'; 'walt2701@earthlink.net'; 'cboyer@hstr.com'; 'Gary.Pritchard@clayton.net'; 'BELLMHKS@DOOR.NET'; 'THOMASHAGAR@MMHA.NET'; 'DJH@SOLITAIREHOMES.COM'; 'Kfoskey@liveoakhomes07.com'; 'GSULLIVAN@liveoakhomes07.com'; 'pknight@championhomes.net'; 'dbatchelor@sehomes.com'; 'kbrown@sehomes.com'; 'dpajakowski@skylinecorp.com'; 'GGINDY500@aol.com'; 'Kathy.Munson@fleetwood.com'; 'charley.lott@fleetwood.com'; 'kip.thrush@fleetwood.com'; 'tomjr@homerandassociates.com'; 'mark@homesteadhousinginc.com'; 'bbv2008@earthlink.net'; 'foggies2@yahoo.com'; 'Andersonarizona@aol.com'; 'Hworks4u2@aol.com'; 'laddawson@guerdon.com'; 'tdecio@skylinecorp.com'; 'wgriffiths@championhomes.net'; 'leo@forahouse.com'; 'chris@magnoliahomes.biz'; 'JGiedhill@championhomes.net'; 'dgraham@tombigbee.com'; 'len.mcgill@fleetwood.com'; 'tom@modular.org'; 'rsvinas@pbsnc.com'; 'ned@fuquahomes-mo.com'; 'albert.g.endres@state.or.us'; 'Benito Martinez'; 'bjohnson@radcoinc.com'; 'chris.stephens@mail.oci.state.ga.us'; 'smith.chuck@hsmv.state.fl.us'; 'darlene.warren@state.tn.us'; 'dreinhard@pfscorporation.com'; 'hajo235@lni.wa.gov'; 'James Bergan'; 'JRothman@pfscorporation.com'; 'mark.luttich@nebraska.gov'; 'MikeZieman@aol.com'; 'mpalmer@trarnold.com'; 'nancy.gephart@dfbls.az.gov'; 'rmarchman@radcoinc.com'; 'molan@hwceng.com'; 'rtanger@trarnold.com'; 'steve.bernia@state.co.us'; 'steve.hibner@state.tn.us'; 'tompos@ntainc.com'; 'trodgers@dbs.idaho.gov'; 'Alfred Cocce'; 'Brian Ferris'; 'Cal Steiner'; 'Charles Cook'; 'cbocz@tdhca.state.tx.us'; 'Dan Chapman'; 'Dan Jones'; 'debra.blake@dfbls.az.gov'; 'Don LeBrun'; 'Dwight Davis'; 'Ed Landon'; 'Gary Childer'; 'genehumphrey@mid.state.ms.us'; 'Hazel Stephenson'; 'Irvin Poke'; 'Jimmy.Sloan@amhc.alabama.gov'; 'Joe Garcia'; 'John Leyden'; 'John McMillan'; 'John Reilly'; 'Justin DeWitt'; 'Kevin Cimini'; 'Kevin deGroat'; 'Dyer, Lorenzo (DHCD)'; 'Lynne King'; 'mconte@state.pa.us'; 'Mark Long'; 'Mike Anderson'; 'Mike Montoya'; 'mitch.e.woodrum@wv.gov'; 'Paul Govig'; 'Paul Merriman'; 'Peter Desch'; 'Peter Schmidt'; 'randy.vogt@state.mn.us'; 'Rich Bolten'; 'Richelle Wakefield'; 'Ricky Davis'; 'robert.v.leclair@maine.gov'; 'Ron Pleus'; 'sammy.hoover@dps.la.gov'; 'Scott McLellan'; 'Lechowicz, Tina (DOS)'; 'Tom Rodgers'; 'Wallace, Clinton (DHCD)'; 'Warren Ducharme'; 'whit.waller@arkansas.gov'; 'BRIAN@mfghome.org'; 'gcardwell@mfghome.org'; 'JEFF@mfghome.org'; 'TLong@mfghome.org'; 'tbeers@mfghome.org'; 'mhcc@kgjewell.com'; 'tpsheahan@cox.net'; 'bil.farish@fleetwood.com'; 'wjlagano@aol.com'; 'Bill Stamer'; 'MHARRDG@AOL.COM'; 'doug@homemart.us'; 'fandrwalter@verizon.net'; 'jdbberger@comcast.net'; 'mhcckarlsr@cs.com'; 'graceharbourchurch@yahoo.com'; 'mwade@cavhomesinc.com'; 'lublinerm@energy.wsu.edu'; 'suebrenton@aol.com'; 'mhoai1@aol.com'; 'theresa@statemanufacturedhomes.com'; 'bkessler@palmharbor.com'; 'Greg Scott'; 'Mark Ezzo'; 'Gugliotta, Ted'; 'clifton@classllc.us.com'
Cc: 'Aguolu, Geraldine O'; 'Brolin, John'; 'Carpio, Daniel'; 'Cocke, Elizabeth A'; 'Garrison-Richardson, Veronica'; 'McDuffie, Patricia A'; 'McKee, Shawn P'; 'Mendlen, Rick A'; 'Pethel, Hubert L'; 'Wallace, Angelo M'; 'agoswami@ibts.org'; 'Darioush Danaei'; 'RSt.Onge@ibts.org'; 'HWeissman@ibts.org'; 'jmcjury@ibts.org'; 'phancher@IBTS.org'
Subject: RE: Fire Sprinkler Protection

The site installation/testing can be easily remedied---see below excerpt from CA firesprinkler regulations. I can provide the entire section for anyone if desired.

§ 4320. Requirements for Testing the System

(a) A fire sprinkler system installed during the manufacture of the manufactured home or multi-unit manufactured housing with two dwelling units must be hydrostatically tested both at the manufacturing facility and at the home's installation site.

(1) The hydrostatic test performed at the manufacturing facility:

A. must be conducted on the completely assembled system within any one transportable section; and

B. must subject the system to 100 pounds per square inch (psi) hydrostatic pressure for not less than 2 hours without any loss of pressure or leakage of water. Testing shall be performed in accordance with the applicable product standards.

(2) The person responsible for installing the manufactured home or multi-unit manufactured housing with two dwelling units must hydrostatically test the system again at the home's installation site with the water supply available at the site for at least one hour without any evidence of leakage.

A. The testing must be performed at a minimum of 50 psi; not to exceed 100 psi.

B. A representative of the enforcement agency must witness the test at the installation site during the same visit to the installation site to inspect the installation of the home or dwelling unit.

(b) A fire sprinkler system installed after the manufactured home or multi-unit manufactured housing with two dwelling units is shipped from the manufacturing facility must be hydrostatically tested at the home's installation site.

(1) The person who installed the fire sprinkler system is responsible for performing the test.

(2) A representative of the enforcement agency must witness the test.

(3) The installer must conduct the test on the completely assembled system.

(4) The installer must conduct the test with the water supply available at the home's site for a period of two hours without any evidence of leakage. The testing must be performed at a minimum of 50 psi; not to exceed 100 psi.

From: King, Timothy (DOS) [mailto:Timothy.King@dos.state.ny.us]

Sent: Tuesday, May 19, 2009 9:39 AM

There is one big item that I am surprised nobody has brought up yet. The International Residential Code adopted the requirements for sprinklers, but the requirement was placed in Chapter 29 which is a plumbing section of the Code. In that Chapter the requirements for sprinklers allow for either a NFPA 13D system or the prescriptive requirements found in that Chapter. When you look at those requirements I would think that if HUD did in fact provide the same requirements the design could easily be incorporated in the DAPIA approval process, the inspection of the installation could be easily incorporated by the IPIA inspections and the hook up could be easily incorporated in the AC approval or the on-site completion rule.

If you take the time to look at the requirements you will find that the design flows of the prescriptive requirements look very similar to the fixture unit design of the plumbing sections. That could most likely be designed by the engineer designing the home. There are no requirements for a 300 gallon storage tank that everyone thinks is required. There are no requirements for central monitoring of the system. The prescriptive requirements allow for PEX piping to be used. There are sprinkler heads already available on the market for PEX piping connections and they would be protected from the kids throwing balls at them. The connection to the water supply allows for a minimum 3/4 inch supply. And they do not require closets less than 24 square feet from being protected.

I do not believe that any staff from HUD has suggested that the Manufactured Housing Safety and Construction Standards require the placement of sprinklers in Manufactured Housing, but have only suggested that if a State or Local Government does require sprinklers that the Standard would be already approved and that those standards would then be used for the placement of the sprinklers in the homes.

Sorry I have to get on my soapbox now, but if the things would have been better in the market the last few years and the fees could have supported the funding of a yearly COSAA meetings, with invitations to the Industry to participate in some joint sessions, we could have been discussing this all along. While I am not taking any position on the sprinkler issue, I do know that New York will be presenting the issue regarding sprinklers in manufactured housing to our Code Council for consideration of adoption in the Residential Code of New York State. Before we go in any direction with the need for sprinklers maybe we should decide what type of system (or plumbing requirement) would be acceptable if required by a State or Local Government. It would appear that the prescriptive section of the International Code would allow for a much more cost effective way other than a full blown NFPA 13D System. I'm also not sure if we can wait until the funding is available for another COSAA meeting to start a good dialogue on this issue..

Timothy G. King, C.P.C.A.
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Recommended Amendments to the 2009 International Residential Code (IRC)

Issue: Automatic Fire Sprinkler System

2009 IRC Section R313

Recommended Amendment

Delete the Section in its entirety as shown below:

~~**R313 AUTOMATIC FIRE SPRINKLER SYSTEMS**~~

~~**R313.1 Townhouse automatic fire sprinkler systems.** An automatic residential fire sprinkler system shall be installed in townhouses.~~

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

~~**R313.1.1 Design and installation.** Automatic residential fire sprinkler systems for townhouses shall be designed and installed in accordance with Section P2904.~~

~~**R313.2 One and two family dwellings automatic fire sprinkler systems.** Effective January 1, 2011, an automatic residential fire sprinkler system shall be installed in one and two family dwellings.~~

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

~~**R313.2.1 Design and Installation.** Automatic residential fire sprinkler systems shall be installed in accordance with Section P2904 or NFPA 13D.~~

National Association of Home Builders Recommended State & Local Amendments to the 2009 International Residential Code (IRC)

Issue: Automatic Fire Sprinkler System

2009 IRC Section R313

Recommended Amendment

Delete the Section in its entirety as shown below:

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~~**R313.1 Townhouse automatic fire sprinkler systems.** An automatic residential fire sprinkler system shall be installed in townhouses.~~

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~~**R313.2.1 Design and Installation.** Automatic residential fire sprinkler systems shall be installed in accordance with Section P2904 or NFPA 13D.~~

Reason:

The purpose of this amendment is to delete the reference of the mandatory requirement of residential sprinkler systems in all one- and two- family dwellings and townhouses. This change will provide the homeowner with the continued ability to choose whether or not a residential fire sprinkler system is appropriate for their situation.

NAHB strongly disagrees with the fire services perception of America's fire problem and the proposed solution to reduce the number of fire fatalities that occur each year. In 1977, less than 0.008% of the housing market was affected by structure fires. In 2005, that number was reduced to less than 0.002%. Over the past three decades, there has a substantial decrease in the number of residential structure fires in relation to the growth

of American housing. No one can predict when or where a fire will occur, but to require every home to be equipped with a residential sprinkler system based on the figures below is not cost-effective.

Consideration as to whether the requirement for fire sprinklers in dwellings be mandatory should remain a local issue. The sole purpose of an Appendix P in the 2006 International Code was to provide local jurisdictions with the means to adopt a code or standard that is applicable to their community. Not every jurisdiction agrees that radon resistant construction, patio coverings, and safety inspections of existing appliances need to be regulated or inspected in their jurisdiction. Contrary to the belief of some activists, several jurisdictions have decided that Appendix P (the provisions for residential sprinkler systems) is not applicable to their state or local jurisdictions. Of the 47 states that have adopted the International Residential Code, none have adopted the 2006 IRC with the inclusion of Appendix P. During the adoption process in six states, there was a proposal put forth to include appendix P in the formal adoption of the 2006 IRC and the proposal was voted down every time.

According to the U.S. fire administration more than half states in America are below the national fire death rate of 13.6 per million and over the past ten years the number of one- and two- family dwelling fires, deaths and injuries have fallen (6%, 18% and 26% respectively).

While the fire service and sprinkler advocates acknowledge that the median age of a home is 32 years, the connection between fire deaths and the age of the home is elusive. For several years data has been collected for several relevant facts about fires. The cause of the fire, whether smoke alarms were present and were working, type of smoke alarm present, whether the fire was confined and did not activate the sprinkler system.

While there have been no studies conducted to investigate whether fire fatalities are less likely to occur in newer homes, there is supporting evidence of this in reports issued by NFPA regarding the performance of smoke alarms. According to these reports, there is a significant difference in the number of fatalities and the number of fires when the smoke alarm present. This includes information regarding smoke alarms that were either battery operated, hardwired with battery backup or hardwired. According to April 2007 Report "U.S. Experience with Smoke Alarms and other Fire Detection/Alarm Equipment" by Marty Ahrens, 65% of the reported residential home fire deaths occurred in homes where there was no smoke alarm present (43%) or did not operate (22%). Of the 35% fire fatalities that occurred when a smoke alarm was present and operated, it was reported that two-thirds of the non-confined home structure fires occurred in dwellings with battery operated smoke alarms with the remaining third evenly divided between homes with hardwired and hardwired with battery backup.

Source	Code Cycle Required	# of Fires	# of Fatalities	# of Injuries	Property Damage in Millions
Battery only	Before 1982	88,300	1,230	5,850	\$2,353
Hardwired Only	1982-1992	19,900	170	1,300	\$743
Hardwire/Battery	1992- Present	18,000	210	1,490	\$568

Reference: April 2007 Report "U.S. Experience with Smoke Alarms and other Fire Detection/Alarm Equipment" by Marty Ahrens

From this information we can see that as the requirements for smoke alarms changed, as well as other requirements over the years, that the newer stock has had fewer fires and fewer fire fatalities. Along with improvements to the power source, the *National Fire Code* has also increased the number of required smoke alarms in a one- and two- family dwelling over the years. In 1992 it required that all smoke alarms be interconnected.

When you consider the advances made in the requirements of smoke alarms and look at the results in reducing the number of fire fatalities, the solution is educating the public about the importance of working smoke alarms and practicing proper fire prevention.

The most cost-effective means of reducing the loss life is through increasing the public's awareness on the use and maintenance of smoke alarms. According to NFPA reports an estimated 890 lives could be saved annually if homes were equipped with working smoke alarms. 65% of the reported fire fatalities from 2000-2004 occurred in homes where smoke alarms were either not present or were present but failed to operate. CPSC surveys have shown that while 88% of the households screened had at least one smoke alarm, 72% of these smoke alarms were battery powered only.

Staff Contact: Steve Orlowski - sorlowski@nahb.com 1-800-368-5242, ext. 8303

3

National Association of Home Builders Recommended State & Local Amendments to the 2009 International Residential Code (IRC)

Issue: Automatic Fire Sprinkler System

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Reason:

NAHB strongly disagrees with the fire services perception of America's fire problem and the proposed solution to reduce the number of fire fatalities that occur each year. In 1977, less than 0.008% of the housing market was affected by structure fires. In 2005, that number was reduced to less than 0.002%. Over the past three decades, there has a substantial decrease in the number of residential structure fires in relation to the growth of American housing. No one can predict when or where a fire will occur, but to require all homes to be equipped with a residential sprinkler system based on the figures above doesn't make sense.

1. Should the requirement for fire sprinklers in dwellings be a local issue? The sole

purpose of an appendix is to allow local jurisdictions the means to adopt a code or standard that is applicable to their community. Not every jurisdiction agrees that radon resistant construction, patio coverings, and safety inspections of existing appliances need to be regulated or inspected. Contrary to the belief of some activists, several jurisdictions have decided that Appendix P (the provision for residential sprinkler requirement) is not applicable to their state or local jurisdictions. Of the 47 states that adopt the International Residential Code, there have been no states that have adopted the 2006 International Residential Code along with Appendix P. In six states, there was a motion made to include appendix P in the formal adoption of the 2006 IRC and the motion was voted down at the state level. According to the U.S. fire administration more than half states in America are below the national fire death rate of 13.6 per million and over the past ten years the number of one- and two- family dwelling fires, deaths and injuries have fallen (6%, 18% and 26% respectively).

2. While the fire service and sprinkler advocates acknowledge that the median age of a home is 32 years, the connection between fire deaths and the age of the home is still elusive to them. For several years data has been collected for several relevant facts about fires, the cause of the fire, whether smoke alarms were present and were working, type of smoke alarm present, whether the fire was confined or not. With all the information that is gathered and can be determined after the event, one of the most crucial pieces of information that is not gathered is the age of the home. This information could open a whole new realm of understanding about how the home is built and whether or not the codes changes over the course of time have been beneficial.

While there have been no studies conducted to support or dispute the claim that newer homes are less susceptible to fire, there is supporting evidence in the most recent report issued by NFPA on the performance of smoke alarms. According to the report of the there is a significant difference in the number of fatalities and the number of fires when the smoke alarm present were either battery operated, hardwired with battery backup and hardwired. According to April 2007 Report "U.S. Experience with Smoke Alarms and other Fire Detection/Alarm Equipment" by Marty Ahrens, 65% of the reported residential home fire deaths occurred in homes where there was no smoke alarm present (43%) or did not operate (22%). Of the 35% fire fatalities that occurred when a smoke alarm was present and operated, it was reported that two-thirds of the non-confined home structure fires occurred in dwellings with battery operated smoke alarms with the remaining third evenly divided between homes with hardwired and hardwired with battery backup.

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Reference: April 2007 Report "U.S. Experience with Smoke Alarms and other Fire Detection/Alarm Equipment" by Marty Ahrens

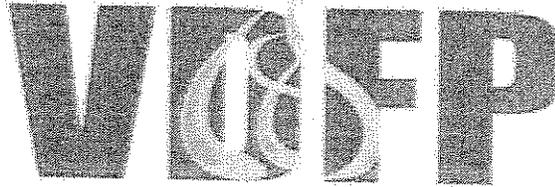
From this information we can see that as the requirements for smoke alarms changed, as well as other requirements over the years, that the newer stock has had fewer fires and fewer fire fatalities. Along with improvements to the power source, the *National Fire Code* has also increased the number of required smoke alarms in a one- and two- family dwelling over the years and in 1992 it required that all smoke alarms were interconnected. When you consider the advances made in the requirements of smoke alarms and look at the results in reducing the number of fire fatalities, the solution is educating the public about the importance of working smoke alarms and practicing proper fire prevention.

There is a more cost effective means of reducing the loss life that we see every year and that is through increasing public awareness on the use and importance of smoke alarms. According to NFPA reports an estimated 890 lives could be saved annually if homes were equipped with working smoke alarms. 65% of the reported fire fatalities from 2000-2004 occurred in homes where smoke alarms were either not present or were present but failed to operate. CPSC surveys have shown that while 88% of the households screened had at least one smoke alarm, 72% of these smoke alarms were battery powered only.

It is NAHB's opinion that the figures presented in the proponents substantiation is incorrect when it come to the dollars spent per life saved. According to the Canada Mortgage and Housing Corporation, the cost per life saved would be about \$38 million dollars if there were a mandate and NIST has estimated that the cost per life saved would be \$35 million. There are trends that are observed and acknowledged by both sprinkler proponents and opponents. That a majority of fire fatalities occur in homes that do not have smoke alarms, or a smoke alarm that is did not operate.

Staff Contact: Steve Orlowski - sorlowski@nahb.com 1-800-368-5242, ext. 8303

Virginia Residential Building Fires
 In 1-or-2 Family Dwellings
REPORTED FIRES PER YEAR

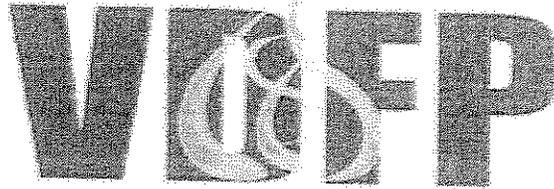


Year	#	%	RT Avg	%≤6	Loss Tot	Loss/Inc	Civ Inj	Civ Death	FS Inj	FS Death	Total Inj/Death	Inj/Death Per 1k Inc.
2000	3,777	8.8%	7:55	56.3%	\$48,155,163	\$12,750	194	26	107	0	327	87
2001	3,741	8.7%	7:52	56.9%	\$47,998,062	\$12,830	190	18	81	0	289	77
2002	4,718	11.0%	7:49	51.5%	\$76,796,666	\$16,277	249	24	112	0	385	82
2003	5,081	11.8%	7:48	49.3%	\$204,634,885	\$40,275	243	37	111	0	391	77
2004	5,070	11.8%	8:33	42.4%	\$87,499,919	\$17,258	234	71	96	1	402	79
2005	5,169	12.0%	8:02	42.5%	\$107,836,293	\$20,862	201	31	83	0	315	61
2006	5,362	12.4%	7:55	43.3%	\$190,120,899	\$35,457	202	40	80	0	322	60
2007	5,888	13.7%	8:00	42.2%	\$139,928,586	\$23,765	245	58	91	1	395	67
2008	4,266	9.9%	7:31	44.4%	\$92,299,311	\$21,636	159	36	81	0	276	65
Total	43,072	100.0%	7:57	47.0%	\$995,269,784	\$23,107	1,917	341	842	2	3,102	72

9 years - 38

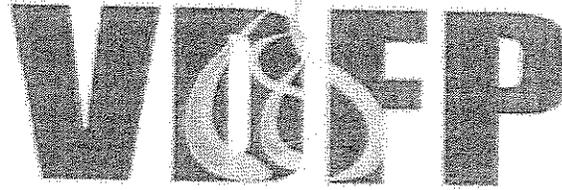
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Virginia Residential Building Fires
Number of 1-or-2 Family Dwelling Fires
with Fire Confined to a Non-Combustible Container
 (Jan 2000 - Sep 2008 Combined)

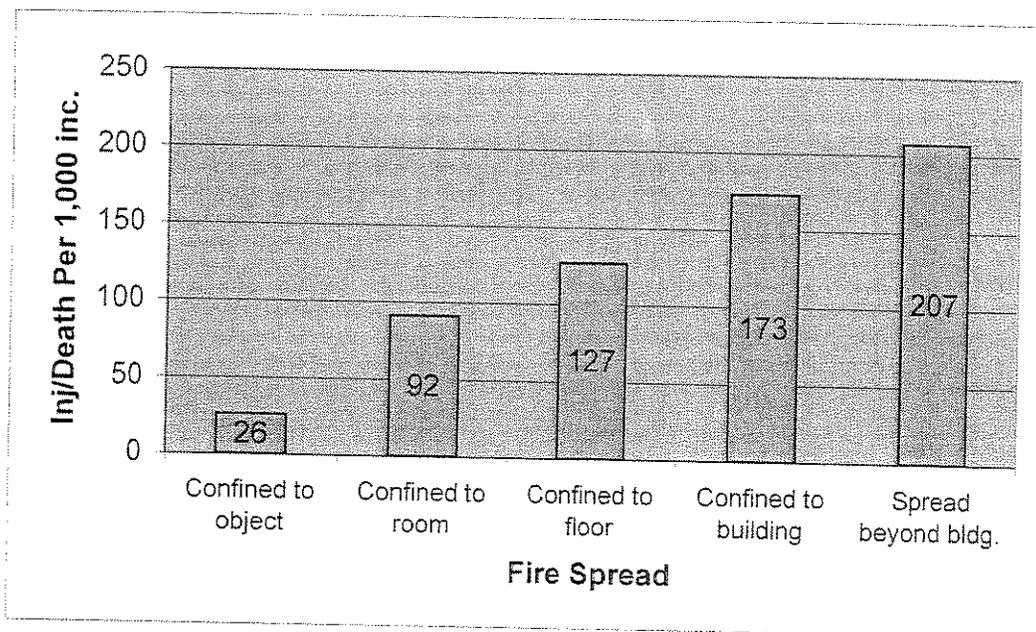


Confined/Non-Confined	#	%	RT Avg	%<=6	Loss Tot	Loss/Inc	Civ Inj	Civ Fatal	FS Inj	FS Fatal	Total Inj/Death	Inj/Death Per 1k Inc.
Building Fire - Not confined	30,189	70.1%	8:00	49.3%	\$988,709,796	\$32,751	1,749	340	824	2	2,915	97
Building Fire, Confined	12,883	29.9%	7:51	41.4%	\$6,559,988	\$509	168	1	18	0	187	15
Total	43,072	100.0%	7:57	47.0%	\$995,269,784	\$23,107	1,917	341	842	2	3,102	72

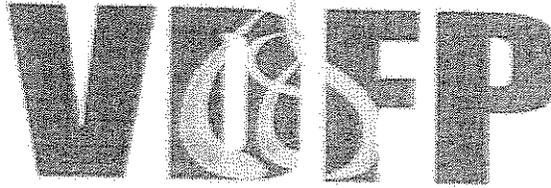
Virginia Residential Building Fires
 In 1-or-2 Family Dwellings
Extent of Fire Spread
 (Jan 2000 to Sep 2008 Combined)



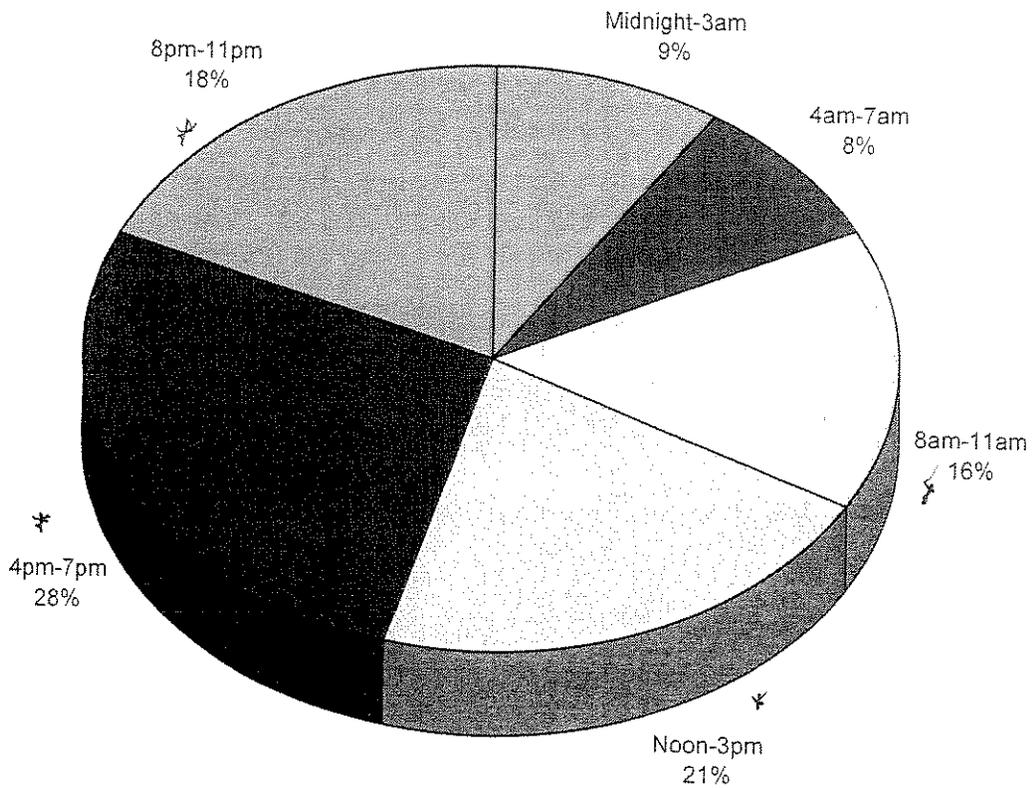
Fire Spread Group	#	%	RT Avg	%≤6	Loss Tot	Loss/Inc	Civ Inj	Civ Fatal	FS Inj	FS Fatal	Inj/Death	Inj/Death Per 1k Inc.
Blank	10,729	24.9%	7:48	44.1%	\$22,462,619	\$2,094	128	9	29	1	167	16
Confined to object	12,010	27.9%	7:38	44.6%	\$45,756,030	\$3,810	264	12	37	0	313	26
Confined to room	10,338	24.0%	6:48	55.0%	\$174,062,725	\$16,837	787	49	111	0	947	92
Confined to floor	2,230	5.2%	8:30	54.1%	\$73,650,025	\$33,027	172	30	82	0	284	127
Confined to building	6,442	15.0%	9:34	42.0%	\$558,842,329	\$86,750	475	187	454	1	1,117	173
Spread beyond bldg.	1,323	3.1%	11:41	41.5%	\$120,496,056	\$91,078	91	54	129	0	274	207
Total	43,072	100.0%	7:56	47.0%	\$995,269,784	\$23,107	1,917	341	842	2	3,102	72



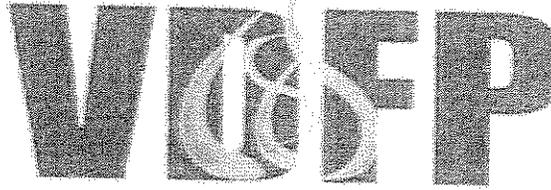
Virginia Residential Building Fires
in 1-or-2 Family Dwellings
(Jan 2000- Sep 2008 Combined)



1-or-2 Family Dwelling Fires by Time of Day

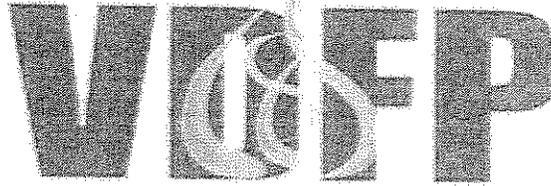


Virginia Residential Building Fires
In 1-or-2 Family Dwellings
Reported Fires by Locality
(Jan 2000-Sep 2008 Combined)



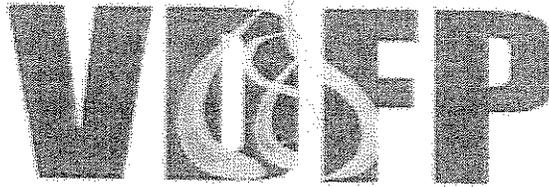
County/City	#	%	RT Avg	%≤6	Loss Tot	Loss/Inc	Civ Inj	Civ Fatal	FS Inj	FS Fatal	Total Inj/Death	Inj/Death Per 1k Inc.
Accomack County	337	0.8%	9:02	21.7%	\$5,944,760	\$17,640	4	2	0	0	6	18
Albemarle County	349	0.8%	9:41	20.1%	\$10,998,471	\$31,514	3	5	2	0	10	29
Alexandria	228	0.5%	4:13	89.9%	\$1,506,925	\$6,609	14	0	1	0	15	66
Alleghany County	152	0.4%	7:14	46.1%	\$2,228,740	\$14,663	1	0	2	0	3	20
Amelia County	44	0.1%	13:44	6.8%	\$1,761,600	\$40,036	0	0	0	0	0	0
Amherst County	265	0.6%	13:00	7.6%	\$1,997,860	\$7,539	9	0	3	0	12	45
Appomattox County	68	0.2%	11:46	8.8%	\$1,581,425	\$23,256	0	0	2	0	2	29
Arlington County	294	0.7%	5:54	66.4%	\$11,648,317	\$39,620	4	1	9	0	14	48
Augusta County	766	1.8%	10:27	17.3%	\$8,807,506	\$11,498	8	5	10	0	23	30
Bedford	183	0.4%	10:47	15.3%	\$2,365,100	\$12,924	0	0	0	0	0	0
Bedford County	313	0.7%	12:08	17.3%	\$4,111,701	\$13,136	1	3	0	0	4	13
Bland County	57	0.1%	18:17	10.5%	\$565,700	\$9,925	0	0	1	0	1	18
Botetourt County	147	0.3%	13:23	13.6%	\$611,350	\$4,159	0	2	1	0	3	20
Bristol	237	0.6%	4:09	81.4%	\$2,351,645	\$9,923	17	1	26	0	44	186
Brunswick County	147	0.3%	12:15	10.9%	\$2,071,350	\$14,091	0	0	0	0	0	0
Buchanan County	78	0.2%	17:50	9.0%	\$2,724,545	\$34,930	3	2	0	0	5	64
Buckingham County	90	0.2%	13:44	12.2%	\$423,500	\$4,706	0	1	0	0	1	11
Buena Vista	77	0.2%	6:19	44.2%	\$962,850	\$12,505	1	1	1	0	3	39
Campbell County	416	1.0%	11:11	17.8%	\$2,298,270	\$5,525	0	3	0	0	3	7
Caroline County	98	0.2%	12:46	6.1%	\$1,693,350	\$17,279	0	0	2	0	2	20
Carroll County	165	0.4%	12:20	5.5%	\$2,581,650	\$15,646	1	0	2	1	4	24
Charles City County	48	0.1%	15:04	4.2%	\$1,298,810	\$27,059	0	1	0	0	1	21
Charlotte County	68	0.2%	12:29	7.4%	\$2,061,235	\$30,312	0	1	1	0	2	29
Charlottesville	370	0.9%	4:55	75.1%	\$4,534,017	\$12,254	29	2	9	0	40	108
Chesapeake	1,482	3.4%	6:15	49.3%	\$27,607,978	\$18,629	112	6	25	0	143	96
Chesterfield County	1,571	3.6%	7:55	18.5%	\$28,002,405	\$17,825	110	12	25	0	147	94
Clarke County	139	0.3%	11:09	13.7%	\$1,919,780	\$13,811	3	0	2	0	5	36
Colonial Heights	155	0.4%	10:10	50.3%	\$1,358,685	\$8,766	9	2	5	0	17	110
Covington	101	0.2%	6:06	40.6%	\$1,088,854	\$10,781	7	1	7	0	15	149
Craig County	34	0.1%	7:51	41.2%	\$236,850	\$6,966	0	0	0	0	0	0
Culpeper County	193	0.4%	12:39	8.3%	\$6,368,852	\$32,999	2	1	1	0	4	21
Cumberland County	21	0.0%	10:14	38.1%	\$506,250	\$24,107	0	0	0	0	0	0
Danville	723	1.7%	4:48	79.9%	\$6,323,114	\$8,746	45	2	10	0	57	79
Dickenson County	117	0.3%	19:20	4.3%	\$2,892,720	\$24,724	2	1	10	0	13	111
Dinwiddie County	115	0.3%	12:53	17.4%	\$1,701,490	\$14,796	1	1	1	0	3	26
Emporia	48	0.1%	6:56	39.6%	\$830,500	\$17,302	0	0	0	0	0	0

Virginia Residential Building Fires
 In 1-or-2 Family Dwellings
Reported Fires by Locality
 (Jan 2000-Sep 2008 Combined)



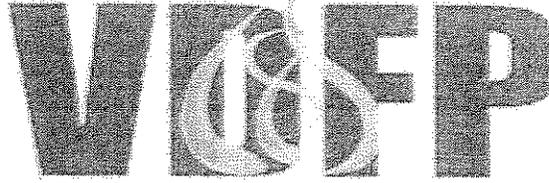
County/City	#	%	RT Avg	%≤6	Loss Tot	Loss/Inc	Civ Inj	Civ Fatal	FS Inj	FS Fatal	Total Inj/Death	Inj/Death Per 1k Inc.
Essex County	45	0.1%	11:36	15.6%	\$1,750,500	\$38,900	2	(7)	1	0	10	222
Fairfax	106	0.2%	8:39	81.1%	\$3,326,110	\$31,378	4	0	0	0	4	38
Fairfax County	3,623	8.4%	10:43	69.1%	\$134,750,299	\$37,193	132	(24)	62	0	218	60
Fauquier County	450	1.0%	11:12	18.3%	\$10,365,125	\$23,034	5	1	5	0	11	24
Floyd County	126	0.3%	15:27	6.3%	\$30,500	\$242	0	2	0	0	2	16
Fluvanna County	20	0.0%	8:21	40.0%	\$0	\$0	0	0	0	0	0	0
Franklin	151	0.4%	5:46	55.0%	\$1,495,310	\$9,903	2	2	1	0	5	33
Franklin County	443	1.0%	10:54	28.0%	\$7,996,310	\$18,050	10	(5)	6	0	21	47
Frederick County	651	1.5%	9:47	26.7%	\$3,367,186	\$5,172	8	1	11	0	20	31
Fredericksburg	116	0.3%	4:25	81.0%	\$1,666,799	\$14,369	4	1	2	0	7	60
Galax	180	0.4%	10:46	8.9%	\$1,013,550	\$5,631	0	0	1	0	1	6
Giles County	79	0.2%	8:43	27.8%	\$1,981,427	\$25,081	2	2	0	0	4	51
Gloucester County	312	0.7%	7:49	31.8%	\$14,033,707	\$44,980	15	2	7	0	24	77
Goochland County	163	0.4%	17:06	7.4%	\$1,089,656	\$6,685	5	2	0	0	7	43
Grayson County	137	0.3%	15:41	7.4%	\$24,040,050	\$175,475	0	0	0	0	0	0
Greene County	71	0.2%	11:35	19.7%	\$7,950	\$112	1	0	0	0	1	14
Halifax County	290	0.7%	8:11	43.1%	\$5,121,128	\$17,659	1	1	0	0	2	7
Hampton	891	2.1%	4:17	80.0%	\$10,095,269	\$11,330	47	2	13	0	62	70
Hanover County	464	1.1%	10:11	16.6%	\$7,072,697	\$15,243	7	0	13	0	20	43
Harrisonburg	27	0.1%	4:58	66.7%	\$93,205	\$3,452	0	0	0	0	0	0
Henrico County	1,900	4.4%	5:52	47.8%	\$34,214,671	\$18,008	124	(6)	43	0	175	92
Henry County	424	1.0%	10:54	20.3%	\$10,709,150	\$25,257	7	(3)	5	0	21	50
Hopewell	363	0.8%	4:33	76.6%	\$2,477,960	\$6,826	26	2	4	0	32	88
Isle of Wight County	181	0.4%	7:26	37.4%	\$3,062,237	\$16,918	4	2	6	0	12	66
James City County	424	1.0%	6:08	50.5%	\$10,807,821	\$25,490	18	3	12	0	33	78
King and Queen County	30	0.1%	8:56	14.8%	\$370	\$12	0	0	0	0	0	0
King George County	150	0.3%	11:14	18.0%	\$3,055,380	\$20,369	5	2	4	0	11	73
King William County	25	0.1%	12:10	4.0%	\$474,000	\$18,960	1	0	0	0	1	40
Lancaster County	21	0.0%	7:09	33.3%	\$571,000	\$27,190	0	0	0	0	0	0
Lee County	226	0.5%	12:18	7.1%	\$8,383,300	\$37,094	3	(7)	0	0	10	44
Lexington	45	0.1%	7:43	33.3%	\$1,816,774	\$40,373	0	0	0	0	0	0
Loudoun County	610	1.4%	7:39	37.1%	\$20,432,953	\$33,497	32	0	25	0	57	93
Louisa County	203	0.5%	11:56	11.4%	\$6,041,550	\$29,761	1	1	0	0	2	10
Lunenburg County	64	0.1%	8:35	48.4%	\$1,526,475	\$23,851	1	2	0	0	3	47
Lynchburg	725	1.7%	3:55	88.4%	\$5,413,160	\$7,466	30	(4)	22	0	56	77
Madison County	116	0.3%	6:55	51.7%	\$0	\$0	0	0	0	0	0	0

Virginia Residential Building Fires
 In 1-or-2 Family Dwellings
Reported Fires by Locality
 (Jan 2000-Sep 2008 Combined)



County/City	#	%	RT Avg	%≤6	Loss Tot	Loss/Inc	Civ Inj	Civ Fatal	FS Inj	FS Fatal	Total Inj/Death	Inj/Death Per 1k Inc.
Manassas	169	0.4%	5:02	67.5%	\$3,661,455	\$21,665	17	0	3	0	20	118
Manassas Park	50	0.1%	3:20	80.0%	\$2,092,930	\$41,859	1	0	0	0	1	20
Martinsville	210	0.5%	4:13	79.0%	\$2,703,889	\$12,876	19	3	3	0	25	119
Mathews County	59	0.1%	8:17	11.9%	\$2,655,350	\$45,006	0	0	1	0	1	17
Mecklenburg County	474	1.1%	7:37	43.7%	\$4,082,145	\$8,612	2	7	4	0	13	27
Middlesex County	13	0.0%	17:05	0.0%	\$75,375,500	\$5,798,115	0	0	0	0	0	0
Montgomery County	351	0.8%	6:57	49.0%	\$3,924,355	\$11,180	2	3	1	0	6	17
Nelson County	89	0.2%	15:55	13.5%	\$1,809,700	\$20,334	0	3	0	0	3	34
New Kent County	51	0.1%	10:00	23.5%	\$5,700	\$112	0	0	0	0	0	0
Newport News	1,116	2.6%	4:44	68.8%	\$13,258,870	\$11,881	108	11	20	0	139	125
Norfolk	1,260	2.9%	3:53	91.3%	\$12,833,051	\$10,185	74	6	68	0	148	117
Northampton County	64	0.1%	10:34	20.3%	\$1,028,900	\$16,077	4	2	0	0	6	94
Northumberland County	48	0.1%	11:06	10.4%	\$1,850,450	\$38,551	1	1	0	0	2	42
Norton	21	0.0%	6:34	42.9%	\$47,500	\$2,262	0	0	0	0	0	0
Nottoway County	78	0.2%	7:37	33.3%	\$549,020	\$7,039	0	0	1	0	1	13
Orange County	136	0.3%	12:41	11.8%	\$2,124,220	\$15,619	2	0	1	0	3	22
Page County	190	0.4%	8:37	36.8%	\$2,430,200	\$12,791	4	0	0	0	4	21
Patrick County	111	0.3%	12:11	10.8%	\$3,023,520	\$27,239	1	3	0	0	4	36
Petersburg	620	1.4%	5:00	67.1%	\$5,421,666	\$8,745	71	13	14	0	98	158
Pittsylvania County	461	1.1%	10:49	13.7%	\$8,521,176	\$18,484	4	4	2	0	10	22
Poquoson	76	0.2%	3:44	85.5%	\$804,700	\$10,588	1	0	1	0	2	26
Portsmouth	966	2.2%	5:41	70.9%	\$11,188,075	\$11,582	11	7	10	0	28	29
Powhatan County	172	0.4%	10:48	19.8%	\$5,355,330	\$31,136	10	2	8	0	20	116
Prince Edward County	103	0.2%	9:48	11.7%	\$2,163,485	\$21,005	4	4	0	0	8	78
Prince George County	202	0.5%	9:54	18.3%	\$1,667,400	\$8,254	1	1	1	0	3	15
Prince William County	566	1.3%	6:28	46.1%	\$410,000	\$724	2	1	0	1	4	7
Pulaski County	285	0.7%	5:49	60.9%	\$5,805,807	\$20,371	6	3	6	0	15	53
Radford	90	0.2%	4:05	80.0%	\$1,557,272	\$17,303	2	4	0	0	6	67
Rappahannock County	96	0.2%	12:39	9.4%	\$2,859,607	\$29,788	0	1	0	0	1	10
Richmond	1,951	4.5%	5:27	78.4%	\$36,876,337	\$18,901	172	26	70	0	268	137
Richmond County	6	0.0%	10:20	16.7%	\$25,500	\$4,250	1	0	0	0	1	167
Roanoke	928	2.2%	4:31	80.4%	\$15,940,867	\$17,178	69	9	23	0	101	109
Roanoke County	418	1.0%	8:34	20.1%	\$6,214,973	\$14,868	11	2	13	0	26	62
Rockbridge County	200	0.5%	12:59	16.0%	\$1,732,450	\$8,662	0	1	1	0	2	10
Rockingham County	483	1.1%	11:02	16.8%	\$3,827,900	\$7,925	10	0	5	0	15	31
Russell County	75	0.2%	11:34	18.7%	\$1,188,150	\$15,842	0	1	0	0	1	13

Virginia Residential Building Fires
 In 1-or-2 Family Dwellings
Reported Fires by Locality
 (Jan 2000-Sep 2008 Combined)



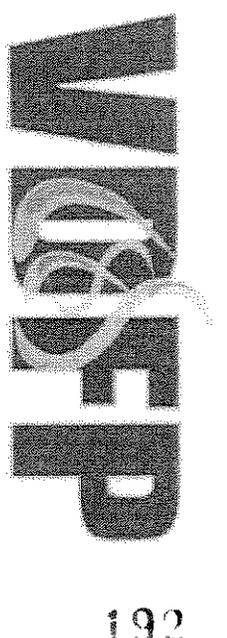
County/City	#	%	RT Avg	%≤6	Loss Tot	Loss/Inc	Civ Inj	Civ Fatal	FS Inj	FS Fatal	Total Inj/Death	Inj/Death Per 1k Inc.
Salem	117	0.3%	10:54	59.8%	\$1,202,208	\$10,275	7	1	(6)	0	14	120
Scott County	172	0.4%	13:53	18.0%	\$3,680,300	\$21,397	2	1	1	0	4	23
Shenandoah County	253	0.6%	12:34	18.2%	\$1,964,210	\$7,764	2	(7)	0	0	9	36
Smyth County	220	0.5%	10:46	19.1%	\$3,378,470	\$15,357	1	1	0	0	2	9
Southampton County	102	0.2%	9:51	13.7%	\$1,847,650	\$18,114	3	(7)	3	0	13	127
Spotsylvania County	658	1.5%	8:13	26.7%	\$137,217,579	\$208,537	28	3	(16)	0	47	71
Stafford County	246	0.6%	7:43	39.0%	\$3,898,426	\$15,847	5	0	2	0	7	28
Staunton	205	0.5%	4:19	77.0%	\$1,172,231	\$5,718	6	1	5	0	12	59
Suffolk	1,006	2.3%	5:23	63.6%	\$11,600,775	\$11,532	39	(4)	(26)	0	69	69
Surry County	31	0.1%	13:26	10.0%	\$796,850	\$25,705	0	1	2	0	3	97
Sussex County	83	0.2%	7:47	39.8%	\$1,860,600	\$22,417	1	2	2	0	5	60
Tazewell County	187	0.4%	8:49	28.3%	\$2,905,660	\$15,538	12	(5)	5	0	22	118
Virginia Beach	2,357	5.5%	7:40	29.6%	\$60,609,930	\$25,715	222	(2)	70	0	316	134
Warren County	95	0.2%	9:18	30.5%	\$1,367,190	\$14,391	5	3	4	0	12	126
Washington County	273	0.6%	12:13	7.7%	\$5,477,100	\$20,063	7	(7)	4	0	18	66
Waynesboro	197	0.5%	3:39	90.8%	\$1,838,668	\$9,333	10	3	4	0	17	86
Westmoreland County	110	0.3%	9:27	20.9%	\$1,919,240	\$17,448	1	0	2	0	3	27
Williamsburg	59	0.1%	4:26	78.0%	\$309,675	\$5,249	6	0	2	0	8	136
Winchester	223	0.5%	3:19	92.4%	\$1,433,965	\$6,430	18	0	9	0	27	121
Wise County	162	0.4%	9:41	34.0%	\$2,906,055	\$17,939	8	(4)	3	0	15	93
Wythe County	255	0.6%	9:44	22.4%	\$3,973,380	\$15,582	12	1	7	0	20	78
York County	325	0.8%	4:47	69.5%	\$4,640,438	\$14,278	29	0	11	0	40	123
Total	43,072	100.0%	7:57	47.0%	\$995,269,784	\$23,107	1,917	341	842	2	3,102	72

Residential Structure Fire Causes

State: VA Report Period: 1/1/08 - 12/31/08

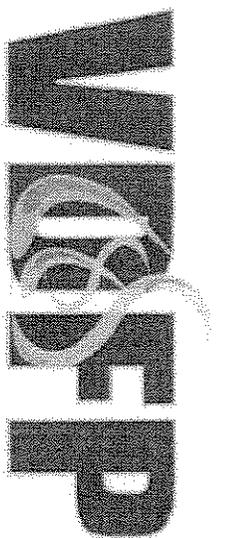
CODE	CATEGORY	FREQ	FREQ %	CIV DTHS	CIV DTHS %	CIV INJS	CIV INJS %	FF DTHS	FF DTH %	FF INJS	FF INJS %	PROP LOSS	PROP LOSS %	CONT LOSS	CONT LOSS %	TOTAL LOSS	TOT LOSS %
01	Incendary, Suspicious	313	4.17%	4	7.14%	10	3.04%	0	0.00%	16	14.41%	8,346,659	6.90%	1,682,750	5.21%	10,029,409	6.54%
02	Children Playing	28	0.37%	0	0.00%	4	1.22%	0	0.00%	0	0.00%	137,160	0.11%	35,800	0.11%	172,960	0.11%
03	Smoking	131	1.75%	1	1.79%	15	4.56%	0	0.00%	11	9.91%	2,095,690	1.73%	1,200,737	3.72%	3,296,427	2.15%
04	Heating	1,205	16.06%	0	0.00%	8	2.43%	0	0.00%	3	2.70%	2,703,847	2.23%	818,277	2.53%	3,522,124	2.30%
05	Cooking	2,359	31.44%	3	5.36%	108	32.83%	0	0.00%	6	5.41%	3,680,606	3.04%	1,053,711	3.26%	4,734,317	3.09%
06	Electrical Distribution	141	1.88%	3	5.36%	10	3.04%	0	0.00%	3	2.70%	3,905,047	3.23%	1,049,883	3.25%	4,954,930	3.23%
07	Appliances, Air Conditioning	211	2.81%	4	7.14%	25	7.60%	0	0.00%	2	1.80%	3,102,336	2.56%	1,315,660	4.08%	4,417,996	2.88%
08	Open Flame, Ember, Torch	355	4.73%	3	5.36%	27	8.21%	0	0.00%	3	2.70%	9,560,562	7.90%	3,201,732	9.92%	12,762,294	8.32%
09	Other Heat, Flame, Spark	230	3.07%	2	3.57%	7	2.13%	0	0.00%	3	2.70%	5,732,156	4.74%	1,454,438	4.51%	7,186,594	4.69%
10	Other Equipment	47	0.63%	1	1.79%	4	1.22%	0	0.00%	1	0.90%	2,527,180	2.09%	238,880	0.74%	2,766,060	1.80%
11	Natural	107	1.43%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	3,243,875	2.68%	1,207,385	3.74%	4,451,260	2.90%
12	Exposure	237	0.88%	0	0.00%	3	0.91%	0	0.00%	6	5.41%	5,210,206	4.30%	1,047,940	3.25%	6,258,146	4.08%
13	Unknown Cause	2,314	30.78%	35	62.50%	108	32.83%	0	0.00%	57	51.35%	70,816,362	58.45%	17,977,310	55.68%	88,793,672	57.90%
Totals		7,678	100.00%	56	100.00%	329	100.00%	0	100.00%	111	100.00%	121,061,686	100.00%	32,284,503	100.00%	153,346,189	100.00%

Virginia Civilian Fire Deaths Year 2008 & 2007 By Year by Locality



Yr	Locality	Mon	Alarm Date	Fire Dept	Fire Category	Aid	Ignition Cause	Multiple Deaths	Gender	Age	Race	Injury Cause
2008	Albemarle Co.	Dec	12/11/2008	Albemarle Co. Fire Rescue	Vehicle	Rec'd	Unintentional	No	Male	64	White	Exposed to Fire Product
2008	Albemarle Co.	Jan	1/26/2008	Albemarle Co. Fire Rescue	Structure	Rec'd	Investigation	No	Male	44	White	Exposed to Fire Product
2008	Arlington Co.	Jul	7/28/2008	Arlington Co. Fire Dept.	Structure	Rec'd	Undetermined	No	Female	84	White	Exposed to Fire Product
2008	Arlington Co.	Mar	3/7/2008	Arlington Co. Fire Dept.	Structure	Rec'd	Under Investigation	No	Female	91	White	Exposed to Fire Product
2008	Bedford	Jul	7/23/2008	Bedford Vol. Fire Department	Vehicle	Rec'd	Failure of equip.	No	Female	37		
2008	Danville	Apr	4/10/2008	Danville Fire Department	Structure	Rec'd	Under Investigation	No	Male	61	Black	Exposed to Fire Product
2008	Danville	Feb	2/15/2008	Danville Fire Department	Structure	Rec'd	Under Investigation	No	Female	50	Black	Exposed to Fire Product
2008	Danville	Jan	1/5/2008	Danville Fire Department	Structure	Rec'd	Under Investigation	Yes	Male	62	Black	Exposed to Fire Product
2008	Danville	Jan	1/5/2008	Danville Fire Department	Structure	Rec'd	Under Investigation	Yes	Male	65	Black	Exposed to Fire Product
2008	Danville	Jan	1/5/2008	Danville Fire Department	Structure	Rec'd	Under Investigation	Yes	Male	75	Black	Exposed to Fire Product
2008	Dinwiddle Co.	Oct	10/20/2008	Namozine Vol. Fire & Res Dept.	Structure	Rec'd	Investigation	No	Female	55	White	Undetermined
2008	Dinwiddle Co.	Apr	4/1/2008	Dinwiddle Vol. Fire & Rescue	Vehicle	Rec'd	Unintentional	No	Female	43	Undetermined	Exposed to Fire Product
2008	Essex Co.	Dec	12/5/2008	Tappahannock-Essex VFD	Structure	Rec'd	Investigation	No	Male	44	White	Exposed to Fire Product
2008	Fairfax Co.	Aug	8/8/2008	Fairfax Co. Fire & Rescue	Vehicle	Rec'd	Unintentional	No	Male	15		
2008	Fairfax Co.	Jun	6/17/2008	Fairfax Co. Fire & Rescue	Structure	Rec'd	Unintentional	No	Male	52		
2008	Fairfax Co.	Mar	3/5/2008	Fairfax Co. Fire & Rescue	Structure	Rec'd	Unintentional	No	Male	48		
2008	Fairfax Co.	Mar	3/1/2008	Fairfax Co. Fire & Rescue	Structure	Rec'd	Unintentional	No	Male	47		
2008	Fairfax Co.	Jan	1/12/2008	Fairfax Co. Fire & Rescue	Structure	Rec'd	Intentional	No	Male	39		
2008	Floyd Co.	Aug	8/18/2008	Floyd Co. Vol. Fire Dept. #1	Structure	Rec'd	Unintentional	No	Male	63		
2008	Franklin Co.	Feb	2/23/2008	Franklin County Emerg Svcs.	Mobile Struct.	Rec'd	Under Investigation	No	Male	74	White	Exposed to Fire Product
2008	Goochland Co.	Jun	6/18/2008	Goochland Co. Fire/Rescue	Structure	Rec'd	Under Investigation	No	Female	75	White	
2008	Hampton	Dec	12/4/2008	Hampton Fire Department	Structure	Rec'd	Unintentional	Yes	Female	9		Caught or trapped
2008	Hampton	Dec	12/4/2008	Hampton Fire Department	Structure	Rec'd	Unintentional	Yes	Male	8		Caught or trapped
2008	Hampton	Dec	12/4/2008	Hampton Fire Department	Structure	Rec'd	Unintentional	Yes	Female	72	Black	Exposed to Fire Product
2008	Hampton	Jun	6/22/2008	Hampton Fire Department	Vehicle	Rec'd	Unintentional	No	Male	21		Undetermined

Virginia Civilian Fire Deaths Year 2008 & 2007 By Year by Locality



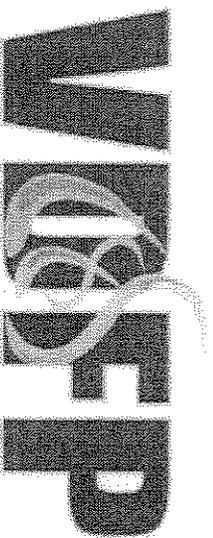
Yr	Locality	Mon	Alarm Date	Fire Dept	Fire Category	Aid	Ignition Cause	Multiple Deaths	Gender	Age	Race	Injury Cause
2008	Harrisonburg	Feb	2/16/2008	Harrisonburg Fire Dept.	Structure	Rec'd	Unintentional	No	Male	70	Other	Undetermined
2008	Henrico Co.	Sep	9/24/2008	Henrico Division of Fire	Structure	Rec'd	Under investigation	Yes	Female	0		
2008	Henrico Co.	Sep	9/24/2008	Henrico Division of Fire	Structure	Rec'd	Under investigation	Yes	Female	34	Asian	Undetermined
2008	Henrico Co.	Sep	9/24/2008	Henrico Division of Fire	Structure	Rec'd	Under investigation	Yes	Female	28	Asian	Undetermined
2008	Henrico Co.	Jan	1/21/2008	Henrico Division of Fire	Structure	Rec'd	Under investigation	No	Male	49	White	Undetermined
2008	Henrico Co.	Jan	1/17/2008	Henrico Division of Fire	Structure	Rec'd	Other	No	Female	52	White	Exposed to Fire Product
2008	Henry Co.	Feb	2/29/2008	Dyer's Store Vol. Fire Dept.	Structure	Rec'd	Unintentional	No	Male	47		Undetermined
2008	James City Co.	Nov	11/8/2008	James City Co. Fire Dept.	Mobile Struct.	Rec'd	Under investigation	No	Male	77	Black	Exposed to Fire Product
2008	James City Co.	Jan	1/5/2008	James City Co. Fire Dept.	Structure	Rec'd	Under investigation	No	Male	77	White	Exposed to Fire Product
2008	King George Co.	Jun	6/27/2008	King George Emergency Svcs	Structure	Rec'd	Failure of equip.	No	Female	77	White	Exposed to toxic fumes, no smoke
2008	Loudoun Co.	Jul	7/2/2008	Aide Vol. Fire Dept.	Vehicle	Rec'd	Unintentional	No	Female	20		
2008	Martinsville	Nov	11/20/2008	Martinsville Fire Department	Structure	Rec'd	Under investigation	No	Male	45		Undetermined
2008	Martinsville	Jul	7/4/2008	Martinsville Fire Department	Structure	Rec'd	Under investigation	No	Male	62	White	Exposed to Fire Product
2008	Nelson Co.	Jan	1/30/2008	Lovingsston Vol. Fire Dept.	Structure	Rec'd	Under investigation	Yes	Female	38		
2008	Nelson Co.	Jan	1/30/2008	Lovingsston Vol. Fire Dept.	Structure	Rec'd	Under investigation	Yes	Male	11		
2008	Newport News	Jul	7/9/2008	Newport News Fire Dept.	Vehicle	Rec'd	Under investigation	No	Male	52	White	Exposed to Fire Product
2008	Newport News	Jun	6/27/2008	Newport News Fire Dept.	Structure	Rec'd	Unintentional	No	Male	19		Exposed to Fire Product
2008	Petersburg	Jun	6/22/2008	Petersburg Fire and Rescue	Structure	Rec'd	Failure of equip.	No	Female	53		Exposed to Fire Product
2008	Powhatan Co.	May	5/27/2008	Powhatan Co. Vol. Fire Dept.	Structure	Rec'd	Under investigation	No	Female	1	White	Undetermined
2008	Radford	Feb	2/4/2008	Radford Fire Department	Structure	Rec'd	Failure of equip.	No	Male	34	White	Exposed to Fire Product
2008	Richmond	Dec	12/28/2008	Richmond Fire/Emergency Srv	Structure	Rec'd	Under investigation	No	Female	76	White	Undetermined

Virginia Civilian Fire Deaths Year 2008 & 2007 By Year by Locality



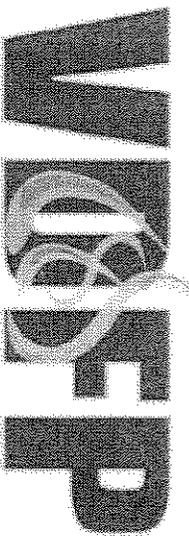
Yr	Locality	Mon	Alarm Date	Fire Dept	Fire Category	Aid	Ignition Cause	Multiple Deaths	Gender	Age	Race	Injury Cause
2008	Richmond	Feb	2/19/2008	Richmond Fire/Emergency Srv	Structure	Rec'd	Under investigation	No	Female	69	Black	Exposed to Fire Product
2008	Roanoke	Jul	7/12/2008	Roanoke Dept. of Fire-EMS	Vehicle	Rec'd	Unintentional	No	Male	25	Undetermined	Exposed to Fire Product
2008	Roanoke Co.	Oct	10/28/2008	Roanoke Co. Fire & Rescue	Structure	Rec'd	Undetermined	No	Male	58		Exposed to Fire Product
2008	Shenandoah Co.	Jan	1/16/2008	Woodstock Fire Dept.	Structure	Rec'd	Under investigation	No	Male	71	White	
2008	Smyth Co.	Dec	12/7/2008	Saltville Vol. Fire Dept.	Structure	Rec'd	Failure of equip.	No	Male	53	White	Exposed to Fire Product
2008	Southampton Co.	Feb	2/9/2008	Boykins Vol. Fire Dept.	Structure	Rec'd	Under investigation	No	Male	35	Black	Undetermined
2008	Spotsylvania Co.	Apr	4/11/2008	Spotsylvania Fire & Rescue	Other	Rec'd	Intentional	No	Male	15		Exposed to Fire Product
2008	Spotsylvania Co.	Jan	1/8/2008	Spotsylvania Fire & Rescue	Structure	Rec'd	Unintentional	No	Female	32		Other
2008	Surry Co.	Jun	6/26/2008	Claremont Vol. Fire Dept.	Structure	Rec'd	Under investigation	No	Male	55		
2008	Sussex Co.	Dec	12/14/2008	Stony Creek Vol. Fire Dept.	Structure	Rec'd	Unintentional	No	Male	76	Black	
2008	Virginia Beach	Jul	7/23/2008	Virginia Beach Fire Dept.	Structure	Rec'd	Unintentional	No	Male	50	White	Undetermined
2008	Virginia Beach	Apr	4/14/2008	Virginia Beach Fire Dept.	Structure	Rec'd	Unintentional	No	Male	50		Exposed to Fire Product
2008	Virginia Beach	Feb	2/5/2008	Virginia Beach Fire Dept.	Structure	Rec'd	Unintentional	No	Female	60	White	Exposed to Fire Product
2008	Warren Co.	Apr	4/17/2008	Front Royal Vol. Fire Dept.	Structure	Rec'd	Under investigation	Yes	Female	8		Exposed to Fire Product
2008	Warren Co.	Apr	4/17/2008	Front Royal Vol. Fire Dept.	Structure	Rec'd	Under investigation	Yes	Female	4		Exposed to Fire Product
2008	Westmoreland Co.	Dec	12/24/2008	Colonial Beach Vol. Fire Dept.	Mobile Struct.	Rec'd	Under investigation	No	Male	82		Exposed to Fire Product
2008	Winchester	Jan	1/18/2008	Winchester Fire & Rescue	Structure	None	Under investigation	No	Male	50		
2007	Augusta Co.	May	5/17/2007	Dooms/Wilson Vol. Fire Dept.	Structure	Rec'd	Unintentional	No	Female	45		
2007	Augusta Co.	Jan	1/27/2007	Verona Fire Dept.	Structure	Rec'd	Unintentional	No	Female	45	White	Exposed to Fire Product
2007	Bedford Co.	Feb	2/7/2007	Huddleston Vol. Fire Dept.	Structure	Rec'd	Undetermined	Yes	Female	29		
2007	Bedford Co.	Feb	2/7/2007	Huddleston Vol. Fire Dept.	Structure	Rec'd	Undetermined	Yes	Female	11		
2007	Bedford Co.	Feb	2/7/2007	Huddleston Vol. Fire Dept.	Structure	Rec'd	Undetermined	Yes	Female	4		
2007	Bristol	Jun	6/10/2007	Bristol Fire Dept.	Structure	Rec'd	Under investigation	No	Female	62	White	Exposed to Fire Product
2007	Buckingham Co.	Jan	1/1/2007	Glenmore Vol. Fire Dept.	Vehicle	Rec'd	Unintentional	No	Male	25		
2007	Charlotte Co.	Apr	4/20/2007	Drake Branch Vol. Fire Dept.	Structure	Rec'd	Unintentional	No	Male	69		

Virginia Civilian Fire Deaths Year 2008 & 2007 By Year by Locality



Yr	Locality	Mon	Alarm Date	Fire Dept	Fire Category	Aid	Ignition Cause	Multiple Deaths	Gender	Age	Race	Injury/Cause
2007	Charlottesville	Mar	3/18/2007	Charlottesville Fire Dept	Structure	Rec'd	Under investigation	No	Male	25		Exposed to Fire Product
2007	Chesapeake	Aug	8/5/2007	Chesapeake Fire Department	Other	Rec'd	Unintentional	No	Female	77	White	Exposed to Fire Product
2007	Chesapeake	Jun	6/27/2007	Chesapeake Fire Department	Other	Rec'd	Unintentional	No	Female	50	White	Exposed to Fire Product
2007	Chesterfield Co.	Dec	12/3/2007	Chesterfield Fire & EMS	Structure	Rec'd	Unintentional	No	Male	50	Black	Exposed to Fire Product
2007	Chesterfield Co.	Sep	9/1/2007	Chesterfield Fire & EMS	Vehicle	Rec'd	Unintentional	No	Female	50		Exposed to Fire Product
2007	Chesterfield Co.	Mar	3/3/2007	Chesterfield Fire & EMS	Structure	Rec'd	Intentional	Yes	Male	10		Exposed to Fire Product
2007	Chesterfield Co.	Mar	3/3/2007	Chesterfield Fire & EMS	Structure	Rec'd	Intentional	Yes	Male	40		Exposed to Fire Product
2007	Chesterfield Co.	Mar	3/3/2007	Chesterfield Fire & EMS	Structure	Rec'd	Intentional	Yes	Female	70		Exposed to Fire Product
2007	Chesterfield Co.	Mar	3/2/2007	Chesterfield Fire & EMS	Structure	Rec'd	Unintentional	Yes	Male	13	Black	Exposed to Fire Product
2007	Chesterfield Co.	Mar	3/2/2007	Chesterfield Fire & EMS	Structure	Rec'd	Unintentional	Yes	Male	11	Black	Exposed to Fire Product
2007	Chesterfield Co.	Mar	3/2/2007	Chesterfield Fire & EMS	Structure	Rec'd	Unintentional	Yes	Male	45	White	Exposed to Fire Product
2007	Colonial Heights	Jun	6/27/2007	Colonial Heights Fire Dept.	Structure	Rec'd	Other	No	Male	45	White	Exposed to Fire Product
2007	Covington	Oct	10/19/2007	Covington Fire Department	Structure	Rec'd	Undetermined	No	Female	77	White	Exposed to Fire Product
2007	Dickenson Co.	Apr	4/21/2007	Haysi VFD	Structure	Rec'd	Under investigation	No	Male	50	White	Exposed to toxic fumes, no smoke
2007	Fairfax Co.	Dec	12/28/2007	Fairfax Co. Fire & Rescue	Structure	Rec'd	Under investigation	Yes	Female	16		
2007	Fairfax Co.	Dec	12/28/2007	Fairfax Co. Fire & Rescue	Structure	Rec'd	Under investigation	Yes	Female	13		
2007	Fairfax Co.	Jan	1/20/2007	Fairfax Co. Fire & Rescue	Structure	Rec'd	Under investigation	No	Female	91		
2007	Fauquier Co.	Mar	3/16/2007	Warrenton Volunteer Fire Co.	Vehicle	Rec'd	Under investigation	No	Male	22		Exposed to Fire Product
2007	Franklin	Feb	2/1/2007	Franklin Fire & Rescue Dept.	Structure	Rec'd	Undetermined	No	Male	0	Black	
2007	Franklin Co.	Mar	3/18/2007	Franklin County Emerg Srvs.	Structure	Rec'd	Failure of equip.	No	Female	73	White	Exposed to Fire Product
2007	Franklin Co.	Mar	3/18/2007	Rocky Mount Fire Dept.	Mobile Struct.	Rec'd	Unintentional	No	Female	73	White	
2007	Franklin Co.	Jan	1/28/2007	Franklin County Emerg Srvs.	Mobile Struct.	Rec'd	Failure of equip.	No	Female	70	White	Exposed to Fire Product
2007	Franklin Co.	Jan	1/28/2007	Glade Hill Fire Dept.	Structure	Rec'd	Under investigation	No	Female	76		Undetermined
2007	Giles Co.	Apr	4/5/2007	Eggleston Vol. Fire Dept.	Structure	Rec'd	Unintentional	No	Female	74	White	Exposed to Fire Product
2007	Hampton	Feb	2/17/2007	Hampton Fire Department	Structure	Rec'd	Under investigation	Yes	Male	59	White	Exposed to Fire Product
2007	Hampton	Feb	2/17/2007	Hampton Fire Department	Structure	Rec'd	Under investigation	Yes	Female	81	White	Exposed to Fire Product

Virginia Civilian Fire Deaths Year 2008 & 2007 By Year by Locality



Yr	Locality	Mon	Alarm Date	Fire Dept.	Fire Category	Aid	Ignition Cause	Multiple Deaths	Gender	Age	Race	Injury Cause
2007	Henry Co.	Dec	12/22/2007	Ridgeway Vol. Fire Dept.	Structure	Rec'd	Failure of equip.	No	Male	31		
2007	King George Co.	Nov	11/14/2007	King George Emergency Svcs	Structure	Rec'd	Under investigation	No	Male	42	Black	Undetermined
2007	Lee Co.	Apr	4/6/2007	Pennington Gap Vol. Fire Dept.	Structure	Rec'd	Undetermined	Yes	Male	50		
2007	Lee Co.	Apr	4/6/2007	Pennington Gap Vol. Fire Dept.	Structure	Rec'd	Undetermined	Yes	Female	11		
2007	Lynchburg	Jan	1/20/2007	Lynchburg Fire Department	Structure	Rec'd	Under investigation	No	Male	33	White	Undetermined
2007	Mecklenburg Co.	Mar	3/22/2007	South Hill Vol. Fire Dept.	Structure	Rec'd	Under investigation	No	Female	10	Black	Exposed to Fire Product
2007	Montgomery Co.	Nov	11/25/2007	Blacksburg Fire Department	Structure	Rec'd	Unintentional	No	Female	89		
2007	Newport News	Dec	12/23/2007	Newport News Fire Dept.	Structure	Rec'd	Unintentional	No	Female	53		Fell, slipped, tripped
2007	Newport News	Apr	4/14/2007	Newport News Fire Dept.	Structure	Rec'd	Undetermined	No	Female	32		Undetermined
2007	Newport News	Feb	2/26/2007	Newport News Fire Dept.	Structure	Rec'd	Unintentional	No	Female	51		Caught or trapped
2007	Newport News	Jan	1/17/2007	Newport News Fire Dept.	Structure	Rec'd		No	Female	22		Other
2007	Orange Co.	Apr	4/1/2007	Orange Vol. Fire Dept.	Vehicle	Rec'd	Unintentional	No	Male	17	White	Caught or trapped
2007	Petersburg	Nov	11/28/2007	Petersburg Fire and Rescue	Structure	Rec'd	Undetermined	Yes	Female	16		Exposed to Fire Product
2007	Petersburg	Nov	11/28/2007	Petersburg Fire and Rescue	Structure	Rec'd	Undetermined	Yes	Female	7		Exposed to Fire Product
2007	Petersburg	Nov	11/28/2007	Petersburg Fire and Rescue	Structure	Rec'd	Undetermined	Yes	Male	0		Exposed to Fire Product
2007	Petersburg	Jul	7/7/2007	Petersburg Fire and Rescue	Structure	Rec'd	Intentional	No	Female	0		Undetermined
2007	Petersburg	Jan	1/12/2007	Petersburg Fire and Rescue	Structure	Rec'd	Undetermined	Yes	Male	16		Exposed to Fire Product
2007	Petersburg	Jan	1/12/2007	Petersburg Fire and Rescue	Structure	Rec'd	Undetermined	Yes	Male	4		Exposed to Fire Product
2007	Petersburg	Jan	1/12/2007	Petersburg Fire and Rescue	Structure	Rec'd	Undetermined	Yes	Female	11		Exposed to Fire Product
2007	Portsmouth	Jan	1/16/2007	Portsmouth Fire Department	Structure	Rec'd	Undetermined	No	Female	75	Black	Exposed to Fire Product
2007	Prince Edward Co.	Mar	3/3/2007	Farmville Vol. Fire Dept.	Structure	Rec'd	Undetermined	Yes	Male	22	White	Exposed to Fire Product
2007	Prince Edward Co.	Mar	3/3/2007	Farmville Vol. Fire Dept.	Structure	Rec'd	Undetermined	Yes	Male	0	White	Exposed to Fire Product
2007	Richmond	Oct	10/28/2007	Richmond Fire/Emergency Srv	Structure	Rec'd	Intentional	No	Female	49		
2007	Richmond	Aug	8/15/2007	Richmond Fire/Emergency Srv	Structure	Rec'd	Undetermined	No	Male			Exposed to Fire Product
2007	Richmond	Aug	8/9/2007	Richmond Fire/Emergency Srv	Structure	Rec'd	Other	No	Male			
2007	Richmond	Jun	6/6/2007	Richmond Fire/Emergency Srv	Vehicle	Rec'd	Undetermined	No	Unknown			Caught or trapped
2007	Richmond	Mar	3/26/2007	Richmond Fire/Emergency Srv	Structure	Rec'd	Unintentional	Yes	Female	4		Exposed to Fire Product
2007	Richmond	Mar	3/26/2007	Richmond Fire/Emergency Srv	Structure	Rec'd	Unintentional	Yes	Female	2		Exposed to Fire Product
2007	Roanoke	Feb	2/18/2007	Roanoke Dept. of Fire-EMS	Structure	Rec'd	Under investigation	No	Male	40	Black	Exposed to Fire Product

EXECUTIVE SUMMARY

On May 25, 2008, fire and rescue personnel from Loudoun County responded to a structure fire at 43238 Meadowood Court in Leesburg, Virginia. During the course of the incident, seven responders were injured. Of those injured, four firefighters received significant burn injuries, two firefighters sustained orthopedic injuries, and one EMS provider was treated for minor respiratory distress. Given the severity of the injuries and magnitude of the event, an independent Investigative Team was assembled to review the incident.

Specifically, the Team was tasked with reviewing “the events leading up to the incident, the incident operation(s), the firefighter MAYDAY(s), and incident mitigation.”

The Department of Fire, Rescue, and Emergency Management – Fire Marshal’s Office and the Virginia Occupational Safety and Health Compliance Program (VOSH) also performed separate, independent, investigations into the Meadowood Court incident.

This *Investigative Report* contains the results of the Team’s comprehensive review and analysis. All of the information presented is factual and was validated by multiple sources prior to inclusion in this document. It is important to note that the Investigative Team had months to examine the incident and develop recommendations. In contrast, the first personnel to arrive on the scene had only seconds to make critical decisions and take action.

The Team determined that several major factors adversely affected the sequence of events on Meadowood Court, including:

- Supplemental Information
- Situational Awareness
- Strategy and Tactics
- Effective Firefighting Force
- Lightweight Building Construction and Materials
- Fire Behavior

Supplemental Information: Personnel in the Emergency Communications Center (ECC) obtained information from the 911 caller indicating that there was fire on the first floor and that it appeared nobody was inside the structure. This critical supplemental information was not provided to responding units or command officers.

Situational Awareness: The first arriving officer did not complete a full, 360° walk around/size-up of the structure nor did personnel observe the fire on the first floor as they entered the structure.

Strategy and Tactics: Based on the officers' perception of conditions, first-arriving crews initiated an offensive fire attack and primary search on the second floor of the structure, which allowed the fire to grow unchecked on the first floor.

Effective Firefighting Force: The first arriving units, Reserve Engine 6 and Tower 6, were at minimum staffing and responded with three personnel each. These units operated on scene for nearly six minutes prior to the arrival of a command officer or another tactical unit. During this time, personnel had numerous fireground tasks to complete, as quickly as possible. As a result, personnel were required to complete multiple tasks, which diverted their attention from their primary assignment.

Specifically, both apparatus operators were involved with laddering and ventilating the structure, leaving the pump panel unattended. In addition, both the Reserve Engine and Tower Officer were engaged in tactical operations, which diminished their ability to supervise, observe changes in the fire conditions, maintain overall situational awareness, and provide command with ongoing status reports.

Building Construction/Fire Behavior: The combination of lightweight building materials, vinyl siding, combustible sheathing, and the significant interior fire load on the first floor of the structure contributed to rapid fire spread. The fire quickly developed to the point of flashover, which trapped the personnel on the second floor of the structure.

The Team also determined several key factors that favorably affected the incident's outcome:

Firefighter Self-Rescue and Situational Awareness

- The Reserve Engine Officer recognized deteriorating interior conditions and rapidly led personnel out of the structure.
- The Tower Officer persevered under extreme circumstances to exit the structure.
- The Tower Firefighter maintained composure, in deteriorating conditions, and transmitted critical directions regarding ladder placement from the interior of the structure.
- The Reserve Engine Firefighter maintained composure and stayed with the crew during the exit from the structure.
- The four injured firefighters' Personal Protective Equipment (PPE) and Self-Contained Breathing Apparatus (SCBA) performed properly under extreme conditions, protecting them against more severe thermal or respiratory injuries.

Fireground Operations

- The first-arriving apparatus driver/operators placed ladders quickly, which provided a means of escape for interior personnel.

Command and Control

- The Incident Commander immediately acknowledged the firefighter MAYDAY.
- Command recognized the need to evacuate the structure.

Training

- All four of the firefighters operating inside the structure had successfully completed the Virginia Department of Fire Programs' MAYDAY Firefighter Down! curriculum.
- All four firefighters operating on the interior of the structure had participated in the Montgomery County (MD) Department of Fire and Rescue Services flashover simulator training program.

Building Construction

- The dimensional lumber floor joists supporting the second floor remained intact throughout the incident, which avoided a floor collapse, allowing firefighters to escape.

Finally, recommendations are provided throughout the *Report* in an effort to provide a framework to enhance and improve the Loudoun County Fire and Rescue System as well as protect responder and citizen safety.

Wood Floor Failures, Excerpted from RR-252, National Research Council of Canada, Study of Unprotected Floor Assemblies in Basement Fire Scenarios.

Table 8. Time to Failure of Unprotected Floor Assemblies

Assemblies tested	Open basement doorway		Closed basement doorway	
	Test	t_f (s)	Test	t_f (s)
Solid wood joist (235 mm depth)	UF-01	740	UF-02	1200
Wood I-joist A (302 mm depth)	UF-03	490	UF-09	778
Steel C-joist (203 mm depth)	UF-04	462	-	-
Metal-plate wood truss (305 mm depth)	UF-05	469	-	-
Wood I-joist B (302 mm depth)	UF-06	382	-	-
	UF-06R	380	-	-
	UF-06RR	414	-	-
Metal web wood truss (302 mm depth)	UF-07	325	UF-08	474

Note: In addition to the solid wood joist assembly, two engineered floor assemblies - one with the longest time and the other with the shortest time to reach failure in the open basement doorway scenario - were selected for testing with the closed basement doorway.

Timelines:

Floor Assembly Type	Test	First	OD =	FED=0.3-1	FED=0.3-1	Structural
		Alarm	2 m ⁻¹	1 st storey	2 nd storey	Failure
Tests with open basement doorway						
Solid wood joist	UF-01	40	185	<i>205-235</i>	<i>225-255</i>	740
Wood I-joist A	UF-03	48	183	205-213	<i>225-247</i>	490
Steel C-joist	UF-04	30	195	207-215	<i>245-280</i>	462
Metal-plate wood truss	UF-05	40	190	<i>206-232</i>	<i>235-260</i>	469
Wood I-joist B	UF-06	45	170	<i>198-211</i>	<i>208-241</i>	382
	UF-06R	38	161	<i>198-199</i>	<i>207-241</i>	380
	UF-06RR	43	184	<i>203-216</i>	<i>218-248</i>	414
Metal web wood truss	UF-07	40	170	192-207	<i>230-255</i>	325
Tests with closed basement doorway						
Solid wood joist	UF-02	42	297	<i>466-676</i>	<i>362-501</i>	1200
Metal web wood truss	UF-08	50	360	<i>400-486</i>	<i>375-510</i>	474
Wood I-joist A	UF-09	44	319	<i>329-484</i>	<i>364-504</i>	778

1. Values determined using the measurements at 1.5 m height (for gas concentrations and CO) or 1.4 m height (for temperatures);
2. The number with the *italic* font represents the calculated time for reaching the CO incapacitation dose, while the number in bold represents the calculated time for reaching the heat incapacitation dose, whichever occurred first;
3. All values shown in the table are before fire suppression.



The case for

HOME FIRE SPRINKLERS

NFPA's new advocacy campaign calls for sprinklers in every new one- and two-family home in the country. Here's how you can get involved. *By Scott Sutherland*

On January 5, John Robert Ray, chief of the Anne Arundel County Fire Department in Maryland, sat before the county council and explained why its seven members should vote in favor of a residential sprinkler ordinance. "Tonight you have the opportunity to tell all Anne Arundel County residents that their lives are equally important, rather than a matter of chance based on where they choose to live," Ray told the council. A state-mandated sprinkler ordinance for townhomes and condominiums had been on the books since 1992, but previous efforts in Anne Arundel to pass a similar measure for new one- and two-family homes had failed, largely due to opposition by homebuilders.

This time it stuck. That evening, the council voted 6-1 to adopt the ordinance, which requires sprinklers in all new one- and two-family homes, as well as in new, first-owner mobile homes and in certain renovations. Anne Arundel became the ninth of Maryland's 23 counties to enact such legislation, joining 82 cities and towns in the state that have similar laws.

"We had some opposition again from the homebuilders and real estate people, who said this wasn't a good time for the ordinance because it would add costs to new construction, and because they were already having a hard time selling new homes," Ray told *NFPA Journal* several weeks after the vote. "But I pointed out to them that those

were the same arguments they used back in the 1990s, when the market was booming. It's always the right time to protect lives."

Anne Arundel County exemplifies the goals of "Fire Sprinkler Initiative: Bringing Safety Home," the NFPA advocacy campaign that officially launched in January. The Web-based initiative (www.firesprinklerinitiative.org) will provide materials and resources to people and organizations working for the adoption of requirements for automatic fire sprinklers in new one- and two-family homes. The effort is aimed at adoption on the local, county, and state levels, and can take the form of ordinances or model codes such as NFPA 1, *Fire Code*[™], NFPA 101[®], *Life Safety Code*[®], NFPA 5000[®], *Building Construction & Safety Code*[®], or the *International Residential Code (IRC)*, all of which include provisions requiring home fire sprinklers in one- and two-family dwellings.

On February 4, NFPA President James Shannon spoke to several hundred attendees at the Residential Fire Sprinkler Summit in Addison, Illinois. About 400 communities across the country have residential sprinklers in use, Shannon told the gathering. "Our goal is to increase that number exponentially over the next few years, and with that broad experience, rebut all of the specious arguments about residential sprinklers, their cost, and their effectiveness that have kept communities and states from adopting residential sprinkler ordinances," he said. "Our opportunity to achieve that common and worthy goal is greater than it has ever been before."

Advocacy successes

As Shannon addressed the Illinois group, a bill supported by the initiative's opposition—chiefly homebuilder and real estate interests—was working its way through the Arizona state legislature. HB 2267 would prohibit communities in the state from passing ordinances requiring sprinklers in new, single-family detached homes. The only communities unaffected would be the handful that already have ordinances in place, including Scottsdale, which has had one since 1986. Despite opposition from more than 30 individuals and groups, including the Arizona League of Cities and Towns, the Arizona Fire Marshals Association, and the Arizona Fire Chiefs Association, the bill won endorsement in committee and was headed to the House floor.

Similar anti-sprinkler motions are under consideration in North Dakota, Maine, and elsewhere.

NFPA and its advocacy campaigns are no strangers to adversity. The Coalition for Fire-Safe Cigarettes, launched in 2006 with the goal of passing fire-safe cigarette laws in all 50 states, faced a powerful foe in the well-funded, politically connected tobacco lobby. Three years later, however, 37 states have either implemented the law or passed legislation paving the way for a law, and nine more have legislation pending.

www.firesprinklerinitiative.org

THE INITIATIVE'S WEBSITE OFFERS one-stop shopping to help you learn about the home fire sprinkler issue, keep you up-to-date, help you become an advocate, and connect you with other home fire sprinkler supporters. Here's a primer:

- + A **step-by-step guide** to help you prepare, present, and mobilize your advocacy efforts.
- + **Tips** on how to become an effective community leader and how to build your own grassroots coalition.
- + **Downloadable fact sheets**, designed for distribution, about residential sprinklers. Also on the page is a link to the latest cost-assessment report.
- + **Form letters** you can use to communicate with government and other community leaders on the life-saving benefits and costs of home fire sprinklers.
- + **Model language** to prepare you for questions regarding how your municipal code should be modified, including language describing the specific codes and standards that apply. This page also gives you a downloadable copy of a model ordinance.
- + A reproducible **"myths vs. facts" sheet** on home fire sprinklers.
- + A **downloadable sample petition** seeking sprinkler support.
- + **Links to YouTube videos** supporting the need for home fire sprinklers, created by Common Voices, a fire safety coalition.
- + A **downloadable copy of NFPA's U.S. Experience with Sprinklers**, a comprehensive report that will help you back up claims of sprinkler benefits with hard data drawn from extensive research.
- + **Updates on anti-sprinkler legislation** around the country and what you can do to fight them.
- + A **newsfeed** that provides links to relevant news stories including fires, advocacy efforts, and related events. There is also a link to a page describing how sprinklers work.
- + **Links** to other organizations that support home fire sprinklers and that are sources of additional support.
- + An **interactive blog** on home fires.

Questions? Email us at firesprinklerinitiative@nfpa.org.

Education First

The Home Fire Sprinkler Coalition continues its educational mission. By Gary Keith

WITH NFPA'S INTRODUCTION of the "Fire Sprinkler Initiative: Bringing Safety Home," it's important that the fire service and fire safety advocates understand the role that the Home Fire Sprinkler Coalition (HFSC) plays in protecting a growing number of homes with home fire sprinkler systems.

HFSC, founded in 1996, is the only national, nonprofit organization that works exclusively to educate the public about the life-saving value of fire sprinkler systems in one- and two-family homes. While HFSC has established itself as an important resource for information and educational material, HFSC is not involved in lobbying or efforts to promote fire sprinkler ordinances. It provides the tools and field resources to help sprinkler advocates talk to local elected officials and other decision makers.

HFSC has developed targeted teaching tools that address the informational needs of virtually everyone in the community, including consumers, members of the homebuilding industry, insurance and real estate professionals, school children, building officials, and water purveyors. Our ideas have earned FEMA Fire Prevention & Safety Grant funding,

With the fire-safe cigarettes effort underway, NFPA in 2007 began a series of focus groups with the fire service, sessions designed to identify other issues requiring a coordinated effort to reduce home fire fatalities and injuries. Overwhelmingly, participants said they wanted to see NFPA back a home fire sprinkler initiative. The idea made sense; NFPA had been a founding member of the Home Fire Sprinkler Coalition a decade earlier, and related NFPA model codes had included home sprinkler provisions since 2006. In addition, a growing number of communities across the country were considering, and in many cases passing, sprinkler ordinances of their own. Last September, the International Code Council voted to require sprinklers in new one- and two-family dwellings, effective 2011, in the IRC, a move

supported by NFPA. The following month, NFPA announced it would "coordinate a campaign to increase the number of homes protected by sprinklers."

"The inclusion of a home sprin-

which allows us to share our diverse library of resources.

Shortly after HFSC was established, we were fortunate to acquire Ron Hazelton as our spokesperson. Recognized for his role as Home Improvement Editor for ABC's "Good Morning America," Ron appears in all of our educational videos, including our new "Fire and Sprinkler Burn Demonstration" video, part of a kit that shows fire departments how to build and prepare a dramatic side-by-side fire and sprinkler demonstration.

Recently, more than 1,000 fire departments signed up for our new "Built for Life Fire Department Program," which provides free information and materials to make home fire sprinkler education a focus of their educational outreach.

I have been honored to serve with HFSC from its beginning, and I am very proud of the entire HFSC team. Over the years, our important messages have reached millions through education, public relations, advertising, trade shows and conventions, and our website, www.HomeFire-Sprinkler.org. If your fire department or organization has not yet tapped into HFSC's resources, you're missing out on an opportunity to improve your community's understanding of the life-saving value of home fire sprinklers.

—Gary Keith is vice-president of Field Operations and Education at NFPA and chair of the HFSC Board of Directors.

kler requirement for new construction in all the model codes strengthens our advocacy position," says Lorraine Carli, vice-president for Communications at NFPA. "We have been very clear that our efforts to move this initiative forward include advocating for the adoption of any code, including the IRC, that contains a sprinkler provision."

The initiative is "exactly what's needed," says Cathleen Vitale, the Anne Arundel County council member who introduced the sprinkler bill that was adopted in January. "Education is a huge part of what these efforts are about," says Vitale. "The ability to have that information in a central location is a vital tool in the legislative process."

Getting it done

The case for home fire sprinklers is timely and compelling and supported by an array of NFPA research. Around 80 percent of fire deaths in the United States occur in the home, killing nearly 3,000 people every year. Sprinklers have been used for more than a century to protect commercial, industrial, and public buildings, and have proven

ON THE WEB

For a brief history of the development of sprinklers, including pioneering efforts dating back to the early 19th century, see www.nfpajournal.org.

highly effective in multifamily dwellings. NFPA has no record of a multiple fatality in a fully sprinklered building where the system operated. The risk of dying in a home where a fire is reported decreases by about 82 percent when sprinklers are present. The cost of installing a sprinkler system in a new construction averages \$1.61 per square foot.

Vitale remembers the exact moment she decided to fight for home fire sprinklers in Anne Arundel County. Her husband, Mark, a local firefighter, had come home following a shift that included battling a house fire that claimed the lives of two children. Outside the children's room, he told her, a smoke detector sat upside down on a shelf. There were no batteries in it. "He just sat there hugging our little boy, saying 'they didn't have a chance,'" she recalls.

Vitale, an attorney who describes herself as a "staunch Republican," began researching home fire sprinklers. She talked to the local fire service, to homebuilders and real estate representatives, and to other communities that had passed ordinances. She met with local public works officials to make sure water-supply issues were addressed. She was clear about her intentions with fellow council members, and she made sure the community at large knew about her sprinkler effort. It took her "several years" to research the issue and craft a bill, Vitale says, but her due diligence paid off. The bill was introduced last October—timing it with NFPA's Fire Prevention Week was deliberate, she says—and it passed three months later with no major amendments. Homebuilder opposition was minimal, she says. "They spoke in terms of economics, saying now's not the time, but I attributed their absence to being somewhat supportive of what we were trying to do," she says. "They can pack our council room with 300 people if they oppose something."

Vitale, Chief Ray, and others readily share tips and strategy with sprinkler advocates; their suggestions, and much more, are available at www.firesprinklerinitiative.com. For the fire service, says Ray, get your own house in order first; make sure the volunteer service and the union are behind the effort. Use local stories of home fire injuries or deaths to illustrate that every new sprinklered home is an opportunity to avoid stories such as these in the future. Know what the research says about how new, light-weight construction burns. "[New] homes burn faster, produce more heat and deadly smoke,

and collapse more rapidly than at any time in our history," Ray told the council in November. "Modern construction methods and materials should be matched with modern fire protection systems."

On the legislative side, Vitale says, make sure you have the support of a county executive or mayor. Take your advocacy message directly to

The case for home fire sprinklers is timely and compelling. Around 80 percent of fire deaths in the United States occur in the home. The risk of dying in a home where a fire is reported decreases by about 82 percent when sprinklers are present.

the community, and share burn research on old construction vs. new with homebuilders and real estate representatives. Seek out existing sprinkler legislation—such as that available on the sprinkler initiative website—to modify for use in your own community. "Know that you're not in this alone," urges Vitale. "For every point your opponents raise, you can have a counterpoint that supports the idea that sprinklers should be done in new construction without a second thought. And all of that information is out there."

Mike Chapman, a homebuilder in New Mexico, urges advocates to consider negotiating trade-offs if a community requires residential sprinklers. "You're getting the benefit of safer houses, so you can look at things like road widths, water requirements, and other infrastructure needs [as areas to save money]," he says. "If you can link sprinklers to a reduction of city expenditures, these kinds of efforts could be very successful."

It doesn't matter how you do it, Vitale says—just get it done. "We require sprinklers to protect everything else, so why not the same for one- and two-family homes?" she asks. "Building a home is more than selecting a grade of carpet, or deciding if you want solid cherry cabinets. Sprinklers are common sense." ♦

Good points

SCOTT SUTHERLAND is executive editor of NFPA Journal.



NFPA OFFICERS

Fire-safe Cigarettes: Keep Fighting

As we launch a new advocacy campaign around home fire sprinklers, it is important to note that one of the most gratifying projects undertaken in recent years by the NFPA community is our highly successful coordination of the fire-safe cigarette campaign.

The campaign has progressed far more quickly than any of us could have imagined when we began three years ago. Our goal was to get all of the states to adopt legislation requiring that all cigarettes sold in the state be manufactured to fire-safe specifications. We chose the difficult route of seeking 50 state adoptions after decades of trying to get Congress to adopt a national bill, only to be trumped again and again by the powerful tobacco lobby in Washington.

With the enthusiastic support of the fire service, public health, consumer, and other safety advocates, this issue took off across the country. NFPA coordinated the campaign and provided legislative language, educational materials, public relations, and other support for this effort through a coalition that we organized.

The potential to save hundreds of lives and hundreds of millions of dollars annually in property losses inspired people all over the country to get behind this initiative. That effort created a juggernaut.

Less than three years after the announcement of the Coalition for Fire-Safe Cigarettes, 38 states have passed the legislation applying the fire-safe standard to all cigarette sales. The second-biggest cigarette manufacturer, R. J. Reynolds, has announced that all of its cigarettes in the United States will meet the standard by the end of 2009. Philip Morris, while not willing to go that far, is supporting our efforts to change the law state-by-state. There has also been tremendous

movement internationally. Canada was an early adopter of fire-safe cigarette requirements, and now Australia and the European Union have taken action.

It is vitally important that we not let up on this campaign. Our goal of having a true national standard is in sight. But unless we get the job done in the next couple of years, we run the risk that states will, over time, succumb to the pressure to backslide on this advance. If that happens, we will lose this chance for permanent progress. If we reach the point where every cigarette sold in the United States meets the safer standard, however, there will be no turning back.

In a few years, after the laws of all of the states have been changed and taken effect, we expect to see both a significant drop in fire deaths and a measurable decline in property losses. Smoking-related fires are still the number-one cause of fire fatalities in the United States, accounting for between 700 and 900 of the 3,000 or more fire deaths every year, so this is a historic opportunity to move the country in a significant way toward fire safety. But the job isn't done yet.

As I write this, a dozen states—Alabama, Arkansas, Michigan, Mississippi, Missouri, Nebraska, Nevada, New Mexico, North and South Dakota, West Virginia, and Wyoming—still have not passed fire-safe cigarette legislation. If you live in one of those states, please get involved now. Take a look at the Coalition's website—www.firesafecigarettes.org—and contact your legislator with the compelling argument for your state to pass this law without further delay. We have gotten this far because so many people all over the country mobilized to pass legislation where they live. Now we have to complete the job. ♣

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Commonwealth Chief

Fire-Safe Cigarette Law to be looked at by Virginia Legislator's

By: Bill Smith

Fast Facts...

Va. Data!
62,700 30% of mch

FACT:	Cigarettes are the <u>leading cause of home fire fatalities</u> in the United States, killing 700 to 900 people - smokers and nonsmokers alike - per year.	
FACT:	Smoking-material structure fires killed 760 people and injured 1,520 others in 2003. *	① 300 - 700 = 2300
FACT:	Property losses from smoking-material fires total hundreds of millions of dollars each year.	
FACT:	There were 25,600 smoking-material structure fires in the United States in 2003.	
FACT:	Fires caused by smoking materials are actually on the decline, thanks in part to more stringent standards for fire-resistive mattresses and upholstered furniture, public education, and a dramatic decrease in the number of cigarettes consumed per adult in the United States.	
FACT:	The risk of dying in a home structure fire caused by smoking materials rises with age. Between 1999 and 2003, <u>two-fifths (38%)</u> of fatal <u>smoking-material-fire victims</u> were age 65 or older.	
FACT:	One-quarter of victims of smoking-material fire fatalities are not the smokers whose cigarettes started the fire: 34 percent are children of the smokers; 25 percent are neighbors or friends; 14 percent are spouses or partners; and 13 percent are parents.	
FACT:	NFPA research in the mid-1980s predicted that fire-safe cigarettes would eliminate three out of four cigarette fire deaths. If cigarette manufacturers had begun producing only fire-safe cigarettes then, an estimated 15,000 lives could have been saved by now.	
FACT:	Mattresses and bedding, upholstered furniture, and trash are the items most commonly ignited in smoking-material home fires.	
FACT:	Between 1999 and 2003, almost half (43%) of fatal home smoking-material fire victims were sleeping when injured; one-third (32%) were attempting to escape, to fight the fire, or to rescue others.	

Source: NFPA's Fire Analysis and Research Division, Updated: 8/06

Cigarettes sold in 21 states will be self-extinguishing after a strikingly high 15 states passed new laws this year to combat smoking-related blazes, the No. 1 cause of home-fire deaths.

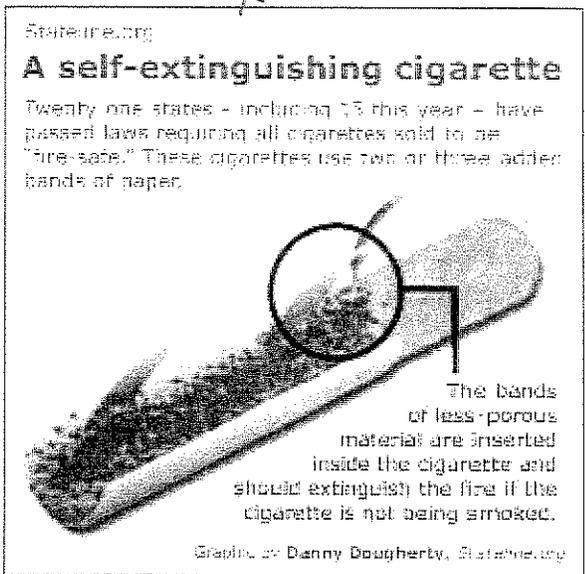
A fire-safe cigarette has a reduced propensity to burn when left unattended. The most common fire-safe technology used by cigarette manufacturers is to wrap cigarettes with two or three thin bands of less-porous paper that act as "speed bumps" to slow down a burning cigarette. If a fire-safe cigarette is left unattended, the burning tobacco will reach one of these speed bumps and self-extinguish.

In 2006, at the urging of Chief Mary Beth Michos and Chief Kevin McGee of the Prince William County Fire & Rescue Department, the Virginia Fire Chiefs Association joined with the Coalition for Fire Safe Cigarettes and other groups interested in promoting the adoption of fire-safe cigarettes. The goal was to have fire-safe cigarette legislation adopted in Virginia in an effort to reduce deaths and injuries caused by smoking materials.

During two Virginia Fire Service Stakeholders Legislative Summit's held in 2007, support was garnered to draft and find sponsorship for legislation to make fire-safe cigarettes a reality in Virginia during the upcoming General Assembly session. Since those summits, support has been sought and obtained from Phillip Morris and R. J. Reynolds Tobacco Companies in addition to the stakeholder groups.

It is important to understand what this law is and what it is not. This is not a law about an individual's right to smoke or where an individual can smoke. This law enhances the safety of cigarettes because they are a source of fires and it can be viewed as an enhancement to product safety much along the same lines as requiring airbags in automobiles.

Currently, five states have safe cigarette laws in effect and 16 others have passed similar laws and are approaching their effective dates. An estimated 52% of the population of the United States is protected by safe cigarette laws.



Sources: Coalition for Fire-Safe Cigarettes and Philip Morris USA



FEMA

March 28, 2008

USFA Position Paper – Residential Fire Sprinklers

Not 3,000 LT
2155

In the year 2006, 19% of all reported fires occurred in one- and two-family structures; however, these fires caused 66% (2,155) of the fire deaths in the US¹. In addition, more than 25% of firefighter on-duty deaths are associated with residential fires². This means that approximately 25 firefighter deaths occur during responses to residential fires each year, since on average, there are about 100 on-duty firefighter deaths annually³. Despite the fact that these figures represent improvement over the last 30 years, they continue to be appalling. Such losses are unacceptable.

Since the 1970's, USFA has promoted research studies, development, testing, and demonstrations of residential fire sprinkler systems and smoke alarms. These efforts, in concert with heroic efforts by many organizations and individuals, have resulted in the adoption of requirements to install smoke alarms in all new residential construction. In many jurisdictions, the retrofit of smoke alarms into existing residential occupancies has been mandated. Together, these efforts have saved many lives.

The results have been different, however, with respect to residential fire sprinkler systems; only a few jurisdictions have mandated their installation in new construction, and none have mandated retrofit of existing one and two family housing stock. The Center for Fire Research at the National Institute of Standards and Technology has studied the impact of both smoke alarms and sprinklers in residential occupancies^{4,5}, and estimates that:

1. When fire sprinklers alone are installed in a residence, the chances of dying in a fire are reduced by 69%, when compared to a residence without sprinklers.
2. When smoke alarms alone are installed in a residence, a reduction in the death rate of 63% can be expected, when compared to a residence without smoke alarms.
3. When both smoke alarms and fire sprinklers are present in a home, the risk of dying in a fire is reduced by 82%, when compared to a residence without either.

Much has been written about the reduction of residential fire deaths due to improvements in building codes and the installation of smoke alarms. Without a doubt, these have had a substantial impact on the home fire problem. The annual number of fire deaths in residential occupancies continues to decline. The trend in fire death data, however, shows that the number of residential fire deaths is declining at a slower rate over the past 10 years than it did in the period 1977 through 1995.

Full-scale fire tests in residential settings suggest an explanation for this slowing in the rate of decline in residential fire deaths. The available time to escape a flaming fire in a home has decreased significantly (*i.e.*, from 17 ± 6 minutes in 1975 to $3 \pm \frac{1}{2}$ minute in 2003)⁶. This decrease in time to escape has been attributed to the difference in fire growth rates of the representative samples of home furnishings used in the two studies⁶. In short, it appears that a fire involving modern furnishings grows faster than a fire involving older furnishings. The practical impact of this finding is clear – smoke alarms alone may not provide a warning in time for occupants to escape a home fire.



Commonwealth Chief



2007 Virginia Fire Incident Reporting System (VFIRS)

Quick Facts¹

As of 01/09/2008

6% fire
94% other

- Somewhere in Virginia, every minute, a fire department responded to an incident – Fire departments responded to an average of 1,238 incidents each day. There were on average 777 EMS responses, 73 fire responses, and 387 other responses each day.

- The demand for the fire service has expanded; the fire service does more than put out fires – Sixty-three (63) percent of the incidents were emergency medical or rescue calls; 9% were good intent calls; 8% were non-malicious false calls, 7% were service calls, 6% were fire calls, 5% were hazardous condition calls, and 2% were other calls.

- Fire injuries and fire deaths happen more than you might expect – On an average, every 5 hours, 14 minutes someone was hurt or died as a result of fire; 558 fire injuries or deaths were reported in 2007.

- Fire damage to property can be costly – Total fire dollar loss was \$434.5 Million; 414 incidents had a total dollar loss of \$50,000 or more.

- Rescue Calls - Forty (40) percent of EMS incidents occurred in a 1-or-2 family dwelling home, 17% occurred on highways, streets, road or parking areas, and 6% occurred in nursing homes.

- Cooking - For residential structure fires in which the cause was known, 38% of the fires were due to cooking and accounted for 44% of the civilian injuries.

- Smoking accounted for 17% of civilian deaths in residential structure fires in which the cause was known.

- Grass, Brush Fires – Thirty-three (33) percent or one-third of the total fires reported in 2007 were natural vegetation fires while structure fires accounted for

29%

- Even though deliberately set fires or suspicious fires account for a low percentage of residential structure fires, the effects are devastating – Incendiary or suspicious fires contributed to 61% of total dollar loss in residential structure fires when cause was known – \$87.7 Million in 2007 and 52% of civilian deaths.

¹ Totals for Calendar Year 2007 will not be finalized until April 1, 2008. For questions about VFIRS, call Marion A. Long, VFIRS Program Manager, (804) 371-0220.

903.2.1.2 Group A-2. An automatic sprinkler system shall be provided for Group A-2 occupancies where one of the following conditions exists:

1. The fire area exceeds 5,000 square feet (465 m²);
2. The fire area has an occupant load of 100 or more in night clubs or 300 or more in other Group A-2 occupancies; or
3. The fire area is located on a floor other than the level of exit discharge.

Change Item 2 of Section 903.2.1.3 of the IBC to read:

2. In Group A-3 occupancies other than churches, the fire area has an occupant load of 300 or more.

Change Section 903.2.7 of the IBC to read:

903.2.7 Group R. An automatic sprinkler system installed in accordance with Section 903.3 shall be provided throughout all buildings with a Group R fire area, except in the following R-2 occupancies when the necessary water pressure or volume, or both, for the system is not available:

Exceptions:

1. Buildings which do not exceed two stories, including basements which are not considered as a story above grade, and with a maximum of 16 dwelling units per fire area. Each dwelling unit shall have at least one door opening to an exterior exit access that leads directly to the exits required to serve that dwelling unit.
2. Buildings where all dwelling units are not more than two stories above the lowest level of exit discharge and not more than one story below the highest level of exit discharge of exits serving the dwelling unit and a two-hour fire barrier is provided between each pair of dwelling units. Each bedroom of a dormitory or boarding house shall be considered a dwelling unit under this exception.

Add Section 903.3.1.2.2 to the IBC to read:

903.3.1.2.2 Attics. Sprinkler protection shall be provided for attics in buildings of Type III, IV or V construction in Group R-2 occupancies that are designed, or developed and marketed to senior citizens, 55 years of age or older and in Group I-1 occupancies in accordance with Section 6.7.2 of NFPA 13R.

Change Section 903.4.2 of the IBC to read:

903.4.2 Alarms. Approved audible devices shall be connected to every automatic sprinkler system. Such sprinkler water-flow alarm devices shall be activated by water flow equivalent to the flow of a single sprinkler of the smallest orifice size installed in the system. Alarm devices shall be provided on the exterior of the building in an approved location. Where a fire alarm system is installed, actuation of the automatic sprinkler system shall actuate the building fire alarm system. Group R-2 occupancies that contain 16 or more dwelling units or sleeping units; or any dwelling unit or sleeping unit two or more stories above the lowest level of exit discharge; or any dwelling unit or sleeping unit more than one story below the highest level of exit discharge of exits serving the dwelling unit or sleeping unit, shall provide a manual fire alarm box at an approved location to activate the suppression system alarm.

Add an exception to Section 905.2 of the IBC to read:

Exception: The residual pressure of 100 psi for 2½ inch hose connection and 65 psi for 1½ inch hose connection is not required in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 and where the highest floor level is not more than 150 feet above the lowest level of fire department vehicle access.

Change Section 906.1 of the IBC to read:

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

Code Change Form for the 2009 Code Change Cycle

Code Change Number: _____

Proponent Information

(Check one): Individual Government Entity Company

Name: ML Toalson

Representing: HBAV

Mailing Address: _____

Email Address: _____

Telephone Number: _____

Proposal Information

Code(s) and Section(s): 2009 IRC R313.1, 313.2. Delete in their entirety the mandate for automatic fire sprinkler systems.

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

Supporting Statement (including intent, need, and impact of the proposal): NFPA data and reports confirm that sprinklers do reduce deaths, injuries and property damage loses. Will hard-wired smoke detectors, fire-proof cigarettes, bedroom arc-fault devices and other improvements in our USBC and referenced model codes achieve the same results over the next 20 or 30 years to reduce deaths in 1 and 2 family homes? Over the past 9 years Virginia fire data, produced by the VDFP, indicated there were 341 civilian deaths and 2 firefighter deaths. This is an average of 38 deaths per year. Many of these fires and deaths maybe in older homes that might not even today have operable smoke detectors. Should we not concentrate first on seeing smoke detectors installed in every existing home? Would better property maintenance and fire prevention enforcement and education achieve positive results as well when many of the fire deaths seemed to be elderly persons? The cost of mandated sprinklers seems to lie somewhere between \$1.61 and \$4.00 per square foot. What would be the impact on affordable housing that could include manufactured housing and homes not on public water systems? On average 30,000 homes are constructed annually in Virginia, other than in our current economic condition of dismal home construction activity. So if the cost per home to meet the sprinkler mandate is \$3,000 to \$5,000, then the annual cost would be 90 to 150 million dollars and if it took 20 years to reduce deaths by 20 to 30 persons per year, then the cost would be 1.8 to 3.0 billion dollars. Are there other less expensive and just as effective options? When the economy has severely impacted the housing construction industry is this the time to mandate sprinklers while at the same time more stringent energy code requirements and other new requirements in the IRC are also increasing the construction cost of homes by several more thousands of dollars? Would a more prudent approach be, if not deleting the mandate, to allow the standards to be left in the IRC as an option and to allow the public more time to digest thoroughly whether to mandate sprinklers?

Submittal Information

Date Submitted: _____

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

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

Code Change Form for the 2009 Code Change Cycle

Code Change Number: _____

Proponent Information

(Check one): Individual Government Entity Company

Name: ML Toalson

Representing: HBAV

Mailing Address: _____

Email Address: _____

Telephone Number: _____

Proposal Information

Code(s) and Section(s): 2009 IRC R313.1, 313.2.

Substitute R313.1 **Townhouse automatic fire sprinkler systems. Notwithstanding the requirements of Section 103.8, where installed, an automatic residential fire sprinkler system for townhouses shall be designed and installed in accordance with NFPA 13D or Section P2904.**

Exception: same text

R313.1.1 (Delete)

Substitute R313.2 **One-and two-family dwellings automatic fire sprinkler systems. Notwithstanding the requirements of Section 103.8, where installed, an automatic residential fire sprinkler system shall be designed and installed in accordance with NFPA 13D or Section P2904.**

Exception (same text)

R313.2.1 Delete in entirety.

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

Supporting Statement (including intent, need, and impact of the proposal): NFPA data and reports confirm that sprinklers do reduce deaths, injuries and property damage loses. Will hard-wired smoke detectors, fire-proof cigarettes, bedroom arc-fault devices and other improvements in our USBC and referenced model codes achieve the same results over the next 20 or 30 years to reduce deaths in 1and 2 family homes? Over the past 9 years Virginia fire data produced by the VDFP indicated there were 341 civilian deaths and 2 firefighter deaths. This is an average of 38 deaths per year. Many of these fires and deaths maybe in older homes that might not even today have operable smoke detectors. Should we not concentrate first on seeing smoke detectors installed in every existing home? Would better property maintenance and fire prevention enforcement and education achieve positive results as well when many of the fire deaths seemed to be elderly persons? The cost of mandated sprinklers seems to lie somewhere between \$1.61 and \$4.00 per square foot. What would be the impact on affordable housing that could include manufactured housing and homes not on public water systems? On average 30,000 homes are constructed annually in Virginia so if the cost per home to meet the sprinkler mandate is \$3,000 to \$5,000 then the annual cost would be 90 to 150 million dollars and if it took 20 years to reduce deaths by 20 to 30 persons per year, then the cost would be 1.8 to 3.0 billion dollars. Are there other less expensive and just as effective options? When the economy has severely impacted the housing construction industry is this the time to mandate sprinklers while at the same time more stringent energy code requirements and other new requirements in the IRC are also increasing the construction cost of homes by several more thousands of dollars? Would a more prudent approach be, if not deleting the mandate, to allow the standards to be left in the IRC as an option for this cycle to see and allow some time for the public to digest this issue more thoroughly before we mandate sprinklers?

May 18, 2009

Virginia Board of Housing and Community Development
The Jackson Center
501 N. Second Street
Richmond, VA 23219

Re: Fire Sprinklers

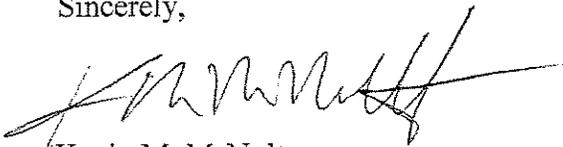
Members of the Board:

I am writing today to urge you to NOT to mandate installation of fire sprinklers in Virginia. Codes that have mandated hardwired smoke alarms, improved electrical systems and tighter envelope construction have worked to dramatically reduce fire related injuries and deaths in newer construction. In fact, From 1979-2003 the death rate per million persons from house fires dropped 58 percent, according to the U.S. Centers for Disease Control. That trend will continue as more new housing stock is built, stronger building codes are enacted and especially as smoke alarm maintenance by homeowners improves.

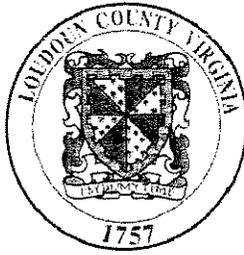
Smoke alarms, not fire sprinklers, are the most effective and cost efficient method of protecting Virginia's families in their homes from the threat of fire. A 2006 study by the U.S. Fire Association (USFA) on the presence of working smoke alarms in residential fires from 2001-2004 showed that 88 percent of the fatal fires in single-family homes occurred where there were no working smoke alarms. USFA and NFPA data continue to show that the vast majority of home fire fatalities occur when there are no operational smoke alarms. The most recent NFPA report on smoke alarms estimates that more than 890 lives could be saved annually if every home had a working smoke alarm. From 2000-2004, 65 percent of the fire fatalities reported occurred in homes where smoke alarms were not present or were present and did not operate.

The mandated use of fire sprinklers in new construction will make new homes even more expensive, and will drive families to purchase and live in older structures that do not have the current requirements for new construction, such as modern smoke detectors.

Sincerely,



Kevin M. McNulty
1300 Woodhugh Place
Colonial Heights, VA 23834



Loudoun County, Virginia

www.loudoun.gov

Board of Supervisors

1 Harrison Street, S.E., MSC #1, 5th Floor, P.O. Box 7000, Leesburg, VA 20177-7000
Telephone (703) 777-0204 • Fax (703) 777-0421 • email: bos@loudoun.gov

December 2, 2008

Board of Housing and Community Development
The Jackson Center
501 North Second Street
Richmond, VA 23219-1321
Attention: Mr. Tom Fleury, Chairman

Dear Chairman Fleury,

Recent action by the voting members at the International Code Council (ICC) in Minneapolis, MN has resulted in a residential sprinkler requirement for all new one- and two- family homes and townhouses. The new residential sprinkler mandate will appear in the 2009 International Residential Code (IRC), which will be published by the end of Calendar Year 2008.

Within Virginia, these requirements are subject to review and adoption by the Commonwealth of Virginia's Board of Housing and Community Development (BHCD), as a component of the regular code update process. This review is slated to begin in March 2009.

It is the desire of the Loudoun County Board of Supervisors that the BHCD adopt the new residential sprinkler mandate when it updates the 2009 IRC for Virginia. Our local fire and building staff will be actively involved in supporting this important code change throughout the upcoming review period; and they will report back to the Board of Supervisors on the progress of this critical issue.

Residential sprinklers have long been advocated by the nation's fire service as a means to significantly reduce loss of life and injury in home fires. Whereas the requirement of smoke alarms in homes has resulted in a dramatic decline in residential fire deaths over the last three decades, more than 3,000 people die each year from home fires. Statistics show that a home fire occurs in the United States every 80 seconds, and residential sprinklers are the only fire protection technology that works to control the fire, reduce the production of deadly heat and fire gases, and provide occupants precious time to escape a potentially deadly environment. Recent studies have also demonstrated that residential sprinklers are much more affordable than in years past, especially when installed as part of new construction.

On behalf of the Board of Supervisors, I look forward to positive action by the BHCD toward the implementation of residential sprinkler requirements in Virginia. Please feel free to contact me if you have any questions concerning this issue.

Sincerely,

Scott K. York
Chairman, Loudoun County Board of Supervisors

Fire Data & Statistics

Fire Summary Data, Virginia, 2003 - 2008

Year	Number of Fires	Civilian Fire Deaths	Civilian Fire Injuries	Fire Service Deaths	Fire Service Injuries	Total Fire Dollar Loss
2008*	29,393	80	474	1	335	\$444,800,936
2007**	34,054	82	455	1	236	\$411,808,565
2006	31,538	96	436	0	297	\$253,711,953
2005	27,649	68	403	1	309	\$487,375,093
2004	25,453	120	506	1	247	\$218,672,354
2003	22,674	71	499	0	255	\$306,059,874

*Report date 04/07/09

**Report date 05/19/08

Disclaimer - Source Virginia Fire Incident Reporting System - This information is subject to change as we continuously receive new data.



Fire Data & Statistics

Fire Summary Data, Virginia, 2003 - 2008

Year	Number of Fires	Civilian Fire Deaths	Civilian Fire Injuries	Fire Service Deaths	Fire Service Injuries	Total Fire Dollar Loss
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*Report date 04/07/09

**Report date 05/19/08

Disclaimer - Source Virginia Fire Incident Reporting System - This information is subject to change as we continuously receive new data.

Additional Statistics:

2008 Statistics

- [2008 Virginia Fire Dollar Loss and Property Saved](#)
- [1-or-2 Family Dwelling Fire Study \(Jan 2000 - Sep 2008\)](#)
- [2008 Virginia Fires Involving Lighters](#)
- [2008 Summary by Incident Type](#)
- [2008 Fire Department Incident Counts by County/City](#)
- [2008 Fire Department Monthly Incident Counts](#)
- [2008 Tally by Incident Type](#)
- [2008 Tally by Property Use](#)
- [2008 Residential Structure Fire Causes](#)
- [2008 1-or-2 Family Dwelling Fires](#)
- [Virginia Civilian Fire Deaths, 2007-2008](#)

2007 Statistics

- [2007 Virginia Fires Involving Lighters](#)
- [2003-2007 High-Rise Building Fire Statistics.pdf](#)
- [2007 Residential Structure Fire Causes.pdf](#)
- [2007 Virginia Fire Incident Reporting System \(VFIRS\) Quick Facts.pdf](#)
- [2007 Fire Department Monthly Incident Counts.pdf](#)
- [2007 Summary by Incident Type.pdf](#)

2006 Statistics

- [2006 VFIRS Participation by Locality.pdf](#)
- [2006 Tally by Property Use .pdf](#)
- [2006 Tally by Incident Type .pdf](#)
- [2006 Carbon Monoxide Incidents by Locality.pdf](#)
- [2006 Summary by Incident Type .pdf](#)
- [2006 VFIRS Dashboard .pdf](#)
- [2006 Residential Structure Fire Causes .pdf](#)
- [2006 Fire Department Monthly Incident Counts .pdf](#)
- [2006 Fire Department Incident Counts .pdf](#)

2005 Statistics

- [2005 Monthly Incident Count.pdf](#)
- [2005 Tally by Incident Type.pdf](#)
- [2005 Tally by Property Use.pdf](#)
- [2005 Summary by Incident Type.pdf](#)
- [2005 - Fires in Virginia Nursing Homes and Care Facilities-.pdf](#)
- [2000 -2005 VA Fire Deaths by Locality.pdf](#)

[Click Here for Additional Statistics](#)

[Back to top](#)

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

Code Change Form for the 2009 Code Change Cycle

Code Change Number: _____

Proponent Information

(Check one): Individual Government Entity Company

Name: John D. Bruce

Representing: Dominion Virginia Power

Mailing Address: 9th floor, One James River Plaza, 701 East Cary Street, Richmond, VA 23219

Email Address: john.bruce@dom.com

Telephone Number: (804) 775-5301

Proposal Information

Code(s) and Section(s): USBC 102.3(1)

Proposed Change (including all relevant section numbers, if multiple sections):
Revise the the third sentence of Section 102.3(1) of the Virginia Uniform Statewide Building Code to read as follows:

Such exempt equipment and wiring shall be located on either public rights-of-way or private property for which the service provider has rights of occupancy and entry or by other agreements either designated by or recognized by, the Virginia State Corporation Commission; however, the structures...

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

The 2008 NEC 90.2(B)(5)b deleted the words "by other agreements" contained in the same section in the 2005 NEC. This change affects the utility exemption from the NEC. Electric utilities rely on "other agreements" to install area lighting as well as distribution facilities on State and Federal lands. The National Electrical Safety Code is the appropriate code for electric utilities.

Although the Virginia USBC does not adopt section 90 of the National Electric Code, it is necessary to revise the USBC to ensure electric distribution facilities are constructed to the National Electrical Safety Code. and to preclude any suggestion that the USBC does or should adopt the change in approach reflected in the 2008 NEC.

An ad hoc committee has been created consisting of members from IEEE(NESC) and NFPA (NEC) to harmonize the Scope and Purpose of both the NEC and NESC. Change proposals are being submitted to revise section 90 of the 2011 NEC.

Submittal Information

Date Submitted: May 4, 2009

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 TASO (Technical Assistance and Services Office)
The Jackson Center
501 N. 2nd Street
Richmond, VA 23219-1321

Email Address: taso@dhcd.virginia.gov
Fax Number: (804) 371-7092
Phone Numbers: (804) 371-7140 or (804) 371-7150



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

Code Change Form for the 2009 Code Change Cycle

Code Change Number: _____

Proponent Information

(Check one): Individual Government Entity Company

Name: Ron Clements

Representing: Chesterfield County Building Inspection Dept.

Mailing Address: 9800 Government Center Parkway

Email Address: clementsro@chesterfield.gov

Telephone Number: (804) 751-4163

Proposal Information

Code(s) and Section(s): 102.3

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

Manufacturing and processing machines that do not produce or process hazardous materials regulated by this code, including all of the following service equipment associated with the manufacturing or processing machines.

- 2.1. Electrical equipment connected after the last disconnecting means.
- 2.2. Plumbing piping and equipment connected after the last shutoff valve or backflow device and before the equipment drain trap.
- 2.3. Gas piping and equipment connected after the outlet shutoff valve.

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

The IBC and IFC regulate hazardous materials used in process. Some examples are: dust collect systems, flammable finish application, organic coating processes, solvent based dry cleaning, combustible dust processes, semiconductor fabrication, woodworking processes/operations, Industrial ovens, tire rebuilding, welding, aerosol production, combustible fiber processing, compressed gases, cryogenic process, explosives and fireworks production, flammable or combustible liquid production or use, solvent dip tanks, kitchen cooking equipment.

If the code regulates storing 500 gallons of a class 1B solvent in a drum in the warehouse should not the code also regulate 500 gallons of solvent used in an industrial machine that uses the solvent to clean product? If the solvent cleaning machine creates a classified electrical location around the machine should the electrical connections be exempt? This is a big issue for industrial buildings using hazardous materials in process. This current exemption can be interpreted to exempt all of the hazardous materials provisions of the IBC and IFC whenever the hazardous material is used in or in conjunction with a manufacturing and process machine. I believe the intent is not to exempt regulating hazardous materials but to exempt regulating the machinery itself.

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 TASO (Technical Assistance and Services Office)

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

Code Change Form for the 2009 Code Change Cycle

Code Change Number: _____

Proponent Information

(Check one): Individual Government Entity Company

Name: Ron Clements

Representing: Chesterfield County Building Inspection Dept.

Mailing Address: 9800 Government Center Parkway

Email Address: clementsro@chesterfield.gov

Telephone Number: (804) 751-4163

Proposal Information

Code(s) and Section(s): 102.3 Exemptions

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

Add the following Exemption to section 102.3:

7. Federally owned buildings and structures unless federal law specifically requires a permit from the locality.

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

Though it has been a widely held interpretation that buildings and structures owned by the Federal government are exempt from the building code it is not expressly stated in the VA Uniform Statewide Building code. Federal buildings are constructed under the authority of the US Government's General Services Administration and GSA policy section 1.3 states that under federal law (Public Law 100-678 sec. 21) buildings built on federal property are exempt from state and local building codes.

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 TASO (Technical Assistance and Services Office)
The Jackson Center
501 N. 2nd Street
Richmond, VA 23219-1321

Email Address: taso@dhcd.virginia.gov
Fax Number: (804) 371-7092
Phone Numbers: (804) 371-7140 or (804) 371-7150

DEPT. OF HOUSING AND COMMUNITY DEVELOPMENT REGULATORY CHANGE FORM

<p>Address to submit to:</p> <p>DHCD, the Jackson Center 501 North Second Street Richmond, VA 23219-1321</p> <p>Tel. No. (804) 371 – 7150 Fax No. (804) 371 – 7092 Email: bhcd@dhcd.state.va.us</p>	<p style="text-align: center;">Last revised 4/28/2009</p>	<p>Document No. _____</p> <p>Committee Action: _____</p> <p>BHCD Action: _____</p>		
<table><tr><td><p>Submitted by: Representing: Address: Phone No.: Regulation Title:</p></td><td><p>Chuck Bajnai Chesterfield County 9800 Government Parkway, Chesterfield, VA 23832 (804) 717-6428 2006 IRC</p></td></tr></table> <div style="text-align: center; border: 1px solid black; padding: 5px; margin: 10px auto; width: fit-content;"><p>VCC, Section 103.2 Application of Code</p></div>			<p>Submitted by: Representing: Address: Phone No.: Regulation Title:</p>	<p>Chuck Bajnai Chesterfield County 9800 Government Parkway, Chesterfield, VA 23832 (804) 717-6428 2006 IRC</p>
<p>Submitted by: Representing: Address: Phone No.: Regulation Title:</p>	<p>Chuck Bajnai Chesterfield County 9800 Government Parkway, Chesterfield, VA 23832 (804) 717-6428 2006 IRC</p>			

Proposed Change:

103.2. When applicable to new construction. Construction for which a permit application is submitted to the local building department after May 1, 2008, shall comply with the provisions of this code, except for permit applications submitted during a one-year period after May 1, 2008. The applicant for a permit during such one-year period shall be permitted to choose whether to comply with the provisions of this code or the provisions of the code in effect immediately prior to May 1, 2008 however, if no choice is made, then the code in effect immediately prior to May 1, 2008 shall be used. This provision shall also apply to subsequent amendments to this code based on the effective date of such amendments. In addition, when a permit has been properly issued under a previous edition of this code, this code shall not require changes to the approved construction documents, design or construction of such a building or structure, provided the permit has not been suspended or revoked.

Reason Statement:

The suggested revision establishes the old code as the default code for twelve months while in transition period (subject to change by the BHCD). It still would allow the submitter to use the newer code if he/she finds it advantageous.

This is important. During the past twelve month transition period (May 1, 2008 to April 30, 2009), Chesterfield County had approximately 900 new house applications and only 6 used the new code – all the others were submitted under the old code. This revision stipulates that if no action is taken to the contrary, the submitter will automatically be under the old code during the transition. This will help all of the contractors, and remove the doubt from the plan reviewers.

DEPT. OF HOUSING AND COMMUNITY DEVELOPMENT REGULATORY CHANGE FORM
 (Use this form to submit changes to building and fire codes)

Address to submit to: DHCD, the Jackson Center 501 North Second Street Richmond, VA 23219-1321 Tel. No. (804) 371 – 7150 Fax No. (804) 371 – 7092 Email: bhcd@dhcd.state.va.us		Document No. _____ Committee Action: _____ BHCD Action: _____
Submitted by: Ray Pylant Representing: Fairfax County Address: 12055 Govt. Ctr. Pky, Fairfax, Va. 22035 Phone No.: 703-324-1910 Regulation Title: <u>Virginia New Construction Code – 2009 IBC Section</u> Section No(s): 103.5		
Proposed Change: Delete exception # 2 in its entirety.		
Supporting Statement: The current exception allows dangerous guardrail designs to continue even when the hazard is understood and documented. If a particular guardrail pattern is needed to maintain architectural compatibility with the rest of the structure, or with adjacent properties, that design could be approved through the code modification process, provided the design is deemed safe and structurally sound. The current code provision effectively prevents the Building Official from requiring correction of an unsafe guardrail condition.		

DEPT. OF HOUSING AND COMMUNITY DEVELOPMENT REGULATORY CHANGE FORM

(Use this form to submit changes to building and fire codes)

<p>Address to submit to:</p> <p>DHCD, the Jackson Center 501 North Second Street Richmond, VA 23219-1321</p> <p>Tel. No. (804) 371 – 7150 Fax No. (804) 371 – 7092 Email: bhcd@dhcd.state.va.us</p>		<p>Document No. _____</p> <p>Committee Action: _____</p> <p>BHCD Action: _____</p>
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Submitted by: John Catlett Representing: City of Alexandria

Address: 301 King Street, Alexandria, Va, 22314 Phone No.: (703.838.4360)

Regulation Title: Virginia New Construction Code Section No(s): 103.5

Proposed Change:

103.5 Reconstruction, alteration or repair. The following criteria is applicable to reconstruction, alteration or repair of buildings or structures:

1. Any reconstruction, alteration or repair shall not adversely affect the performance of the building or structure, or cause the building or structure to become unsafe or lower existing levels of health and safety.
2. Parts of the building or structure not being reconstructed, altered or repaired shall not be required to comply with the requirements of this code applicable to newly constructed buildings or structures.
3. The installation of material or equipment, or both, that is neither required nor prohibited shall only be required to comply with the provisions of this code relating to the safe installation of such material or equipment.
4. Material or equipment, or both, may be replaced in the same location with material or equipment of a similar kind or capacity.

Exceptions:

1. This section shall not be construed to permit noncompliance with any applicable flood load or flood-resistant construction requirements of this code.
2. Reconstructed decks, balconies, porches and similar structures located 30 inches (762 mm) or more above grade shall meet the current code provisions for structural loading capacity, connections and structural attachment. This requirement excludes handrails and guardrails.
3. When a floor, wall or ceiling is replaced as part of an alteration, and the current building code requires a fire rated floor, wall, or ceiling assembly, that portion (and only that portion) of the floor, wall or ceiling being replaced shall meet the current code requirements for the fire resistant rating. When it is impractical to meet the full fire resistant rating due to existing construction constraints, the building official shall allow the use of IBC Section 720 - PRESCRIPTIVE FIRE RESISTANCE to the maximum extend practical.

Supporting Statement: The USBC generally has protected building owner from having to comply with current regulations in an existing building when undergoing a repair or alteration. However, it has always required the use of code compliant material in those situations. Language was found in the 1981 USBC, Section 120.3 Alterations that stated, "*Subsequent reconstruction, renovation or repair of buildings may be made without requiring the remainder of the existing building to comply with the requirements of the USBC, provided such alterations shall conform to that required for a new building. Such work shall not adversely affect the performance of the building or cause it to become unsafe. Alterations which are non-structural and do not adversely affect any structural member in the building or any part of the building required to have a fire resistance rating may be made with the same materials.*"

This provision was changed in the 1984 USBC to language closer to what exist today, exempting a repair from having to comply with the current building code provision and being replaced with in kind material.

There are significant reasons to go back to the concept that floor, walls, or ceilings that now require fire rated assemblies in more modern building codes that may have not been required in buildings built before the USBC or before the USBC required them. At the point of repair or alteration, this can be accomplished at a reasonable cost. Many projects include the complete removal of a finish material that may or may not have complied with the fire resistive rating, but it is not documented. For example, many town houses will undergo a complete renovation where interior finishes are completely removed. This would be the opportune time to replace the wall finishes on the common wall between dwelling units with fire rated products meeting the current code requirements on the portion of the wall where the finish material was removed.

It should be noted that in the example above, only the portion of the wall where the wall finish is removed would be replaced with fire rated material. The opposite side of the wall that is not being disturbed would not be affected. The second part of the code change would address situations such as where the existing framing would not be adequate to meet the current requirements for a rated wall assembly. The code official could recognize the effort to improve the fire resistant rating while not meeting the exact letter of the code.

It should be noted that Level 2 alterations in the International Existing Building Code trigger similar requirements.

DEPT. OF HOUSING AND COMMUNITY DEVELOPMENT REGULATORY CHANGE FORM

(Use this form to submit changes to building and fire codes)

<p>Address to submit to:</p> <p>DHCD, the Jackson Center 501 North Second Street Richmond, VA 23219-1321</p> <p>Tel. No. (804) 371 – 7150 Fax No. (804) 371 – 7092 Email: bhcd@dhcd.state.va.us</p>		<p>Document No. _____</p> <p>Committee Action: _____</p> <p>BHCD Action: _____</p>
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Submitted by: John Catlett Representing: City of Alexandria

Address: 301 King Street, Alexandria, Va, 22314 Phone No.: (703.838.4360)

Regulation Title: Virginia New Construction Code Section No(s): 1

Proposed Change:

104.1 Scope of enforcement. ...

... Upon a finding by the local building department, following a complaint by a tenant, occupant or a third party that has knowledge of a residential rental unit that is the subject of such complaint, that there may be a violation of the unsafe structures provisions of Part III of the Virginia Uniform Statewide Building Code, also known as the "Virginia Maintenance Code," the local building department shall enforce such provisions.

If the local building department receives a complaint that a violation of the Virginia Maintenance Code exists that is an immediate and imminent threat to the health or safety of the owner or tenant of a residential dwelling unit or a nearby residential dwelling unit, and the owner or tenant of the residential dwelling unit that is the subject of the complaint has refused to allow the local building official or his agent to have access to the subject dwelling, the local building official or his agent may present sworn testimony to a court of competent jurisdiction and request that the court grant the local building official or his agent an inspection warrant to enable the building official or his agent to enter the subject dwelling for the purpose of determining whether violations of the Virginia Maintenance Code exist. The local building official or his agent shall make a reasonable effort to obtain consent from the owner or tenant of the subject dwelling prior to seeking the issuance of an inspection warrant under this section. . .

Supporting Statement: The provision, as it exists today, only allows a tenant occupant to complain about an unsafe condition in a building or structure. Although there appears to be a reference to owners and tenants in the second paragraph, there is no reference in the first beyond the tenant.

The local building official has no options to enforce any regulation or secure an unsafe structure under the New Construction Code. Many times complaints come from neighbors or others that have observed an unsafe condition. These can be observation of an existing building open at window or door or the failure or failure of a structure visible from the exterior. The above wording would allow the building official to respond to complaints regarding unsafe conditions (only as defined) regardless of there source.

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

Code Change Form for the 2009 Code Change Cycle

Code Change Number: _____

Proponent Information

(Check one): Individual Government Entity Company

Name: Ron Clements

Representing: Chesterfield County Building Inspection Dept.

Mailing Address: 9800 Government Center Parkway

Email Address: clementsro@chesterfield.gov

Telephone Number: (804) 751-4163

Proposal Information

Code(s) and Section(s): 108.2 Exemptions from application from permit.

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

Alter the following Exemption to section 108.2:

- ~~2. Detached accessory structures used as tool and storage sheds, playhouses or similar uses, provided the floor area does not exceed 150 square feet (14m²) and the structures are not accessory to a group F or H occupancy.~~
Detached accessory structures that are 150 square feet (14m²) or less in area and are not a Group H occupancy.

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

This change removes the non-specific, commentary style, language from the exemption and clearly states that the structure itself cannot be a high hazard occupancy.

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 TASO (Technical Assistance and Services Office)
The Jackson Center
501 N. 2nd Street
Richmond, VA 23219-1321

Email Address: taso@dhcd.virginia.gov
Fax Number: (804) 371-7092
Phone Numbers: (804) 371-7140 or (804) 371-7150



DEPT. OF HOUSING AND COMMUNITY DEVELOPMENT REGULATORY CHANGE FORM

(Use this form to submit changes to building and fire codes)

Address to submit to: DHCD, the Jackson Center 501 North Second Street Richmond, VA 23219-1321 Tel. No. (804) 371 – 7150 Fax No. (804) 371 – 7092 Email: bhcd@dhcd.state.va.us		Document No. _____ Committee Action: _____ BHCD Action: _____
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Submitted by: John Catlett Representing: VBCOA

Address: 401 Lafayette Street, Williamsburg VA 23185 Phone No.: (757) 220-6135

Regulation Title: Virginia New Construction Code Section No(s): 108.2

Proposed Change:

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

1. -7 Unchanged

8. Ordinary repairs not including (i) the cutting away of any wall, partition or portion thereof; (ii) the removal or cutting of any structural beam or loadbearing support; (iii) the removal or change of any required means of egress; (iv) the rearrangement of parts of a structure affecting the egress requirements; (v) the addition to, alteration of, replacement of or relocation of any standpipe, water supply, sewer, drainage, drain leader, gas or oil, soil, waste, vent or similar piping, electric wiring or mechanical work; or (vi) any other work affecting public health or general safety. However, ordinary repairs shall include, but are not limited to, the following:

8.1. Either within the dwelling unit in Group R-2 occupancies that are four stories or less in height or in Group R-3, R-4 and R-5 occupancies, ~~or both~~, replacement of (i) either mechanical or plumbing equipment or appliances, or both, provided such equipment or appliances are not fueled by gas or oil; (ii) floor coverings or porch flooring, or both; and (iii) windows, doors **that do not require a fire rating**, electrical switches, electrical outlets, light fixtures or ceiling fans **in their same location without the addition or extension of drainage and vent lines/water supply lines or branch circuits**.

8.2 Replacement of plumbing fixtures, electrical switches, electrical outlets and light fixtures in their same location without the addition or extension of drainage and vent lines/water supply lines or branch circuits in all use groups except H or dwelling units in an R-2 that are four story or less, R-3, R-4 and R-5 that are covered by provisions in 8.1.

8.2.3 In Group R-3, R-4 or R-5 occupancies, replacement of either roof coverings or siding or the installation of siding, or both, provided the buildings or structures are not subject to wind speeds greater than 100 miles per hour (160 km/hr), determined in accordance with applicable requirements of this code.

8.4 Replacement of roof sheathing as part of a re-roofing up to and including 100 sq. ft. unless it was required at time of original construction to be noncombustible or fire retardant treated (FRT) sheathing material

8.5 Roofing in use groups R-1, R-2 and all non-residential use groups up to and including 100 sq. ft. in all wind zones.

8.3.6 Installation of cabinets... **(Change submitted to this section.)**

9. -10. Unchanged

Supporting Statement:

8.1: Current language does not recognize that corridor doors in some R-2 occupancies may require a fire resistant rating. Language clarifies that these doors, although some may interpret that these doors are located within a dwelling unit, require permit and inspection to make sure that the appropriate labeled door, frame and hardware are reinstalled when necessary to maintain a required fire rating. The second part of this change is to clarify that the replacement of the exempted residential fixtures and equipment does not include the addition of other regulated items that would require permit and inspection.

8.2: The new 8.2 language reflects actual practice in the field. Although the replacement of equipment (exempted in 8:1 for residential occupancies) should be regulated as there may be required safety or protection features that are field installed, individual electrical devices being replaced that do not requiring additional wiring and plumbing fixtures that are placed back on existing plumbing piping are not routinely permitted and inspected.

8.4: The addition of this language is intended to clarify that roof sheathing is not the same as roof finish replacement. It is not uncommon to replace damaged or rotted sheathing as part of a roof replacement. However, the sheathing forms part of the structure and can be an important part of the building design. Many roof replacements at townhouses and other residential occupancies involve replacing deteriorated FRT plywood in a 4 foot area adjacent to fire walls between units. This practice has been used for many years to replace parapet fire walls. Typically, permits are not received and the material replaced with non FRT plywood. The resulting laps in the required fire preventive material can lead to the spread of fire between units.

8.5 Establishes a threshold between ordinary repairs and roof replacement that requires permits in the referenced use groups.

DEPT. OF HOUSING AND COMMUNITY DEVELOPMENT REGULATORY CHANGE FORM

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<p>Address to submit to:</p> <p>DHCD, the Jackson Center 501 North Second Street Richmond, VA 23219-1321</p> <p>Tel. No. (804) 371 – 7150 Fax No. (804) 371 – 7092 Email: bhcd@dhcd.state.va.us</p>		<p>Document No. _____</p> <p>Committee Action: _____</p> <p>BHCD Action: _____</p>
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Submitted by: John Catlett Representing: City of Alexandria

Address: 301 King Street, Alexandria, Va, 22314 Phone No.: (703.838.4360)

Regulation Title: Virginia New Construction Code Section No(s): 1

Proposed Change:

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

10. Ordinary repairs that include the following.

10.1. Replacement of windows and doors with same operation and opening dimensions, and that are not required to be fire rated in Group R-2 where serving a single dwelling unit and in Groups R-3, R-4 and R-5. . . .

Supporting Statement: This code change should provide clarity as to that application of this exemption from permits. Many code officials have asked if emergency egress windows or replacement to a different material type window would require permits. This would clarify that as long as the window operates the same and has the same size opening, it would be exempt from permits. This would not exempt the change to a different window type such as changing a sliding casement window to a double hung window as the opening size may be decreased. This shall maintain the premise of Section 103 to not lower existing levels of health and safety.

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

Code Change Form for the 2009 Code Change Cycle

Code Change Number: _____

Proponent Information (Check one): Individual Government Entity Company

Name: J. Kenneth Payne, Jr., AIA Representing: VSAIA

Mailing Address: 3200 Norfolk Street, Richmond, Virginia 23230

Email Address: kpayne@moseleyarchitects.com Telephone Number: 804-794-7555

Proposal Information

Code(s) and Section(s): 2006 VCC Section 109.5 – Approval of construction documents

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

Add the following new subparagraphs:

109.5.1 Arrangement of egress. The construction documents shall show in sufficient detail the location, construction, size and character of all exits, together with the arrangement of aisles, corridors, passageways and hallways leading thereto in compliance with the provisions of this code.

109.5.2 Number of occupants. In other than occupancies in Use Groups R-2, R-3 and I-1, the construction documents and the application for a permit shall designate the number of occupants to be accommodated on every floor, and in all rooms and spaces that are required to have assigned occupant loads in accordance with Section 1004. Unless otherwise specified, the minimum number of occupants to be accommodated by the exits shall be determined by the occupant load prescribed in Section 1004. The occupant load of the building shall be limited to that number. The fire prevention code official shall be informed in writing of the calculated occupant load.

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

A code change was submitted (included below for reference) requesting "means of egress" be reintroduced into the VCC. The BOCA model code included similar language in Chapter 10. The BOCA requirements were relocated to Chapter 1 when the IBC was introduced. Virginia replaced Chapter 1 of the IBC with our own Chapter 1 in the VCC. These requirements did not make the transition and were not included in Chapter 1 of the VCC.

2009 IBC Chapter 1 text and previously submitted code change:

107.2.3 Means of egress. The construction documents shall show in sufficient detail the location, construction, size and character of all portions of the means of egress in compliance with the provisions of this code. In other than occupancies in Groups R-2, R-3, and I-1, the construction documents shall designate the number of occupants to be accommodated on every floor, and in all rooms and spaces.

Although egress information should be included in the Construction Documents, the 2009 version leaves too much to be interpreted, and extends to spaces that otherwise Section 1004 does not require an occupant load be assigned. As written in the 2009 IBC, "all portions of the means of egress" [emphasis added] must be addressed. By definition, *means of egress* includes exit access, exits, and exit discharge. It is the exit access (within every room and space) and exit discharge (which terminates at a *public way*) that causes concern and opens the door for the potential of different interpretations as to how a LAHJ would interpret showing "construction, size and character" of an office, classroom, sidewalk, curb, parking area, or street.

The second sentence in the 2009 IBC version requires the A/E to indicate occupant loads "in all rooms and spaces" [emphasis added]. LAHJ could interpret this to require every single room and space in the entire building be assigned an occupant load. However, not all rooms or spaces require an occupant load be assigned to them (e.g., corridors, toilets, janitor's closets, stairs, attics, crawl spaces, etc.).

If we had to provide an occupant load everywhere, we would also be required to provide more plumbing fixtures (\$\$\$), wider and more egress elements (\$\$\$), greater HVAC requirements (\$\$\$), more parking (\$\$\$)...or more of everything tied to the building occupancy loads.

This proposed change more closely parallels that of the original BOCA model code that Virginia used for many years (included below for reference).

1996 BOCA version:

1003.1 Arrangement of egress. The *construction documents* shall show in sufficient detail the location, construction, size and character of all *exits*, together with the arrangement of *aisles*, *corridors*, *passageways* and *hallways* leading thereto in compliance with the provisions of this code.

1003.2 Number of occupants. In other than occupancies in Use Groups R-2, R-3 and I-1, the *construction documents* and the application for a permit shall designate the number of occupants to be accommodated on every floor, and in all rooms and spaces as required by the code official. Unless otherwise specified, the minimum number of occupants to be accommodated by the *exits* shall be determined by the occupant load prescribed in Section 1008.0 [Occupant Load]. The posted occupant load of the building shall be limited to that number. The fire prevention code official shall be informed in *writing* of the calculated occupant load.

Rather than create an entirely new paragraph in the VCC (109.7), this proposed change becomes a subparagraph related to the *approval* of the construction documents.

Submittal Information

Date Submitted: May 6, 2009 (revised May 28, 2009)

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 TASO (Technical Assistance and Services Office)
The Jackson Center
501 N. 2nd Street
Richmond, VA 23219-1321

Email Address: taso@dhcd.virginia.gov
Fax Number: (804) 371-7092
Phone Numbers: (804) 371-7140 or (804) 371-7150



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

Code Change Form for the 2009 Code Change Cycle

Code Change Number: _____

Proponent Information

(Check one): Individual Government Entity Company

Name: David J. Thomas, PE Representing: Self

Mailing Address: Fire Prevention Division, 10700 Page Ave, Fairfax Va 22030

Email Address: david.thomas@fairfaxcounty.gov Telephone Number: 703-246-4819

Proposal Information

Code(s) and Section(s): USBC, Volume 1, Section 109. Add the following Section 109.7:

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

109.7 Means of egress: The construction documents shall show in sufficient detail the location, construction, size and character of all portions of the means of egress in compliance with the provisions of this code. In other than occupancies in Groups R-2, R-3, and I-1, the construction documents shall designate the number of occupants to be accommodated on every floor, and in all rooms and spaces.

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

This statement is in IBC 2006 at Section 106.1.2, and was deleted by the USBC when Chapter 1 of IBC was replaced by Chapter 1 of the USBC. It formerly, under the BOCA codes, resided in Chapter 10. Since the paragraph was lost in the transition to IBC, it needs to be reinstated in the proper place in the USBC, under Construction Documents. It provides both the designer and the reviewer of the documents with the necessary guidance to have on the drawings the basis of egress calculations and egress capacity sizing. Placement of these numbers on the drawings removes ambiguity and formerly, under the BOCA Codes, was there to ensure completeness and fair and equitable review of the designer's intent. It should be restored to the code, since it provides clarity for all parties in the construction documents. Summary sheets are sometimes found in current documents, but the aggregate data can cause confusion unless supported by actual numbers of occupants for which the spaces are designed. Since the designer already compiles the aggregate data, this will merely involve placing the basic data on the plans as well as the aggregate numbers.

It is not anticipated that any basic changes in either design procedures or costs will be affected by this proposal, which is a restoration of a clause long present in the codes which was inadvertently left out when the transition to IBC was accomplished.

Submittal Information

Date Submitted: April 8, 2009

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 TASO (Technical Assistance and Services Office)
The Jackson Center
501 N. 2nd Street
Richmond, VA 23219-1321

Email Address: taso@dhcd.virginia.gov
Fax Number: (804) 371-7092
Phone Numbers: (804) 371-7140 or (804) 371-7150

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

Code Change Form for the 2009 Code Change Cycle

Code Change Number: _____

Proponent Information

(Check one): Individual Government Entity Company

Name: DHCD staff

Representing: DHCD

Mailing Address: 501 North 2nd Street Richmond Virginia 23219

Email Address: tsu@dhcd.virginia.gov

Telephone Number: 804.371.7140

Proposal Information

Code(s) and Section(s): USBC, Part I – VCC Sections 113.7.2 & 202

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

Modify sections as follows:

113.7.2 Qualifications. In determining third-party inspector qualifications, the building official may consider such items as DHCD certifications, other state and national certifications, state professional registrations, related experience, education, and any other factors that would demonstrate competency and reliability to conduct inspections. In addition, all third-party inspectors shall be certified in the appropriate subject area, respective to their function, in accordance with the VCS and shall be subject to the periodic certification maintenance training and continuing education requirements in Section 105.2.3.

202 Definitions

Technical Assistant. Any person employed by or under an extended contract to a local building department or local enforcing agency for enforcing enforcement of the USBC. ~~For the purposes of this definition, an extended contract shall be a contract with an aggregate term of 18 months or longer.~~

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

This provision establishes a baseline qualification for all code enforcement personnel and third-party inspectors performing inspections under the USBC. This provision stipulates that those third-party inspectors performing inspection functions be subject to and achieve the equivalent level of certification and education as required of building officials and technical assistants employed by or under contract to a local building department or local enforcing agency for enforcement of the USBC. The modification of the definition applies the qualification to all third-party inspectors under contract to a local building department or local enforcing agency for enforcement of the USBC, regardless of the length of contract term, and circumvents the avoidance of certification through intermittent contracts.

Submittal Information

Date Submitted: April 24, 2009

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 TASO (Technical Assistance and Services Office)

The Jackson Center

501 N. 2nd Street

Richmond, VA 23219-1321

Email Address: taso@dhcd.virginia.gov

Fax Number: (804) 371-7092

Phone Numbers: (804) 371-7140 or (804) 371-7150



Activist Local Building Officials

Generally we have found that local building officials understand that only the property owner (or tenant who controls the property) have the power to "discontinue or abate" any situation on that property. We have seen cases where a current homeowner has been issued a notice of violation and has used such notice, where appropriate, to compel their builder to honor their contractual commitments.

We recently have had an experience where a local building official deemed us the "responsible party" for a situation on property that we had sold over a year earlier. There was no violation present at the time the property was sold to the homeowner. The condition in question was related to natural occurrences far from the foundation, i.e., settling of landscaped area over time.

When questioned about the issuance of the violation to us, the building official stated that he had done an investigation with the homeowner and had determined that we were the responsible party. We were not involved in that process. The two year statute of limitations for building code violations appeared to have been expanded by the official into a two year warranty of customer satisfaction.

We were also told that the building official could get verbal permission from the owner for us to access the property and further stated that we should notify the owner of any improvements that needed to be moved in order for us to do the abatement work. He further stated that if the owner did not do so we should move it ourselves. He further stated that we would be working to his satisfaction and not the owner's.

The Building Official did not seem to be interested in hearing about liability issues, our warranty with our customer, or any reason as to why we may not be the responsible party.

Submitted by:
Keystone – RM, LLC
January, 2009

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

Code Change Form for the 2009 Code Change Cycle

Code Change Number: _____

Proponent Information

(Check one): Individual Government Entity Company

Name: Charles L. Walker

Representing: American Promotional Events, d.b.a. TNT Fireworks

Mailing Address: 4511 Helton Drive, Florence, AL 35630

Email Address: walkerc@tntfireworks.com

Telephone Number: 800-243-1189

Proposal Information

Code(s) and Section(s): IBC - 307.2 Definitions

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

Add the following definition to IBC Section 307.2 Definitions to read:

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

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

Adding the definition of "Permissible Fireworks" maintains consistency with the definitions of the certain types of 1.4G Consumer Fireworks that are allowed by the State of Virginia. Adding this definition also will bring the Building Code into consistency with the definitions amended in the VSFPC.

Submittal Information

Date Submitted: April 20, 2009

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 TASO (Technical Assistance and Services Office)
The Jackson Center
501 N. 2nd Street
Richmond, VA 23219-1321

Email Address: taso@dhcd.virginia.gov
Fax Number: (804) 371-7092
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VIRGINIA DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
DIVISION OF BUILDING AND FIRE REGULATION

Code Change Form for the 2009 Code Change Cycle

Code Change Number: _____

Proponent Information

(Check one): Individual Government Entity Company

Name: Charles L. Walker

Representing: American Promotional Events, d.b.a. TNT Fireworks

Mailing Address: 4511 Helton Drive, Florence, AL 35630

Email Address: walkerc@tntfireworks.com

Telephone Number: 800-243-1189

Proposal Information

Code(s) and Section(s): IBC - 307.5 High-hazard Group H-3.

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

IBC (NEW) (Add) 307.5.1 PERMISSIBLE FIREWORKS. Sparklers, fountains, Pharaoh's serpents, caps for pistols, or pinwheels commonly known as whirligigs or spinning jennies items permitted to be sold in the Commonwealth of Virginia shall be exempt from the requirements of an H-3 Occupancy under the following circumstances:

- 1. The total amount on display and in storage in any single control area complies with the maximum allowable quantities as listed in Table 307.1 (1) of this code, or;**
- 2. The new or existing retail store or retail sales facility complies with the provisions of the National Fire Protection Association Standard 1124 - 2006 Edition (NFPA 1124-06) for new stores and facilities as herein amended by the Commonwealth of Virginia.**

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

45 states and The District of Columbia allow the use, sale and possession of some form of consumer fireworks. In other words, over 85% of the U.S. population can legally use some form of Consumer Fireworks. The State Virginia allows for a very limited type of non-explosive, non-aerial type of Consumer Fireworks 1.4G to be used, sold or possessed. It is common knowledge that the international Codes hold an extremely limited view on the RETAIL SALES of consumer fireworks. NFPA 1124 allows for a more concise regulation of every aspect of the retail sale, storage and display of Consumer Fireworks. It will also allow a more realistic regulatory approach for the types of products that are allowed in Virginia than merely the classification of an occupancy as Hazardous, when it contains excess of the very limited amounts of the type of Permissible Fireworks allowed in the State.

Submittal Information

Date Submitted: April 20, 2009

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 TASO (Technical Assistance and Services Office)
The Jackson Center
501 N. 2nd Street
Richmond, VA 23219-1321

Email Address: taso@dhcd.virginia.gov
Fax Number: (804) 371-7092
Phone Numbers: (804) 371-7140 or (804) 371-7150



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

Code Change Form for the 2009 Code Change Cycle

Code Change Number: _____

Proponent Information

(Check one): Individual Government Entity Company

Name: Charles L. Walker

Representing: American Promotional Events, d.b.a. TNT Fireworks

Mailing Address: 4511 Helton Drive, Florence, AL 35630

Email Address: walkerc@tntfireworks.com

Telephone Number: 800-243-1189

Proposal Information

Code(s) and Section(s): IBC - Chapter 35 Referenced Standards

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

Change the referenced standards in Chapter 35 of the IBC as follows:

NFPA

1124-06 Manufacture, Transportation, and Storage of Fireworks and Pyrotechnic Articles. . . , 307.5.1, 415.3.1

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

To be consistent with the proposed code change regarding Permissible Fireworks and referencing the most recent, available version of the National Fire Protection Standard 1124.

Submittal Information

Date Submitted: April 20, 2009

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 TASO (Technical Assistance and Services Office)
The Jackson Center
501 N. 2nd Street
Richmond, VA 23219-1321

Email Address: taso@dhcd.virginia.gov
Fax Number: (804) 371-7092
Phone Numbers: (804) 371-7140 or (804) 371-7150



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

Code Change Form for the 2009 Code Change Cycle

Code Change Number: _____

Proponent Information

(Check one): Individual Government Entity Company

Name: VBCOA

Representing: _____

Mailing Address: _____

Email Address: _____

Telephone Number: _____

Proposal Information

Code(s) and Section(s): _____

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

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

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 TASO (Technical Assistance and Services Office)
The Jackson Center
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Phone Numbers: (804) 371-7140 or (804) 371-7150

1. Edit section R301.2.1.1 as shown.

R301.2.1.1 Design criteria. In regions where the basic wind speeds from Figure R301.2(4) equal or exceed ~~100~~110 miles per hour (4549 m/s) ~~for exposure category C and D in hurricane-prone regions, or~~ 110 miles per hour (49 m/s) elsewhere, the design shall be in accordance with one of the following methods. The element of design not addressed by those documents in Items 1 through 4 shall be in accordance with this code.

2. Edit section R403.1.1 as shown.

R403.1.1 Minimum size. Minimum sizes for concrete and masonry footings shall be as set for in Table R403.1 and Figure R403.1(1). The footing width, W, shall be based on the load-bearing value of the soil in accordance with Table R401.4.1. Spread footings shall be at least 6 inches (152 mm) in thickness, T_1 in regions where the basic wind speeds are less than 110 miles per hour (49 m/s) and 8 inches (203 mm) elsewhere. Footing projections, P, shall be at least 2 inches (51 mm) and shall not exceed the thickness of the footing. The size of the footings supporting piers and columns shall be based on the tributary load and allowable soil pressure in accordance with Table R401.4.1. Footings for wood foundations shall be in accordance with the details set forth in Section R403.2, and Figures R403.1(2) and R403.1(3).

3. Edit Section R403.1.3 as shown.

R403.1.3 Seismic and high wind reinforcement. Concrete footings located in Seismic Design Categories D_0 , D_1 and D_2 as established by Table R301.2(1) and regions where the basic wind speeds equal or exceed 110 mph (49 m/s), shall have minimum reinforcement one No. 4 bar for every 8 inches (203 mm) of width or portion thereof. Reinforcement shall be located a minimum of 3 inches (76 mm) clear from the bottom of the footing.

In Seismic Design Categories D_0 , D_1 and D_2 and in regions where the basic wind speeds equal or exceed 110 mph (49 m/s) where a construction joint is created between a concrete footing and a stem wall, a minimum of one No. 4 bar shall be installed at not more than 4 feet (1219 mm) on center. The vertical bar shall extend to 3 inches (76 mm) clear of the bottom of the footing, have standard hook and extend a minimum of 14 inches (357 mm) into the stem wall.

In Seismic Design Categories D_0 , D_1 and D_2 and in regions where the basic wind speeds equal or exceed 110 mph (49 m/s) where a grouted masonry stem wall is supported on a concrete footing and stem wall, a minimum of one No. 4 bar shall be installed at not more than 4 feet (1219 mm) on center. The vertical bar shall extend to 3 inches (76 mm) clear of the bottom of the footing and have a standard hook.

In Seismic Design Categories D_0 , D_1 and D_2 and in regions where the basic wind speeds equal or exceed 110 mph (49 m/s) masonry stem walls without solid grout and vertical reinforcing are not permitted.

Exception: In detached one- and two-family *dwelling*s located in Seismic Design Categories D_0 , D_1 and D_2 which are three stories or less in height and constructed with stud bearing walls, plain concrete footings without longitudinal reinforcement supporting walls and isolated plain concrete footings supporting columns or pedestals are permitted.

4. Add new section as shown.

R403.1.6.2 Foundation anchorage in high wind regions. In regions where the basic wind speeds equal or exceed 110 mph (49 m/s), the foundation anchorage shall be in accordance with the American Forest and Paper Association Wood Frame Construction Manual Guide to Wood Construction in High Wind Areas for One- and Two-family Dwellings for the appropriate wind speed.

5. Edit Section R501.1 as shown

R501.1 Application. The provisions of this chapter shall control the design and construction of the floors for all buildings including the floors of *attic* spaces used to house mechanical or plumbing fixtures and *equipment*. In regions where the wind speeds equal or exceed 110 miles per hour (49 m/s), the provisions of the American Forest and Paper Association *Wood Frame Construction Manual Guide to Wood Construction in High Wind Areas for One- and Two-family Dwellings* shall also control the design and construction of floors. Where the provisions of this section and the above referenced guide conflict, the guide shall govern.

6. Edit Section 601.1 as shown.

R601.1 Application. The provisions of this chapter shall control the design and construction of all walls and partitions for all buildings. In regions where the wind speeds equal or exceed 110 miles per hour (49 m/s), the provisions of the American Forest and Paper Association *Wood Frame Construction Manual Guide to Wood Construction in High Wind Areas for One- and Two-family Dwellings* shall also control the design and construction of all walls and partitions. Where the provisions of this section and the above referenced guide conflict, the guide shall govern.

7. Edit Section R602.10 as shown.

R602.10 Wall bracing. In regions where the basic wind speeds are less than 110 miles per hour (49 m/s), buildings shall be braced in accordance with this section. In regions where the basic wind speeds equal or exceed 110 miles per hour (49 m/s), buildings shall be constructed in accordance with the American Forest and Paper Association *Wood Frame Construction Manual Guide to Wood Construction in High Wind Areas for One- and Two-family Dwellings* for the appropriate wind speed. Where a building, or portion thereof, does not comply with one or more of the bracing requirements in this section or the above referenced guide, those portions shall be designed and constructed in accordance with Section R301.1.

7. Edit Section R801.1 as shown.

R801.1 Application. The provisions of this chapter shall control the design and construction of the roof-ceiling system for all buildings. In regions where the wind speeds equal or exceed 110 miles per hour (49 m/s), the provisions of the American Forest and Paper Association *Wood Frame Construction Manual Guide to Wood Construction in High Wind Areas for One- and Two-family Dwellings* shall also control the design and construction of the roof-ceiling system. Where the provisions of this section and the above referenced guide conflict, the guide shall govern.

Supporting Statement:

Rationale for Revision:

- Hazard is not defined. A hazard with regard to what?
- Local interpretation of hazard can include anything negative that occurs on a property, whether related to building code or not.
- Can be used improperly to turn two year statute of limitations into two year warranty period.
- Local application of code to “any disturbed area” represents improper extension of building code into matters unrelated to building or structure.
- ICC states that “...a detailed treatment of drainage design is beyond the scope of the code...” and that “...consideration of drainage patterns...shall be subject to the approval of the authority having jurisdiction.” (see attached)
- Drainage, erosion, etc. may be subjects for other local ordinances, but not the building code.
- Drainage, erosion, etc. are impacted by natural phenomena and owner activities after closing.

arnham

From: Brenda Masters
Sent: Friday, September 19, 2008 9:58 AM
To: Don Farnham
Subject: FW: 03 IRC R401.3 (PG)

Thank you,
Brenda

-----Original Message-----

From: Phillip Grankowski [mailto:pgrankowski@iccsafe.org]
Sent: Friday, September 19, 2008 9:51 AM
To: Brenda Masters
Cc: Lis Valdemarsen
Subject: RE: 03 IRC R401.3 (PG)

September 19, 2008

Brenda Masters
1207 Rosenetah Rd
Richmond, VA 23230
brenda_masters@keybuild.com

RE: Section R401.3 of the 2003 International Residential Code for
One- and Two-Family Dwellings

Dear Ms. Masters:

This staff opinion is in response to your correspondence, dated September 11, 2008, regarding the above referenced code. It is our understanding that you want to know if Section 403.1 applies to drainage of the entire lot or the surface drainage around the foundation.

As indicated in the 2003 IRC Commentary, along with the proper support for a structure through the foundation system, adequate preparation of the building site is necessary to keep water drainage away from the supporting foundations. Proper site drainage is an important element in preventing wet basements, damp crawl spaces, eroded banks, and possible failure of a foundation system. A detailed treatment of drainage design is beyond the scope of the code which only provides rough guidelines for areas where a more comprehensive set of grading regulations does not exist. Consideration of drainage patterns, drainage devices (i.e., gutters and downspouts), soil erosion, graded slopes, swales, ground frost, moisture conditions, soil type, geological features, geographic conditions and other related design issues shall be subject to the approval of the authority having jurisdiction.

This opinion is based on the information which you have provided. We have made no independent effort to verify the accuracy of this information nor have we conducted a review beyond the scope of your question. As this opinion is only advisory, the final decision is the responsibility of the designated authority charged with the administration and enforcement of this code.

Sincerely,

Phillip Grankowski
Senior Technical Staff

International Code Council, Inc.
Chicago District Office
4051 West Flossmoore Road

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

Code Change Form for the 2009 Code Change Cycle

Code Change Number: _____

Proponent Information

(Check one): Individual Government Entity Company

Name: J. Kenneth Payne, Jr., AIA

Representing: VSAIA

Mailing Address: 3200 Norfolk Street, Richmond, Virginia 23230

Email Address: kpayne@moseleyarchitects.com

Telephone Number: 804-794-7555

Proposal Information

Code(s) and Section(s): 2009 IBC, Section 408.6 – Smoke barrier; and 408.8 – Windowless buildings.

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

408.6 Smoke barrier. Occupancies ~~in~~ classified as Group I-3 shall have *smoke barriers* complying with Sections 408.8 and 710 to divide every *story* occupied by residents for sleeping, or any other *story* having an *occupant load* of 50 or more persons, into at least two smoke compartments.

Exception 1: Spaces having a direct *exit* or exits to one of the following, provided that the locking arrangement of the doors involved complies with the requirements for doors at the *smoke barrier* for the use condition involved:

1. A *public way*.
2. A building separated from the resident housing area by a 2-hour fire-resistance-rated assembly or 50 feet (15 240 mm) of open space.
3. A secured *yard* or *court* having a holding space 50 feet (15 240 mm) from the housing area that provides 6 square feet (0.56 m²) or more of refuge area per occupant, including residents, staff and visitors.
4. An *exit passageway*.

Exception 2: *Smoke barriers* are not required where occupancies classified as Group I-3 have an *occupant load* less than 50 and where those occupancies are not contiguous to each other.

408.9 Windowless buildings. Smoke control. ~~For the purposes of this section, a windowless building or portion of a building is one with nonopenable windows, windows not readily breakable or without windows. Windowless buildings shall be provided with an engineered smoke control system to provide a tenable environment for exiting from the smoke compartment in the area of fire origin in accordance with Section 909 for each windowless smoke compartment. Provide a smoke control system in accordance with this section and Section 909 for each smoke compartment. The smoke control system shall provide an environment capable of the timely evacuation and relocation of occupants from the smoke compartment where the fire originated.~~

Exception: Smoke compartments with openable windows or windows that are readily breakable.

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

The application and interpretation of smoke barriers, smoke compartments, windowless buildings, and smoke control systems, oftentimes varies among building officials because the "path" of determination can be confusing. Should small holding cells adjacent to courtrooms have the same smoke control system, smoke compartments, and smoke barriers as a jail or prison? Should an office area have a smoke control system because it is on the same "story" as an I-3? Should a kitchen have a smoke control system because it is a "portion of a building" that also has an I-3 occupancy?

408.6 Smoke barrier: The proposal makes it clear that smoke barriers apply *only* to those spaces classified as I-3. The current text implies that *any* occupancy in an I-3 requires smoke barriers (provided it meets the two conditions). This might include a kitchen that is on the other side of a separated corridor; or a dining room located down the corridor; or an office suite located 300 feet away...all because they are "occupancies in Group I-3" and/or are on the same "story" as a Group I-3. Since the proposed text clarifies that smoke barriers apply only to spaces that are Group I-3; the kitchen (B), dining room (A-2), and office suite (B) would not be required to have smoke barriers...thus, they would not be required to have smoke compartments...thus they would not be required to have a smoke control system.

Exception 1: The addition of "exit passageway" provides greater flexibility and another option of exiting the occupants, while avoiding the need for smoke barriers, and since exit passageways are rated construction (not unlike what is allowed by Exception 1.2), this meets the spirit and functional intent of the code.

Exception 2: The exception attempts to clarify conditions that might exist (e.g., courthouses) where you might have "islands" or "pockets" (not smoke compartments) of I-3 located throughout another occupancy (e.g., courtrooms) and where each "island" has less than 50 occupants. The need for smoke barriers would not be required; thus, smoke compartments would not be required; thus, a smoke control system would not be required. However, if you have three (3) such "islands" (each with 20 occupants), it might be interpreted (and has been interpreted on numerous occasions) that you exceed the 50 occupants "per story." To the extreme, you might have twenty (20) such "islands" of three occupants each on the same story. Is it the intent of the code to require a smoke control system in each of these "islands" and subsequently for the entire building?

As long as these "islands" or "pockets" are not contiguous to each other (i.e., separated from each other with other spaces not classified as I-3 between them), and the occupant load of *each* is less than 50, then they are exempt from the need for smoke barriers.

408.9 Windowless buildings. Smoke control. This paragraph changes terms so often, it causes confusion among designers and LAHJ. The text begins with *windowless* buildings, and then jumps immediately to *any* building (i.e., "portions"). It then requires a smoke control system in a *windowless building*, but ends the paragraph requiring a smoke control system in each smoke *compartment*. So, is a smoke control system required in:

- Only windowless buildings
- In portions of buildings, regardless of whether it is windowless or not
- Only smoke compartments
- All of the above

The confusion has meant buildings with I-3 occupancies throughout the Commonwealth are not designed the same. Some LAHJ require all areas in a windowless building to have a smoke control system. Some LAHJ require a smoke control system only in each smoke compartment, and not throughout the entire building. Some LAHJ require other areas of a "regular" building (not a windowless building, but in a building that has smoke compartments) to have a smoke control system.

Also, is the issue "windowless buildings" or "smoke control?"

If one assumes the code wants a smoke control system only in a windowless smoke compartment (as the last sentence implies), then why confuse matters with windowless buildings and portions thereof? The proposed text attempts to clarify that a smoke control system is required in smoke compartments only, and deletes the confusion of adding windowless buildings or portion of buildings. An exception was added to omit the smoke control system if there are methods by which the products of combustion could be ventilated.

"Tenable" was deleted since it is not specifically defined by the building code, and can be interpreted to mean, "capable of being occupied" or "capable of being held or maintained", which is the opposite of what needs to occur – evacuate the occupants from the smoke compartment where the fire originated – not allow the occupants to remain in and occupy the smoke compartment.

It is believed the intent is to quantify when a smoke control system is required, and the term "windowless building" was introduced to help determine when it was required. However, based on the above, if we delete the terms "windowless building" from 408.9, then we need to re-title the section. The new title appears to get straight to the intent of the code without confusing and unnecessary language.

When the proposed *changes* to Section 408.6 are combined with the *existing* text in Section 408.6.1 and the proposed *changes* to Section 408.9, the need for smoke barriers, smoke compartments, and a smoke control system should be simplified and can be applied equally throughout the Commonwealth.

Submittal Information

Date Submitted: April 23, 2009

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 TASO (Technical Assistance and Services Office)
The Jackson Center
501 N. 2nd Street
Richmond, VA 23219-1321

Email Address: taso@dhcd.virginia.gov
Fax Number: (804) 371-7092
Phone Numbers: (804) 371-7140 or (804) 371-7150



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

Code Change Form for the 2009 Code Change Cycle

Code Change Number: _____

Proponent Information

(Check one): Individual Government Entity Company

Name: Chief James A. Gray

Representing: Virginia Fire Chiefs Association, Inc

Mailing Address: Hampton Division of Fire & Rescue 22 Lincoln Street Hampton, VA 23669

Email Address: jgray@hampton.gov

Telephone Number: 757-727-6580

Proposal Information

Code(s) and Section(s): USBC 909.1

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

Add New USBC

SECTION 908 CARBON MONOXIDE ALARMS

908.1 Carbon monoxide alarms. Listed single or multiple station carbon monoxide alarms complying with UL 2034 shall be provided in accordance with this section.

908.2 Group R-1 and R-2. Single or multiple station carbon monoxide alarms shall be installed in all sleeping units in Group R-1 and R-2 equipped with fuel fired appliance(s) in the following locations:

1. In each story within a dwelling unit.
2. On the ceiling or wall outside of each separate sleeping area in the immediate vicinity of the bedrooms.

908.3 Groups R-3 and R-4. Single or multiple station carbon monoxide alarms shall be installed in Groups R-3 and R-4 dwelling units equipped with fuel fired appliance(s) in the following locations:

1. In each story within a dwelling unit.
2. On the ceiling or wall outside of each separate sleeping area in the immediate vicinity of the bedrooms.

908.4 Maintenance. Required carbon monoxide alarms shall be maintained in accordance with the Statewide Fire Prevention Code.

(Renumber subsequent sections)

Add New SFPC

908.7 Carbon monoxide alarms. Carbon monoxide alarms shall be maintained as approved when required by the USBC.

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

Carbon monoxide detectors available in today's market meet the updated requirements which have eliminated the false positives that are an issue with those opposed previously to carbon monoxide detectors installation requirements.

Prior to the strong support of the fire service and others, 21 individuals were treated and 5 hospitalized because of carbon monoxide fumes in a student apartment in Blacksburg. In Salem the year before, there was a fatality resulting from carbon monoxide fumes at Roanoke College. Now, according to the Journal of the American Medical Association (JAMA), those who sustained heart muscle injury due to their exposure to carbon monoxide had an increased risk of death during a mid-point follow-up period of 7.6 years compared to those without injury to the heart. Despite a decline in the annual death rate from carbon monoxide (CO) poisoning, CO remains the most common type of accidental poisoning in the United States, contributing to 40,000 or more emergency department visits each year, according to background information. The only way to protect citizens from an odorless, tasteless and colorless gas, which are products of combustion, is to install carbon monoxide detectors around sleeping quarters, in basements and other areas where the gas may settle. Carbon monoxide poisoning mimics many common illnesses such as the flu and food poisoning.

In 2008, the Virginia Department of Fire Programs implemented a grant program where carbon monoxide detectors were given to families in the Martinsville / Henry County area who met certain requirements relating to heating assistance. Within three days of installation, a family of 4 evacuated their house because the alarm sounded. It was found that piping in the heating system had numerous holes thus causing the accumulation of gas in the home they were renting. Four people are alive today because of a carbon monoxide detector. In 2005, there were six deaths attributed to carbon monoxide poisoning and in 2006 there were 635 incidents in which fire departments responded. In April 2009, two children were overcome by carbon monoxide in an apartment, but survived. The 5 condo building in Fairfax County, all received the gas from a generator being used inside a utility room.

Carbon monoxide detectors undeniably save lives and need to be installed where there are fossil fuel appliances in close proximity, i.e. attached garages or fireplaces. As stated previously, carbon monoxide is an odorless, tasteless and colorless gas, which is product of combustion and can make an individual extremely ill or can be fatal.

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:

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The Jackson Center
501 N. 2nd Street
Richmond, VA 23219-1321

Email Address: taso@dhcd.virginia.gov
Fax Number: (804) 371-7092
Phone Numbers: (804) 371-7140 or (804) 371-7150



From: Ed Rhodes [rcgva@comcast.net]
Sent: Monday, August 20, 2007 6:41 AM
To: Jimmy Johnson; Jimmy Carter; Deborah Wilmouth; Chris Eudailey; Bill Smith; Chief James Gray; Tom Frazier; Robbie Dawson; Rick Labbate; Mike Reilly; Kenny Dunn; Bobby Lukhard; Throckmorton, David; Denny Linaburg; Bobby Rollston; Steve Hall; Jeff Flippo; J. D. Mitchell; David Diamantes
Cc: Tarry Pribble; Steve Grayson; Roger Vassar; Karen Wagner; Gary Dalton (Office); Gary Dalton; Dreama Chandler; Bubby Bish; Randy Abernathy; Linda Johnson; Craig Bryant; Bill Bullock; David Hoback
Subject: Carbon monoxide poisons 23

Carbon monoxide poisons 23

An apartment building closed after tests showed high levels of gas.

By Shawna Morrison , Greg Esposito and Angela Manese-Lee
The Roanoke Times

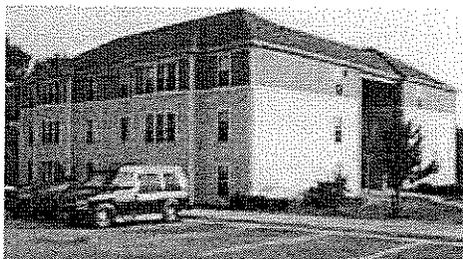
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- [Carbon monoxide leak: Nausea was the first sign of danger](#)

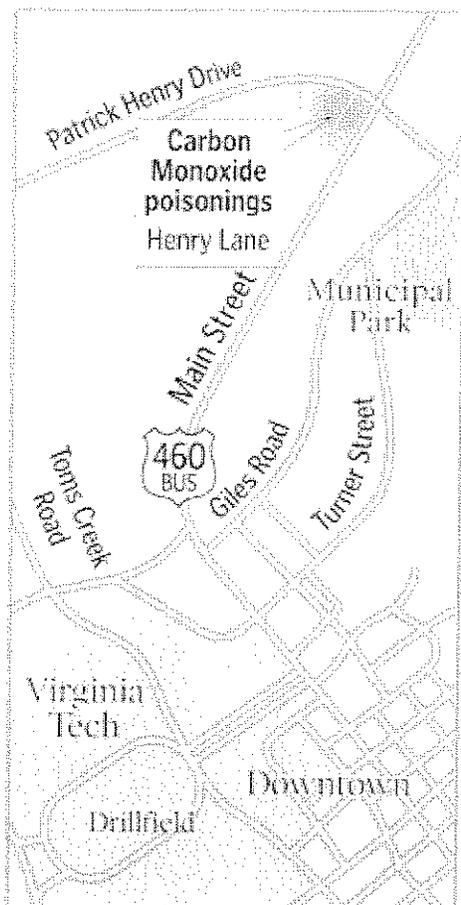


Photos by Gene Dalton | The Roanoke Times

Blacksburg firefighters reach the top of Collegiate Suites on Henry Lane on Sunday. Five women were found unresponsive in an apartment that morning, and the building remains cordoned off after tests showed potentially lethal levels of gas there.



Collegiate Suites, the location of the carbon monoxide leak, is located on Henry Lane, just off of Main Street in Blacksburg.



BLACKSBURG -- Less than an hour before Virginia Tech dedicated a memorial to 32 students and faculty members killed by a gunman April 16, Blacksburg was jolted by another incident Sunday when 23 people, many of them students, were sickened in a carbon monoxide leak at an off-campus apartment building.

Five women were still hospitalized Sunday night, and their Collegiate Suites apartment building at 1306 Henry Lane remained cordoned off after tests showed potentially lethal levels of the gas in their building. Authorities believe the leak was caused by a hot-water heater.

"At first when they were banging on the doors and yelling to get out, my first thought was that there was another shooting," said Jessica Foster, a Tech sophomore from Williamsburg who lives on the third floor. "It was just a gut feeling."

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At the time they were evacuated shortly after 11 a.m., Foster and her roommate, Nadia Benkhadra, a sophomore from Olney, Md., were getting ready to go to the noon memorial dedication.

"It's just unfortunate, and it's a bad coincidence," Rachael Evans, a Tech junior from Suffolk said of the multiple tragedies involving the university the past year. "We just thought, going into this year, that this was going to be a better year, and then this happened. But it still will be."

The five women who remained hospitalized Sunday night were found unresponsive in their beds in apartment F Sunday morning by a gas company employee. Police identified the women as Elizabeth Amanda Burgin of Ashburn, Carolyn Ann Dorman of Potomac, Md., Nichole Marie Howarth of Chesterfield, Kristin Louise Julia of Waterford and Kirsten Wendie Halik of Vienna, Va. All are 19-year-old Tech students.

A resident of the building had gotten sick and, suspecting a natural-gas leak, called Atmos Energy, Blacksburg police Capt. Bruce Bradbery said. The unidentified employee was let in by a maintenance worker and discovered that the problem was with carbon monoxide, not natural gas.

The employee carried the five women onto a landing for air, then called police. Others helped him carry the women outside onto the lawn, Bradbery said.

Julia and Halik were unable to breathe on their own, Bradbery said. They were placed on ventilators and flown to the University of Virginia Medical Center in Charlottesville for treatment.

They were in critical condition Sunday night.

Tommy Julia said late Sunday evening his sister's condition was "still 50/50."

Howarth and Dorman were able to breathe on their own but were unresponsive, Bradbery said. They and Burgin were taken to Duke University Medical Center for treatment. Burgin's condition improved as the day wore on, Bradbery said.

They were in stable condition Sunday night.

Kristin Carr, a Tech sophomore from Northern Virginia, lives with three roommates in a first-floor apartment in building 1306. This is her first year living at Collegiate Suites, which is popular with Tech students -- particularly with female students because it's fairly new and has walk-in closets, she said.

Carr, who moved into the building Friday, said she didn't notice anything unusual until about 11 a.m. Sunday.

"It was just crazy," she said. "We were sitting in the apartment watching TV after breakfast and we heard people banging on doors.

"Someone banged on our door, and we heard someone yelling, 'There's a gas leak, get out,' " she said.

As she walked out, Carr said she saw several women passed out on a second-floor landing.

Her boyfriend, Brett Hutcherson, a Tech junior from Lynchburg, said he is certified in cardiopulmonary resuscitation and helped the women.

"We came around the side of the building, and it didn't look like there were enough paramedics at that time," Hutcherson said. "I went over to see what I could do."

He said several women were lying on their backs, with pulses but unresponsive.

"I rolled them over on their sides to open up their airways," Hutcherson said. He also checked vital signs and stayed with the women until all of them had been loaded into ambulances.

"I just wanted to make sure everyone was OK, because this university has been through a lot," he said.

Bradbery said 21 people, including the five women, were taken to Montgomery Regional Hospital in Blacksburg. Sixteen were treated and released.

Two people were treated at Carilion New River Valley Medical Center in Montgomery County and released by Sunday evening, a hospital spokesman said.

Two others reported being sick but weren't taken to a hospital, Bradbery said.

Blacksburg Assistant Fire Chief Anthony Wilson said the source of the leak appears to have been a faulty valve on a hot-water heater in the women's laundry room. The relief valve was stuck open, he said, forcing the appliance to constantly burn fuel in an attempt to heat the water.

One person was killed and dozens more sickened at Roanoke College in July 2006 when a water heater caused a carbon monoxide leak there.

Three teams of firefighters were sent in to check carbon monoxide levels in all 12 apartments in the Collegiate Suites building on Sunday, Wilson said. Four apartments -- all on the second and third floors and confined to one side of the building -- had high levels, he said.

Half an hour after police were first called about the leak at 11:18 a.m., carbon monoxide levels within the apartment shared by the five women were at 500 parts per million parts of air, Wilson said. He called that amount "a potentially lethal dose."

He said people can experience symptoms of carbon monoxide poisoning at levels as low as 25 parts per million.

The apartment building remained closed late Sunday, and residents were being housed at hotels. Wilson said officials would work today to try to confirm that the water heater was the source of the leak.

Staff writers Anna Mallory, Tim Thornton and Donna Alvis-Banks contributed to this report.

Monday, August 20, 2007

Carbon monoxide leak: Nausea was the first sign of danger

Nausea was the first sign of danger.

By Angela Manese-Lee and Greg Esposito
381-1675 and 381-8621

BLACKSBURG -- The queasiness started about 10 a.m. Sunday for roommates Britnye Kurty and Rachael Evans.

"I was nauseous and lightheaded, I thought it was because I had just got out of a hot shower. It was very strange," said Kurty, a Virginia Tech junior from Rockville, Md. "We [Kurty, her roommate and their guests] were all drinking coffee talking about how odd we felt as we got ready to go" to the dedication of a memorial to the victims of the April 16 shootings at Virginia Tech.

Kurty said she called her father, who was staying nearby, and asked Evans, her roommate, to call the apartment managers for the Collegiate Suites building at 1306 Henry Lane, as well as the Atmos Energy gas company.

When an unidentified gas company worker came to the apartments, Kurty said he told them that the leak wasn't coming from their third-floor apartment. Then he went to the unit below Kurty's and found five women unconscious.

Kurty said that was when she realized the situation was serious.

Kurty's father arrived, and Kurty said he and some others helped get the unconscious women -- she remembers five -- out of the apartment, down the stairs and onto the grass.

"As soon as the energy technician started screaming for help and the guys started pulling girls out," she said. "To see them just planted on the ground in such a serious state; it was hard to look at."

They weren't really moving at all," she said. "They were just lying there and they had vomited on themselves. It was hard to look at."

Kurty said she then went around banging on doors trying to alert other people in the building.

"After everything that happened here in the past, it's only natural now to be on top alert and to go to the furthest action you need to."

Eventually, she and Evans went to Montgomery Regional Hospital. Kurty said she was put on oxygen for about four hours and was released about 5 p.m. At 6:30 p.m., she was still wearing a red hospital ID bracelet.

"I'm still a little weak obviously," she said. "And just tired, exhausted."

Evans also spent four hours in the hospital Sunday.

"The headache that we got from it was unreal," she said. "I'm going to have a carbon monoxide detector for the rest of my life, I know that," she said.

She said Tech's Cook Counseling Center has sent e-mails to professors of students affected by the poisoning. But Evans plans on attending her classes today, the first day of fall semester, even though she'd be excused if she didn't. The junior from Suffolk said she is looking forward to the school year.

Kurty said that she was disappointed that she hadn't been able to go to the memorial dedication.

"I still think we are a very strong school and a very strong community. And again, this could happen anywhere."

Kurty said she would probably be staying at the Holiday Inn on Sunday night.

"I do plan on going back to class," she said. "I would love to go and start off on the right foot and not let any of this hold me back."

She plans to eventually return to her apartment, which she moved into only last week.

"I love this complex," she said. "As long as I know they've checked everything out to the best of their abilities, I have no problem staying here."

Carol Gordon and her daughter Kelly Gordon, a Tech junior, moved Kelly's things into her apartment late Saturday. Because of the clutter they decided not to spend the night there.

Carol Gordon of Fairfax had planned on straightening up the apartment Sunday. But as she approached the building Sunday morning, walking from a nearby grocery store, she saw several students lying on the ground with paramedics working on them, and ambulances nearby.

Even though Kelly Gordon's apartment is on the first floor of the building, opposite the second-floor apartment where the victims were found, Carol Gordon is now concerned for her daughter.

"Every apartment complex should have carbon monoxide detectors," she said. "Wherever she's going to live, she's not living anywhere without a carbon monoxide detector."

Gordon talked about buying detectors for other residents of the building. Less than an hour later, she was lugging a bag full of them to building 1306.

THE ROANOKE TIMES
roanoke.com

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Carbon monoxide alarms distributed

The devices, which detect gas, will be distributed to those who need it most.

BY KIM O'BRIEN ROOT

928-6473

August 23, 2007

NEWPORT NEWS

Usually, smoke alarms get all the press.

But this time, state fire officials are pushing the importance of carbon monoxide alarms, which can detect the odorless, colorless gas that can kill in a matter of minutes without any warning.

This week, the state Department of Fire Programs began handing out 5,000 carbon monoxide alarms to fire departments and community service organizations across the state.

As part of the first-ever Carbon Monoxide Grant Program, the Newport News Fire Department received 200 of the alarms Wednesday.

The Newport News and New Kent fire departments are the only agencies in Hampton Roads to receive one of the 40 grants from the state. The New Kent Department of Fire and Rescue received 75 of the alarms Tuesday.

The battery-powered First Alert alarms are intended to reach those who might not be able to afford the \$30-\$40 devices as well as those deemed most at-risk for carbon monoxide poisoning - such as the elderly, people with small children and those with disabilities.

State fire officials also hope the program will help get the word out about the importance of having the alarms.

"It's something that every citizen needs to be aware of," said Mark Buff, marketing and communications manager for the Richmond-based Virginia Department of Fire Programs.

Anyone who has gas or oil heat or uses a fireplace, space heater or generator - or who just has a gas stove - can be at risk for carbon monoxide exposure, Buff said. In 2005, six people in Virginia died from such carbon monoxide poisoning, he said.

Nationwide that same year, the U.S. Consumer Product Safety Commission received reports of at least 64 people dying from carbon monoxide poisoning associated with the use of portable generators.

In September 2006, an 83-year-old Newport News woman died when she was overcome by

carbon monoxide that seeped from a generator running in her garage. She was running the generator in the aftermath of Tropical Storm Ernesto.

More recently, carbon monoxide possibly from a natural-gas fired water heater sickened 25 Virginia Tech students in an off-campus apartment building in Blacksburg over the weekend. Three of the five students found unconscious remained hospitalized Wednesday.

The Newport News Fire Department runs a hotline that people can call to check their eligibility for the carbon monoxide alarms. The same hotline - 926-8009 - is used to help distribute smoke alarms across the city.

"We want to reach those people who really need it," said Lisa King, public education and relations coordinator for the Newport News department. "I know we won't have any problem finding a home for our carbon monoxide alarms."

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From: Ed Rhodes [regva@comcast.net]

Sent: Sunday, August 19, 2007 10:30 PM

To: Jimmy Johnson; Jimmy Carter; Deborah Wilmouth; Chris Eudailey; Bill Smith; Chief James Gray; Steve Hall; Jeff Flippo; J. D. Mitchell; David Diamantes; Robbie Dawson; Tom Frazier; Rick Labbate; Mike Reilly; Kenny Dunn; Bobby Lukhard; Throckmorton, David; Denny Linaburg; Bobby Rollston

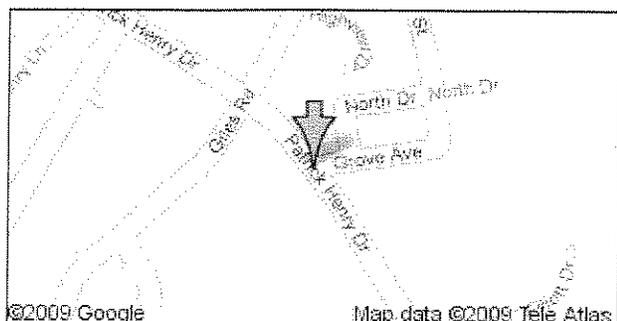
Subject: CO Poisoning at VPI

21 treated, 5 hospitalized after carbon monoxide poisoning

Incident in Blacksburg apartment building discovered as Virginia Tech dedicates memorial to April shooting victims.

By Shawna Morrison

Map of leak



A faulty valve on a hot water heater was to blame for a carbon monoxide leak that sickened at least 20 people -- most of them Virginia Tech students -- at a Blacksburg apartment complex this morning, police said. Five women remained hospitalized Sunday night.

The relief valve on a water heater in an apartment at 1306 Henry Lane was stuck open, Blacksburg police Capt. Bruce Bradbery said. Because of the open valve, fuel was constantly being burned in an attempt to heat the water.

Five young women -- all of them Tech students who live in the same four-bedroom apartment at Collegiate Suites -- were found unresponsive in their beds by a gas company employee who had been called to check out a problem, Bradbery said this afternoon.

A resident of a nearby apartment had gotten sick and called Atmos Energy, thinking there may have been a natural gas leak, Bradbery said. The gas company employee realized there was no natural gas leak but detected the carbon monoxide leak and called police.

All four doors in the women's apartment were closed when the employee went inside, Bradbery said.

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The closed doors, coupled with the build up of gas, meant that it had nowhere to go, he said.

The employee, whom Atmos declined to name, carried the five women out onto a landing for air. Others helped him carry them outside, Bradbery said.

Two of the women still are unable to breathe on their own, Bradbery said. They are on ventilators and are being treated at the University of Virginia Medical Center.

One of the women treated at UVa is 19-year-old Kristin Julia, a Tech sophomore. Her roommate Elizabeth "Lizzy" Burgin, also a 19-year-old sophomore, is at Duke University Medical Center. Burgin's family said she is conscious, responsive and will be kept overnight to clear her lungs.

Two of the other women can breathe on their own but are still unresponsive. They and the fifth woman, whom Bradbery described as semi-conscious, are being treated at Duke University Medical Center.

Seventeen people, including the five women, were taken to Montgomery Regional Hospital, according to hospital spokeswoman Suzanne Barnette. Those 12 patients were released by 7:30 tonight.

Two people were treated at Carilion New River Valley Medical Center outside Radford and also have been released, hospital spokesman Eric Earnhart said.

At least one resident of the apartment complex was treated for anxiety, Bradbery said.

Firestone, Janice (DHCD)

From: Saved by Windows Internet Explorer 7
Sent: Wednesday, August 22, 2007 9:05 PM
Subject: Printer-Friendly Version
Attachments: ATT6575962.dat

One Tech student in serious condition

Four others improving after carbon-monoxide leak in their apartment

Wednesday, Aug 22, 2007 - 12:08 AM

By CARLOS SANTOS
TIMES-DISPATCH STAFF WRITER

CHARLOTTESVILLE -- Virginia Tech sophomore Kristin Julia remained in serious condition yesterday, but four other students hospitalized after a carbon-monoxide leak in their Blacksburg apartment are faring better.

Meanwhile, the owners of the apartment building where the five women were found unresponsive on Sunday are scrambling to make the building safe and promising to install carbon-monoxide detectors in each apartment unit.

Julia, who had been in critical condition, remained in serious condition for the second straight day, according to Peter Jump, a spokesman for the University of Virginia Medical Center, where the Waterford woman is hospitalized.

Julia's roommate, Kirsten Halik of Vienna, also at U.Va., was upgraded from serious to fair condition.

The three students taken to Duke University Medical Center in North Carolina were all listed in good condition yesterday, according to a Duke spokeswoman. The three students are Nichole Howarth of Chesterfield County, Elizabeth Burgin of Ashburn and Carolyn Dorman of Potomac, Md.

The five roommates, all 19 and sophomores, were found unresponsive in an apartment at Collegiate Suites in Blacksburg after a water heater malfunctioned Sunday, according to authorities. The leak sent 19 people to hospitals for treatment, though all were released Sunday except for the five roommates.

Representatives from University Development Inc., the managing agent for the owners of the Collegiate Suites apartment, issued a statement yesterday saying that though carbon-monoxide detectors are not required by code, hard-wired smoke and carbon-monoxide detectors will be installed in each unit at the Collegiate Suites "in coming days or weeks."

The owners -- CSB, LLC III with headquarters in Virginia Beach -- have arranged temporary housing and board for all occupants of the building who didn't choose to stay with family or friends.

"We also have hired an independent contractor to inspect every unit in the complex for safety issues as soon as possible so that students can return to their apartments," the statement said.

The owners of the building, constructed in 1999, are working closely with the town of Blacksburg to confirm the exact details of how the leak occurred, the statement said.

The debate over whether to require single-family homes, apartments and dormitories to have a carbon-monoxide detector has raged for years. Sen. Frank M. Ruff Jr., R-Mecklenburg County, has twice introduced a bill to require the detectors, including one offered this year at the behest of the Virginia State Firefighters Association.

Ruff's second bill, which applies only to college dormitories and assisted-living facilities, was sent this year to the state Housing Commission for study.

"I introduced the bill to get public attention," Ruff said. "Let's get rolling on this. I think if homeowners understood the risk, they would install them themselves."

A July 14, 2006, carbon-monoxide leak at a Roanoke College dormitory killed one person and sent more than 100 to hospitals.

Chris Holstege, a physician and toxicologist at U.Va., is a strong supporter of carbon-monoxide detectors. He has treated dozens of patients at U.Va. suffering from carbon monoxide poisoning, which he called "the most common type of poisoning in the country."

Holstege said he believes carbon-monoxide detectors should be required not only in houses and businesses but in cars and trucks, boats and campers.

Contact Carlos Santos at (434) 295-9542 or csantos@timesdispatch.com.

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Firestone, Janice (DHCD)

From: Saved by Windows Internet Explorer 7
Sent: Tuesday, April 28, 2009 10:30 PM
Subject: Free carbon monoxide detector may have averted a tragedy - Martinsville Bulletin
Attachments: ATT6575993.dat; ATT6575994.dat; ATT6575995.dat

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MARTINSVILLE BULLETIN

Tuesday, April 28, 2009

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Free carbon monoxide detector may have averted a tragedy

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Sunday, January 20, 2008

By PAUL COLLINS - Bulletin Staff Writer

Around 5 a.m. on Thursday, 30-year-old Joey Greer of Fieldale was watching television for a few minutes before he was to leave for work. His wife, Lisa, 29, and their two children — Taylor, 7, and Breanna, 20 months — were asleep.

Suddenly, their newly installed carbon monoxide detector began to blare a loud, constant beeping. An indicator on the alarm indicated "evacuate" because of dangerously high levels of carbon monoxide in the home.

Within about five minutes, the Greers got dressed and ran outside into the snow and sleet. Greer said everyone was fine emotionally, although Taylor was a bit dazed from having been waken up so suddenly.

The detector had been installed only three days before through a Henry County Public Safety program.

The Greers said that after they heard the alarm they smelled soot, but they had smelled nothing before that. Carbon monoxide is an invisible, odorless, tasteless and colorless gas.

After the family was outside the house, Joey Greer drove his wife and children to her mother's house in Fieldale. He returned to the eight-room wood-frame house they rent on Dillons Fork Road. He turned off the furnace, opened windows inside the house and vents underneath the house near the furnace.

He said he figured that there may be a leak in a pipe to the furnace, and he called a friend of his who works with air conditioning for advice on repairs.

After the house aired out for about three hours, Greer began to replace some pipe to the furnace. Friday, he showed one section of pipe with holes, which he speculated may have been caused by age and which may have been the source of the carbon monoxide leak.

Greer worked off and on replacing some sections of pipe to the furnace for nearly five hours, and he got nauseous at times, he said. He finished the work by early afternoon, turned the furnace back on and let it run for 30-60 minutes to make sure it was operating properly, he said.

About 2:30 p.m., Greer called Henry County Public Safety, reported what had happened and told Assistant Fire Marshal Lisa Garrett the level of carbon monoxide that the detector indicated in the house.

By that time, Greer said, the level was zero and Garrett told him the house was safe to reoccupy. The detector level had gotten as high as 108 when the alarm sounded. The detector registers up to 400, he said.

Lisa Greer and the children returned home late Thursday afternoon.

The Greers said they felt fortunate that no one in the family got sick or worse and fortunate that a carbon monoxide detector had been installed in their home just three days before.

According to information from Henry County Public Safety, symptoms of carbon monoxide poisoning can include headaches; irregular breathing; dizziness; blurred vision; confusion, memory loss, loss of coordination; feeling ill/tired at home but fine when away from home; nausea, vomiting; rapid heartbeat; fatigue, not feeling rested after sleep; weakness; loss of consciousness, coma; eventually, seizures, respiratory failure, cardiac arrest. Symptoms may be similar to flu-like symptoms and therefore may be misdiagnosed.

Lisa Greer said all the members of the family were having bad headaches, which she had heard was a symptom of carbon monoxide poisoning. Unsure of whom to contact, the family spoke to a relative who in turn contacted Henry County Public Safety last Monday.

That agency sent a representative to the home the same day, installed a carbon monoxide detector at no charge to the Greers, checked the home for carbon monoxide and found no problem, she said.

Lisa Greer said the carbon monoxide incident "could have potentially made us all very sick and potentially hurt" Breanna, the 20-month-old.

Garrett said carbon monoxide tends to affect young children, older people and those with breathing problems first.



Joey and Lisa Greer stand with their children Breanna, 20 months, and Taylor, 7, besides the carbon monoxide detector on the wall of their home. The detector went off those days after it was installed by Henry County Public Safety last week.

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The Greers said there were several smoke detectors in the home but no carbon monoxide detector until last week. Lisa Greer urges every family to get one, even if it is at its own expense.
Carbon monoxide is "something you don't even know" is there, she said.



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Four hospitalized in Giles Co. after carbon monoxide exposure

Four people were in stable condition in Giles County on Sunday afternoon after inhaling carbon monoxide, authorities said.

First responders rescued a man, two boys and a girl from a house south of Pearisburg about 5:45 a.m., said Giles County Sheriff Morgan Millirons. How the four are related was unclear.

After an investigation, authorities found that the house in the 300 block of Eaton Lane lost power about 1 a.m., and the residents turned on a portable generator in the basement. The residents inhaled exhaust fumes that rose to the main floor.

A sheriff's deputy and a state trooper found the man speaking incoherently outside the house, Millirons said. The four were taken to Carilion Giles Memorial Hospital and were in stable condition.

"You should always keep a portable generator outside of a dwelling no matter what the circumstances are," Millirons said. "We're lucky they were able to call and say they needed help."

-- Jorge Valencia

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

Code Change Form for the 2009 Code Change Cycle

Code Change Number: _____

Proponent Information

(Check one): Individual Government Entity Company

Name: Ron Clements

Representing: Chesterfield County Building Inspection Dept.

Mailing Address: 9800 Government Center Parkway

Email Address: clementsro@chesterfield.gov

Telephone Number: (804) 751-4163

Proposal Information

Code(s) and Section(s): 913.1 Exception #2

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

913.1 General. (No change)

Exceptions:

#2 Building of type IV and V construction without basements Buildings that are constructed with wood framed walls, floors and roof assemblies with non-metallic sheathing materials.

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

A building can be constructed entirely of steel and still be designated type 5B. As an example the current standard Target Store design is a steel column, bar joist and metal roof deck building but to allow for very limited wood framing in some small office areas the buildings are designated as type 5B. The intent of exception #2 was to exempt wood framed buildings, regardless of construction type not exempt based on construction type designations for allowable area determination.

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 TASO (Technical Assistance and Services Office)
The Jackson Center
501 N. 2nd Street
Richmond, VA 23219-1321

Email Address: taso@dhcd.virginia.gov
Fax Number: (804) 371-7092
Phone Numbers: (804) 371-7140 or (804) 371-7150



DEPT. OF HOUSING AND COMMUNITY DEVELOPMENT REGULATORY CHANGE FORM

(Use this form to submit changes to building and fire codes)

<p>Address to submit to:</p> <p>DHCD, the Jackson Center 501 North Second Street Richmond, VA 23219-1321</p> <p>Tel. No. (804) 371 – 7150 Fax No. (804) 371 – 7092 Email: bhcd@dhcd.state.va.us</p>		<p>Document No. _____</p> <p>Committee Action: _____</p> <p>BHCD Action: _____</p>
<p>Submitted by: <u>John Catlett</u> Representing: <u>City of Alexandria</u></p> <p>Address: <u>301 King Street, Alexandria, Va, 22314</u> Phone No.: <u>(703.838.4360)</u></p> <p>Regulation Title: <u>Virginia New Construction Code</u> Section No(s): <u>IBC Section 1020.1.6</u></p>		
<p>Proposed Change:</p> <p>1020.1.6 Stairway <u>identification and floor number signs</u>. A sign shall be provided at <u>identifying the location and at</u> each floor landing in interior exit enclosures connecting more than three stories designating the floor level, the terminus of the top and bottom of the stair enclosure and the <u>stair identification by a letter of the alphabet of the stair</u>. The signage shall also state the story of, and the direction to the exit discharge and the availability of roof access from the stairway for the fire department. The sign shall be located 5 feet (1524 mm) above the floor landing in a position that is readily visible when the doors are in the open and closed positions.</p>		
<p>Supporting Statement: The code currently requires that a stairway be identified. This is so that an occupant can report their location in an emergency and the fire department can locate the appropriate stairway. Currently, there is no standardized method of identification. Some localities have misunderstood that both the floor and stair location should be designated by number. This code change will provide standardized guidance that the stair shall be identified by a letter and the floor designation by number.</p>		

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

Code Change Form for the 2009 Code Change Cycle

Code Change Number: _____

Proponent Information

(Check one): Individual Government Entity Company

Name: Ron Clements

Representing: Chesterfield County Building Inspection Dept.

Mailing Address: 9800 Government Center Parkway

Email Address: clementsro@chesterfield.gov

Telephone Number: (804) 751-4163

Proposal Information

Code(s) and Section(s): IBC 1007.7

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

Revise as follows:

1007.7 (IFC 1007.7) Exterior area for assisted rescue. The exterior area for assisted rescue must be open to the outside air and shall be an area provided on the exterior landing serving an exit door on an accessible route. The exterior area of assisted rescue shall meet the size and access requirements of Section 1007.6.1. Separation walls shall comply with the requirements of Section 704 for exterior walls. Where walls or openings are between the area for assisted rescue and the interior of the building, the building exterior walls within 10 feet (3048 mm) horizontally of a nonrated wall or unprotected opening shall have a fire-resistance rating of not less than 1 hour. Exterior walls separating the exterior area of assisted rescue from the interior of the building shall have a minimum fire resistance rating of 1 hour, rated for exposure to fire from the inside. The fire resistance rated exterior wall construction shall extend horizontally 10 feet (3048mm) beyond the landing on either side of the landing or equivalent fire resistance rated construction is permitted to extend out perpendicular to the exterior wall 4 feet (1220 mm) minimum on the side of the landing. The fire resistance rated construction shall extend vertically from the ground to a point 10 feet (3048 mm) above the floor level of the area for assisted rescue or to the roof line, whichever is lower. Openings within such fire resistance rated exterior walls shall be protected in accordance with section 715 by opening protectives having a fire protection rating of not less than 3/4 hour. This construction shall extend vertically from the ground to a point 10 feet (3048 mm) above the floor level of the area for assisted rescue or to the roof line, whichever is lower.

1007.7.1 (IFC 1007.7.1) Openness. The exterior area for assisted rescue shall be at least 50 percent open, and the open area above the guards shall be so distributed as to minimize the accumulation of smoke or toxic gases.

1007.7.2 (IFC 1007.7.2) Exterior exit stairway. Exterior exit stairways that are part of the means of egress for the exterior area for assisted rescue shall provide a clear width of 48 inches (1219 mm) between handrails.

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

The first text strike-through removed redundant language regarding openness to the exterior. The requirement for openness is provided in detail in section 1007.7.1 therefore the statement is redundant in the first sentence of 1007.7. The added text to the first sentence clearly states that the exterior area for assisted rescue is an area on an exterior landing serving an exit door on an accessible route. This clarifies that the area is on an exterior landing, that it is served by an exit door therefore this is part of the exit discharge and that it is on an accessible route, which guarantees that there is an accessible route to get to the exterior area for assisted rescue. The current language is ambiguous about exactly how the exterior area for assisted rescue fits into the overall means of egress system. The second strike text strike-through removes confusing text that states "building exterior walls within 10 feet (3048 mm) horizontally of a nonrated wall or unprotected opening shall have a fire-resistance rating". That language suggests that some portion of

the separation wall is non rated but the wall beyond the non rated portion is to be rated? It is very confusing text that is corrected in the following new text proposed. The new text attempts to capture the basic technical requirements of the current section with two technical changes. The first was the added text that allows the rated construction to extend out perpendicular from the building on the end of the landing. This is a method that we have used to protect exterior areas for assisted rescue adjacent to, and within 10 feet of, loading dock doors to avoid having to provide a ¾ hour protected opening at the loading dock door. The 4 foot minimum dimension is based on the 4 foot protection required for similar types of exposure protection specified in sections 706.5 Exception #2 and 3, and 706.5.1 exception #1. The second technical change is the requirement for the rating to be for inside exposure. This is based on the current method for prescribing exterior wall fire ratings in section 705.5. Inside exposure is specified in this case since the protection intended is from a fire inside the building. The last change to section 1007.7 is to refer opening protection of the fire rated construction to section 715. Section 715 has the complete opening protection provisions necessary to properly protect the openings. Having the opening protection specification in section 1007.7 without all of the supporting sections provided in section 715 is technically inaccurate. Table 715.4 requires ¾ hour protection in exterior walls so no amendment to the table is required and additionally the current text could be mis-applied to allow ¾ hour opening protection when the wall had a higher fire rating for another purpose, which would not occur with a direct reference to section 715.

Section 1007.7.1 has the text "above the guards" removed because the text accomplishes the performance requirement intended without that text. Additionally an exterior area for assisted rescue could be constructed without a guardrail in some circumstances such as a grade level landing that connects to the public way with a stair in the exit discharge. Lastly "guard" is not a defined term.

Section 1007.7.2 uses the term exterior "exit" stair. Exterior exit stairs are regulated by section 1026 and are an exit component. The exterior stair serving an exterior area for assisted rescue is typically an exit discharge component. If a true section 1026 exit stair is used to serve an exterior area for assisted rescue per 1007.2 exception #2 removal of the work "exit" would not pose a problem because the more generic term "exterior stair" could be applied to an exit stair. Based on these points "exit" is proposed to be deleted from 1007.7.2.

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:

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

Code Change Form for the 2009 Code Change Cycle

Code Change Number: _____

Proponent Information

(Check one): Individual Government Entity Company

Name: Ron Clements

Representing: Chesterfield County Building Inspections

Mailing Address: 9800 Government Center Parkway, Chesterfield County VA, 23832

Email Address: clementsro@chesterfield.gov

Telephone Number: (804) 751-6143

Proposal Information

Code(s) and Section(s): VA Construction code section 3109.3

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

Delete the reference to ANSI/NSPI-1 and ANSI/NSPI-2 entirely and use the 2009 IBC section 3109.3 without ammendment.

Delete: "shall be designed and constructed in comformance with ANSI/NSPI-1 or ANSI/NSPI-2, as applicable"

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

These two standards were submitted to the ICC General committee for reference by the IBC but the code change was denied because the standards have many problems that made them unusable as reference standards. As a plan review engineer that has attempted to use the documents to review commercial pool plans, and a past member of the ICC General committee that reviewed these documents, I can attest the the fact that they are very poor standards. The majority of the substance of these standards are addressing aspects of pools and spas outside of the scope of the building code and it leaves the code user questioning what is enforceable or intended to be enforced. Some examples from the standards are:

5.2.1 Control of sand for beach pool environments; 5.3 Structural design in accordance with accepted engineering practices but no reference to an engineering standard; 5.4 freeze protection requirements for pool shells, filters, pumps, and "other" components not listed; 5.6 regulating colors and finishes of the pool; 6.8 maximum user loads; section 7 regulating the walking area (deck) around the pool; 7.1.16 hose bibs and cross connection that should be regulated by the plumbing code; 7.2 Deck equipment regulations for starting blocks and diving equipment; 8.1.1.1 regulates water clarity; 8.1.2 regulating circulation, 8.2 regulating water velocity; 8.4 regulating guage requirements on pool equipment; section 9 regulation filtration; section 10 regulating pump sizing; section 12 regulation surface skimming; section 19 regulating dressing rooms and facilities; section 19.6 regulating required bathroom facilities that appear to override the Plumbing code; Section 20 regulating spectator areas; section 21 regulation food consumption within the pool; section 22 regulation management of the pool.

I could go on but you get the point. If there is a specific aspect of pool design that is not addressed by the IBC the specific aspect should be placed into the IBC without reference to the standard, or the specific section should be referenced.

The 2009 IBC regulates the fence or barrier required around the pool and required entrapment avoidance is regulated through a reference to the ANSI/APSP-7 standard for entrapment avoidance. Note that ANSI NSPI-1 also has a section on entrapment avoidance that is no longer valid based on the 2009 reference to ANSI/APSP-7.

Submittal Information

Date Submitted:

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Email Address: taso@dhcd.virginia.gov
Fax Number: (804) 371-7092
Phone Numbers: (804) 371-7140 or (804) 371-7150



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

Code Change Form for the 2009 Code Change Cycle

Code Change Number: _____

Proponent Information

(Check one): Individual Government Entity Company

Name: J. Kenneth Payne, Jr., AIA

Representing: VSAIA

Mailing Address: 3200 Norfolk Street, Richmond, Virginia 23230

Email Address: kpayne@moseleyarchitects.com

Telephone Number: 804-794-7555

Proposal Information

Code(s) and Section(s): IMC 202 - Definitions

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

COMMERCIAL COOKING APPLIANCES. Appliances used in a commercial food service establishment for heating or cooking food and which produce grease vapors, steam, fumes, smoke or odors in sufficient quantities to constitute a hazard, that are required to be removed through a local exhaust ventilation system. Such appliances include deep fat fryers; upright broilers; griddles; broilers; steam-jacketed kettles; hot-top ranges; under-fired broilers (charbroilers); ovens; barbecues; rotisseries; and similar appliances. For the purpose of this definition, a food service establishment shall include any building or a portion thereof used for the preparation and serving of food where any of the following conditions apply:

1. For compensation, trade, or services rendered
2. With "Extra-heavy duty," "Heavy-duty," and "Medium-duty" cooking appliances
3. Where the cooking operation or type of cooking is not consistent with operations and types of cooking in a residential dwelling unit
4. Where the cooking operation or type of cooking produces byproducts that are not consistent with those produced in a residential dwelling unit
5. Where the intended use of the cooking appliances is not consistent with that of a residential dwelling unit

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

Clarification is needed in the text of the code to address when commercial hoods and exhaust are required for various cooking appliances and/or operations. This is confirmed by the IMC Commentary devoting nearly 2-1/2 pages of Commentary in trying to explain when commercial hoods and exhaust are applicable. The proposed change includes terms also used throughout the IMC Commentary in order to remain consistent with prevailing applicability of the code.

LAHJ are all over the board when it comes to applying commercial hoods and exhaust to appliances, including rooms and spaces in hotel rooms, home ec labs in schools, lunch rooms, break rooms, police and fire stations, community room, bed-and-breakfast lodgings, and similar locations with domestic-type appliances that might be located within a commercial-type building.

Since the code is concerned with *sufficient* quantities or *significant* amounts of grease vapors, steam, fumes, smoke or odors, then let's get that into the definition. If those conditions do not apply, then it would not be considered a "commercial" cooking appliance.

The five conditions attempt to address those situations where a church might use their "domestic" appliances to sell food as a fund-raising event; or frequency of events; or where students may be learning how to cook in a commercial institution in a culinary arts program.

"Light-duty" cooking appliances were omitted, since those appliances produce the smallest amounts of grease vapors, steam, fumes, smoke or odors. However, if any of the other conditions are met, even with a "Light-duty" cooking appliance, then it would be considered a "commercial" cooking appliance and would require a commercial hood and exhaust.

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 TASO (Technical Assistance and Services Office)
The Jackson Center
501 N. 2nd Street
Richmond, VA 23219-1321

Email Address: taso@dhcd.virginia.gov
Fax Number: (804) 371-7092
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VIRGINIA DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
DIVISION OF BUILDING AND FIRE REGULATION

Code Change Form for the 2009 Code Change Cycle

Code Change Number: _____

Proponent Information

(Check one): Individual Government Entity Company

Name: Dustin McLehane and Curt Campbell

Representing: Virginia Plumbing and Mechanical Inspectors Association

Mailing Address: 9800 Government Center Parkway
Chesterfield, Virginia 23832

Email Address: McLehaneD@chesterfield.gov
CampbellC@chesterfield.gov

Telephone Number: 804-317-6420 (Dustin)
804-814-7003 (Curt)

Proposal Information

Code(s) and Section(s): 406.3 IPC

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

Reads as follows:

406.3 Waste Connection. The waste from an automatic clothes washer shall discharge through an air break into a standpipe in accordance with section 802.4 or into a laundry sink. The trap and fixture drain for an automatic clothes washer standpipe shall be a minimum of 2 inches (51 mm) in diameter. The automatic clothes washer fixture drain shall connect to a BRANCH DRAIN or drainage stack a minimum of 3 inches (76mm) in diameter. Automatic clothes washers that discharge by gravity shall be permitted to drain to a waste receptor or an approved trench drain.

Revise as follows:

406.3 Waste Connection. The waste from an automatic clothes washer shall discharge through an air break into a standpipe in accordance with section 802.4 or into a laundry sink. The trap and fixture drain for an automatic clothes washer standpipe shall be a minimum of 2 inches (51 mm) in diameter. The automatic clothes washer fixture drain shall connect to a FIXTURE BRANCH or drainage stack a minimum of 3 inches (76mm) in diameter. Automatic clothes washers that discharge by gravity shall be permitted to drain to a waste receptor or an approved trench drain.

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

Cost: This change is to clarify some confusion of the written code text. There would be no cost to the contractors or customers if this code change is approved.

Reason: The word branch drain needs to be removed and replaced with fixture branch since the code book gives no definition of branch drain. By having language in this section that is not defined in the definition section creates confusion, which is evident based on the number of questions we receive on this issue. The confusion for the contractors is how far can I run the 2" fixture drain, when and where do I need to transition to 3". By replacing branch drain with fixture branch the contractor now knows that the fixture drain can remain 2" until it becomes a fixture branch (A drain serving two or more fixtures that discharges to another drain or to a stack) or is connected to a drainage stack.

Submittal Information

Date Submitted: 5/19/09

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 TASO (Technical Assistance and Services Office)
The Jackson Center
501 N. 2nd Street
Richmond, VA 23219-1321

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

Code Change Form for the 2009 Code Change Cycle

Code Change Number: _____

Proponent Information

(Check one):

Individual Government Entity Company

Name: J. Lee Lipscomb, Dustin McLehane and Curt Campbell

Representing: Chesterfield County Virginia Building Inspection Department

Mailing Address: 9800 Government Center Parkway

Email Address: Lipscomb1@chesterfield.gov

Telephone Number: (804) 748-1309

Proposal Information

Code(s) and Section(s): Virginia Plumbing Code; Definitions, 909.1 and 9091.1

Revise as follows: BATHROOM GROUP. A group of fixtures consisting of any combination of fixtures from this list: a water closet, lavatory, bathtub or shower, including or excluding a bidet, an emergency floor drain or both. Such fixtures are located together on the same floor level.

909.1 Horizontal wet vent permitted. Any combination of fixtures located within one or two bathroom groups located on the same floor level are permitted to be vented by a wet vent. The wet vent shall be considered the vent for the fixtures and shall extend from the connection of the dry vent along the direction of the flow in the drain pipe to the most downstream fixture drain connection to the horizontal branch drain. Only the fixtures within the bathroom group(s) shall connect to the wet-vented horizontal branch drain. Any additional fixtures shall discharge downstream of the wet vent.

909.1.1 Vertical wet vent permitted. Any combination of fixtures within one or two bathroom groups located on the same floor level is permitted to be vented by a vertical wet vent. The vertical wet vent shall be considered the vent for the fixtures and shall extend from the connection of the dry vent down to the lowest fixture drain connection. Each wet-vented fixture shall connect independently to the vertical wet vent. Water closet drains shall connect at the same elevation. Other fixture drains shall connect above or at the same elevation as the water closet fixture drains. The dry-vent connection to the vertical wet vent shall be an individual or common vent serving one or two fixtures.

Reason: The change to the definition of a bathroom group makes it consistent with the first sentence of sections **909.1 Horizontal wet vent permitted** and **909.1.1 Vertical wet vent permitted**. Current code language in sections **909.1 Horizontal wet vent permitted** and **909.1.1 Vertical wet vent permitted** prohibits the wet venting of a single bathroom group. The new code language to sections **909.1 Horizontal wet vent permitted** and **909.1.1 Vertical wet vent permitted** clarifies that wet venting is permitted in one or two bathroom groups. The IPC Commentary also states "Wet venting is a method of venting any combination of fixtures within a single or double bathroom group."

Submittal Information

Date Submitted: 01 June 2009

Code Change Number: _____

Proponent Information

(Check one):

Individual

Government Entity

Company

Name: J. Lee Lipscomb, Dustin McLehaney and Curt Campbell

Representing: Chesterfield County Virginia Building Inspection Department

Mailing Address: 9800 Government Center Parkway

Email Address: Lipscombl@chesterfield.gov

Telephone Number: (804) 748-1309

Proposal Information

Code(s) and Section(s): Virginia Residential Code; Definitions, 3108.1 and 3108.4

Revise as follows: BATHROOM GROUP. A group of fixtures consisting of any combination of fixtures from this list: a water closet, lavatory, bathtub or shower, including or excluding a bidet, an emergency floor drain or both. Such fixtures are located together on the same floor level.

P3108.1 Horizontal wet vent permitted. Any combination of fixtures within one or two bathroom groups located on the same floor level are permitted to be vented by a horizontal wet vent. The wet vent shall be considered the vent for the fixtures and shall extend from the connection of the dry vent along the direction of the flow in the drain pipe to the most downstream fixture drain connection. Each fixture drain shall connect horizontally to the horizontal branch being wet vented or shall have a dry vent. Each wet-vented fixture drain shall connect independently to the horizontal wet vent. Only the fixtures within the bathroom group(s) shall connect to the wet-vented horizontal branch drain. Any additional fixtures shall discharge downstream of the horizontal wet vent.

P3108.4 Vertical wet vent permitted.-A Any combination of fixtures within one or two bathroom groups located on the same floor level are permitted to be vented by a vertical wet vent. The vertical wet vent shall be considered the vent for the fixtures and shall extend from the connection of the dry vent down to the lowest fixture drain connection. Each wet-vented fixture shall connect independently to the vertical wet vent. All water closet drains shall connect at the same elevation. Other fixture drains shall connect above or at the same elevation as the water closet fixture drains. The dry-vent connection to the vertical wet vent shall be an individual or common vent serving one or two fixtures.

Reason: The change to the definition of a bathroom group makes it consistent with the first sentence of sections **P3108.1 Horizontal wet vent permitted** and **P3108.4 Vertical wet vent permitted**. Current code language in sections **P3108.1 Horizontal wet vent permitted** and **P3108.4 Vertical wet vent permitted** prohibits the wet venting of a single bathroom group. The new code language to sections **P3108.1 Horizontal wet vent permitted** and **P3108.4 Vertical wet vent permitted** clarifies that wet venting is permitted in one or two bathroom groups. The IRC Commentary also states "Wet venting is a method of venting any combination of fixtures within a single or double bathroom group."

Submittal Information

Date Submitted: 01 June 2009

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

Code Change Form for the 2009 Code Change Cycle

Code Change Number: _____

Proponent Information

(Check one): Individual Government Entity Company

Name: Joseph Boisseau

Representing: Fire Official

Mailing Address: 100-B Highland Ave Colonial Heights, VA 23834

Email Address: boisseauj@colonial-heights.com

Telephone Number: 804-520-9376

Proposal Information

Code(s) and Section(s): 104.1.2

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

104.1.2 - Any Virginia Forestry Warden with summonings powers shall have the authority to enforce the Open Burning Regulations of the Statewide Fire Prevention Code.

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

Forestry Wardens issues summons under the Forestry Code, which is in line with the open burning regulations of the fire code.

Submittal Information

Date Submitted: 05/21/09



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 TASO (Technical Assistance and Services Office)

The Jackson Center

501 N. 2nd Street

Richmond, VA 23219-1321

Email Address: tsu@dhcd.virginia.gov

Fax Number: (804) 371-7092

Phone Numbers: (804) 371-7140 or (804) 371-7150



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

Code Change Form for the 2009 Code Change Cycle

Code Change Number: _____

Proponent Information

(Check one): Individual Government Entity Company

Name: Robby Dawson

Representing: Virginia Fire Services Board

Mailing Address: 1005 Technology Park Drive, Glen Allen, VA 23059

Email Address: dawsonj@chesterfield.gov

Telephone Number: 804-717-6838

Proposal Information

Code(s) and Section(s): SFPC Sections 106.3 and 110.2

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

Change Section 106.3 and add Section 110.2 to read:

Section 106.0. Duties and powers of the fire official.

106.1. General: The fire official shall enforce the provisions of the SFPC as provided herein and as interpreted by the State Building Code Technical Review Board (TRB) in accordance with § 36-118 of the Code of Virginia.

106.2. Delegation of duties and powers: The fire official may delegate duties and powers subject to any limitations imposed by the local governing body. The fire official shall be responsible that any powers and duties delegated are carried out in accordance with this code.

106.3. Inspections: The fire official is authorized to conduct such inspections as are deemed necessary to determine the extent of compliance with the provisions of this code and to approve reports of inspection by approved agencies or individuals. All reports of such inspections by approved agencies and individuals shall be prepared and submitted in writing for review and approval. Inspection reports shall be certified by a responsible officer of such approved agency or by the responsible individual. The fire official is authorized to engage such expert opinion as deemed necessary to report upon unusual, detailed or complex technical issues in accordance with local policies. If during the inspection of a premises, a building or structure or any building system, in whole or in part, constitutes a clear and distinct threat to human life, safety or health, the fire official shall issue such notice or orders to remove or remedy the conditions as shall be deemed necessary for compliance with the intent of this code.

106.3.1. Observations: When, during an inspection, the fire official or an authorized representative observes an apparent or actual violation of another law, ordinance or code not within the official's authority to enforce, such official shall report the findings to the official having jurisdiction in order that such official may institute the necessary measures.

106.4. Alternatives: The SFPC provisions are not intended to prevent the use of any safeguards used to protect life and property from the hazards of fire or explosion that are not specifically prescribed by the SFPC, provided that such alternative safeguards comply with the intent of the SFPC. The alternative safeguard offered shall be, for the purpose intended, at least the equivalent of that prescribed in this code in quality, strength, effectiveness, fire-resistance, durability and safety.

Add new Section 110.2 to read:

110.2 Maintenance of safeguards and matters not provided for. Whenever or wherever any device, equipment, system, condition, arrangement, level of protection, or any other feature or condition is required for compliance with the provisions of this code, or otherwise installed, such device, equipment, system, condition, arrangement, level of protection, or other feature shall thereafter be continuously maintained in accordance with this code and applicable referenced standards. When in the opinion of the fire official, failure to maintain any device, equipment, system, condition, arrangement, level of protection, or any other feature or condition required for compliance with the provisions of this code, that creates conditions that constitute a clear and distinct hazard to building, structures or occupants thereof may be deemed a fire hazard and unsafe within the meaning of this code.

(Renumber subsequent sections.)

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

The objective is based upon evolving technology that sometimes results in a situation or circumstance that the code does not readily address. The reasonable application of the code to such hazardous, unforeseen conditions is provided for through this change. Clearly, such a section is needed and the fire code official's experience and judgment must be used. The section, however, does not override requirements that may be preferred when the code provides alternative methods. Additionally, the section can be used to better implement or enforce the code's intention and any general performance-oriented language contained in the code when specificity is absent from the code.

Submittal Information

Date Submitted: _____

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

Code Change Form for the 2009 Code Change Cycle

Code Change Number: _____

Proponent Information

(Check one): Individual Government Entity Company

Name: Joseph Boisseau

Representing: Fire Official

Mailing Address: 100-B Highland Ave Colonial Heights, VA 23834

Email Address: boisseauj@colonial-heights.com

Telephone Number: 804-520-9376

Proposal Information

Code(s) and Section(s): 104.1.2 610

Proposed Change (including all relevant section numbers, if multiple sections):
610.1 - This section covers the location, use, testing, and maintenance of Automated External Defibrillators (AED).
610.2 - AED shall be installed clearly visible with easy access, mounted 3' to 5' from the floor surface. AED shall not be obstructed from access or view.
610.3 - Any storage cabinets shall be approved for use and openable without a key, special knowledge, or effort.
610.4 - AED shall be tested, inspected, and maintained per the manufactures recommendations.
610.5 - No person shall tamper with, remove, or disturb the AED unless it is for an emergency, testing, inspection, or maintainance. If the AED is removed from service, any signs or symbols indicating it's location shall be removed so as not to give someone a false impression to the location of an AED.

Supporting Statement (including intent, need, and impact of the proposal):
There is nothing in the current Fire Code that covers Automated External Defibrillators. The AED is becoming common place in all types of businesses, shops, malls, and public buildings. It is time that some type of regulations be in place to cover the AED to make them useful when they are needed.

Submittal Information

Date Submitted: 05/21/09

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 TASO (Technical Assistance and Services Office)

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

Code Change Form for the 2009 Code Change Cycle

Code Change Number: _____

Proponent Information

(Check one): Individual Government Entity Company

Name: Joseph Boisseau

Representing: Fire Official

Mailing Address: 100-B Highland Ave Colonial Heights, VA 23834

Email Address: boisseauj@colonial-heights.com

Telephone Number: 804-520-9376

Proposal Information

Code(s) and Section(s): 3301.1.3

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

It shall be unlawful for any person 16 years of age or younger to possess, purchase, use, or ignite any permissible firework, unless under the direct supervision of a parent or guardian. No person shall sell permissible fireworks to any person 16 years of age or younger.

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

National Fire Protection Association and Emergency Room documentation reports that half or more of all injuries related to fireworks are suffered to juveniles.

Submittal Information

Date Submitted: 05/21/09

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

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The Jackson Center
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