ROP MEETING AGENDA

Building Code – Life Safety Technical Committee on Residential Occupancies

Wednesday, December 9, 2009
Embassy Suites Hotel Cleveland – Downtown
Cleveland, Ohio

1. **Call to order.** Call meeting to order by Chair Warren Bonisch at 8:00 a.m.

2. **Introduction of attendees.** See pg. 02.

3. **Approval of minutes.** Approve the October 23, 2007 meeting minutes. See pg. 05.

4. **Occupancy chapter__.2.4 subsection review.** See pg. 08.

5. **Smoke barrier door latching.** See pg. 09.

6. **Standardization of sprinkler system supervision language.** (No attachment.)

7. **Consistency of list-based options.** (No attachment.)

8. **NFPA 101 core chapter ROP draft.** See pg. 12.


10. **NFPA 5000 proposals.** See pg. 108.

11. **Other business.**

12. **Future meetings.**

13. **Adjournment.**

Attachments
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<tr>
<th>Name</th>
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<td><strong>Residential Occupancies</strong></td>
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<td><strong>Safety to Life</strong></td>
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<tr>
<td>Warren D. Bonisch</td>
<td>Chair</td>
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<td>H. Wayne Boyd</td>
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<td>Ralph D. Gerdes</td>
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<td>Stanley C. Harbuck</td>
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<td>School of Building Inspection</td>
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<td>Alternate: Jake Pauls</td>
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<td><strong>Secretary (Staff-Nonvoting)</strong></td>
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<td>Gregory E. Harrington</td>
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<td>James R. Bell</td>
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<td>Marriott International, Inc.</td>
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<td>Harry L. Bradley</td>
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<td>Daniel P. Finnegan</td>
<td>Principal</td>
<td>SAF-RES</td>
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<td>Siemens Building Technologies, Inc.</td>
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<td>Automatic Fire Alarm Association, Inc.</td>
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<td>Kenneth E. Isman</td>
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<td>Alternate: Donald J. Pamplin</td>
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</table>
# Residential Occupancies

## Safety to Life

<table>
<thead>
<tr>
<th>Name</th>
<th>Principal/Alternate</th>
<th>Address</th>
<th>Phone</th>
<th>Date</th>
</tr>
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<tbody>
<tr>
<td>James K. Lathrop</td>
<td>SE</td>
<td>Principal Koffel Associates, Inc. 81 Pennsylvania Avenue Niantic, CT 06357</td>
<td></td>
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</tr>
<tr>
<td>Eric N. Mayl</td>
<td>SE</td>
<td>Principal Core Engineers Consulting Group, LLC 5171 MacArthur Blvd., Suite 200 Washington, DC 20016</td>
<td></td>
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</tr>
<tr>
<td>Ronald G. Nickson</td>
<td>U</td>
<td>Principal National Multi Housing Council 1850 M Street NW, Suite 540 Washington, DC 20036</td>
<td></td>
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</tr>
<tr>
<td>Steven Orlowski</td>
<td>U</td>
<td>Principal National Association of Home Builders 1201 15th Street, NW Washington, DC 20005-2800 Alternate: Lawrence Brown</td>
<td></td>
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<tr>
<td>Henry Paszczuk</td>
<td>E</td>
<td>Principal Connecticut Department of Public Safety 1111 Country Club Road Middletown, CT 06457</td>
<td></td>
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<tr>
<td>Peter Puhlick</td>
<td>U</td>
<td>Principal University of Connecticut Facilities Operations Unit 3038 Co-Generation/Central Utilities Plant Storrs, CT 06269-3038</td>
<td></td>
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<tr>
<td>Richard Jay Roberts</td>
<td>M</td>
<td>Principal Honeywell Life Safety 3825 Ohio Avenue St. Charles, IL 60174 National Electrical Manufacturers Association</td>
<td></td>
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<tr>
<td>John A. Sharry</td>
<td>U</td>
<td>Principal Beakmann Properties Sharry &amp; Associates, Inc. 6928 New Melones Circle Discovery Bay, CA 94514-2636</td>
<td></td>
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<tr>
<td>Jeffrey L. Shearman</td>
<td>U</td>
<td>Principal Zurich Services Corporation PO Box 15844 Pittsburgh, PA 15244 NFPA Lodging Industry Section</td>
<td></td>
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</tr>
<tr>
<td>Stephen V. Skalko</td>
<td>M</td>
<td>Principal Portland Cement Association 128 Summerfield Drive Macon, GA 31210</td>
<td></td>
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<tr>
<td>T. Hugh Talley</td>
<td>M</td>
<td>Principal Hugh Talley Company 3232 Landmark Drive Morristown, TN 37814 American Furniture Manufacturers Association</td>
<td></td>
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<tr>
<td>Joseph H. Versteeg</td>
<td>SE</td>
<td>Principal Versteeg Associates 86 University Drive Torrington, CT 06790</td>
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<tr>
<td>Lawrence Brown</td>
<td>U</td>
<td>Alternate: National Association of Home Builders 1201 15th Street, NW Washington, DC 20005-2800 Principal: Steven Orlowski</td>
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### Address List No Phone

**Residential Occupancies**

#### Safety to Life

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<tr>
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<tbody>
<tr>
<td>David Cook</td>
<td>Ralph Gerdes Consultants, LLC</td>
<td>SE</td>
<td>10/1/1995</td>
<td>5510 South East Street, Suite E, Indianapolis, IN 46227</td>
</tr>
<tr>
<td></td>
<td>Principal: Ralph D. Gerdes</td>
<td></td>
<td>SAF-RES</td>
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<tr>
<td>Michael F. Meehan</td>
<td>Virginia Sprinkler Company, Inc.</td>
<td>IM</td>
<td>4/15/2004</td>
<td>1417 Miller Store Road, Suite C, Virginia Beach, VA 23322</td>
</tr>
<tr>
<td></td>
<td>Principal: Phillip A. Brown</td>
<td></td>
<td>SAF-RES</td>
<td>American Fire Sprinkler Association, Virginia Beach, VA 23322</td>
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<td>Principal: Phillip A. Brown</td>
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<tr>
<td>Jake Pauls</td>
<td>Jake Pauls Consulting Services in Building Use &amp; Safety</td>
<td>C</td>
<td>7/12/2001</td>
<td>12507 Winexburg Manor Drive, Suite 201, Silver Spring, MD 20906</td>
</tr>
<tr>
<td></td>
<td>Principal: Stanley C. Harbuck</td>
<td></td>
<td>SAF-RES</td>
<td>American Public Health Association, Silver Spring, MD 20906</td>
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<td></td>
<td>Principal: Marshall A. Klein</td>
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<td>SAF-RES</td>
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<tr>
<td>Donald J. Pamplin</td>
<td>National Fire Sprinkler Association, Inc.</td>
<td>M</td>
<td>10/23/2003</td>
<td>1436 Harrison Avenue, Blaine, WA 98230</td>
</tr>
<tr>
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<td>Principal: Kenneth E. Isman</td>
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<td>SAF-RES</td>
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<tr>
<td>Dennis L. Pitts</td>
<td>American Forest &amp; Paper Association</td>
<td>M</td>
<td>5/15/2000</td>
<td>1721 West Plano Parkway, #224, Plano, TX 75075</td>
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<tr>
<td></td>
<td>American Forest &amp; Paper Association</td>
<td></td>
<td>SAF-RES</td>
<td>Principal: Sam W. Francis</td>
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**SAF-RES**

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<tbody>
<tr>
<td>Gregory E. Harrington</td>
<td>National Fire Protection Association</td>
<td></td>
<td>SAF-RES</td>
<td>1 Batterymarch Park, Quincy, MA 02169-7471</td>
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<td>Principal: Gregory E. Harrington</td>
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<td>SAF-RES</td>
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**Staff Liaison**

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Building Code – Life Safety Technical Committee on Residential Occupancies

ROC MEETING MINUTES

Tuesday, October 23, 2007

Marriott Providence Downtown
Providence, Rhode Island

1. **Call to Order.** The meeting was called to order by Chair Warren Bonisch at 8:00 AM on Tuesday, October 23, 2007 at the Marriott Providence Downtown, Providence, RI.

2. **Introduction of committee members and guests.** The following committee members and guests were in attendance (see Attachment A for the updated committee roster):

   **TECHNICAL COMMITTEE MEMBERS**

<table>
<thead>
<tr>
<th>NAME</th>
<th>REPRESENTING</th>
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<tbody>
<tr>
<td>Warren Bonisch, Chair</td>
<td>Schirmer Engineering Corporation</td>
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<tr>
<td>Gregory Harrington, Secretary (Nonvoting)</td>
<td>NFPA</td>
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<tr>
<td>Gordon Bates, Principal</td>
<td>Minneapolis Fire Department</td>
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<tr>
<td>Harry Bradley, Principal</td>
<td>Maryland State Fire Marshals Office Rep. International Fire Marshals Association</td>
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<tr>
<td>Byron Briese, Principal</td>
<td>The RJA Group, Inc. Rep. NFPA Lodging Industry Section</td>
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<tr>
<td>Lawrence Brown</td>
<td>National Association of Home Builders</td>
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<td>(alt. to S. Orlowski)</td>
<td>American Fire Sprinkler Association, Inc.</td>
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<td>Phillip Brown, Principal</td>
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<td>School of Building Inspection Rep. American Public Health Association</td>
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<td>James Lathrop, Principal</td>
<td>Koffel Associates, Inc.</td>
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<tr>
<td>Ronald Nickson, Principal</td>
<td>National Multi Housing Council</td>
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3. **Approval of Minutes.** The minutes of the January 9, 2007 meeting were approved as written and distributed.

4. **Chair’s Report** – Warren Bonisch. The chair welcomed and thanked the committee members present for attending, and indicated the primary purpose of the meeting was to prepare the Reports on Comments for the 2009 editions of NFPA 101 and NFPA 5000.
5. **Review of NFPA 101 Core Chapter ROC-Proposed Changes.** The committee reviewed a summary of actions taken by the core chapter committees at their ROC meetings (Attachment B) to determine if their actions affected the residential chapters and, if so, whether any follow-up action was needed by this committee. This review resulted in the development of several committee comments; see the ROC for the comments and actions.

6. **NFPA 101 and NFPA 5000 Comments.** All public proposals were addressed and committee comments were developed; see the Reports on Comments.

7. **Other Business.** In response to Comment 5000-189, the committee agreed that a task group should be appointed prior to the next revision cycle to address the issue of dwelling/garage separation.

8. **Future Meetings.** The next meeting will most likely be in early 2010 to prepare the ROPs for the 2012 editions of NFPA 101 and NFPA 5000.

9. **Adjournment.** The meeting adjourned at 5:00 PM.

Minutes prepared by:
Gregory Harrington, P.E., Nonvoting Secretary

**Attachments**
Submitter: Eddie Phillips, Southern Regional Fire Code Development Committee

Recommendation: Revise the titles of various X.2.4 subsections from "NUMBER OF EXITS", to "NUMBER OF MEANS OF EGRESS". The subsections involved are: 12.2.4; 13.2.4; 14.2.4; 15.2.4; 16.2.4; 17.2.4; 18.2.4; 19.2.4; 20.2.4; 21.2.4; 22.2.4; 23.2.4; 28.2.4; 29.2.4; 30.2.4; 31.2.4; 32.2.4; 33.2.4; 36.2.4; 37.2.4; 38.2.4; and 39.2.4.

Substantiation: From time to time a question arises as to why some subsections are titled "NUMBER OF EXITS" and others are titled "NUMBER OF MEANS OF EGRESS" and most all subsections noted reference to 7.2.4 "NUMBER OF MEANS OF EGRESS". It is understood from NFPA staff that there is no reason for this difference and that "NUMBER OF MEANS OF EGRESS" is the preferred title. This proposal is intended to eliminate confusion over the title differences and to provide some additional uniformity in the Code.

Committee Meeting Action: Accept in Principle

Do what the submitter requests and revise the titles of various X.2.4 subsections from "NUMBER OF EXITS", to "NUMBER OF MEANS OF EGRESS". The subsections involved are: 12.2.4; 13.2.4; 14.2.4; 15.2.4; 16.2.4; 17.2.4; 18.2.4; 19.2.4; 20.2.4; 21.2.4; 22.2.4; 23.2.4; 28.2.4; 29.2.4; 30.2.4; 31.2.4; 32.3.2.4; 33.3.2.4; 36.2.4; 37.2.4; 38.2.4; and 39.2.4.

Additionally, get the occupancy chapter technical committees to review all x.2.4 subsections and revise them as needed to correlate with the name change addressed above.

Committee Statement: The Committee Meeting Action does what the submitter requested but correct the references for Chapter 32 and 33. Additionally, the action asks the occupancy chapter technical committees to further revise the affected x.2.4 subsections for correlation with the title change.
The provision of 8.5.4.3 was added for the 2003 edition of the Code as part of an editorial rewrite of the smoke barrier provisions for compliance with the NFPA Manual of Style. It appears this provision was added with the assumption that all smoke barriers are also fire barriers; such is not the case. There is no general rule in Section 8.5 that smoke barriers must also be fire barriers, and there is also no general requirement that smoke barrier doors be positive-latching. In my opinion, for the application you describe, doors in a non-fire rated smoke barrier used to separate a communicating space from the remainder of the building per 8.6.6(4)(a) should not be required to be positive-latching. The provision of 8.5.4.3 reminds the user that doors in some smoke barriers that are also fire barriers, such as those in health care occupancies, are not required to be positive-latching.

We will flag this issue for clarification in a future edition of the Code.

Please note the authority having jurisdiction determines compliance with the Code.

This response does not represent a Formal Interpretation as noted below.

Gregory Harrington, P.E.
Principal Fire Protection Engineer
NFPA – Quincy, MA  USA

IMPORTANT NOTICE: This correspondence is not a Formal Interpretation issued pursuant to NFPA Regulations. Any opinion expressed is the personal opinion of the author, and does not necessarily represent the official position of the NFPA or its Technical Committees. In addition, this correspondence is neither intended, nor should be relied upon, to provide professional consultation or services.

Visit www.firepreventionweek.org or call 800-344-3555 for more information.
separation walls which form smoke-resisting partitions (not necessarily smoke partitions in accordance with 8.4).

Is it the intent of the LSC to require doors in non-rated smoke barriers to be positive latchings for communicating spaces in assembly and business occupancies?

Ajay V. Prasad, P.E.
Senior Engineer
Hughes Associates, Inc.
Fire Protection/Code Consulting/Security
3610 Commerce Drive, Suite 917
Baltimore, MD 21227-1652
T 410.737.8677
F 410.737.8698
aprasad@haifire.com
8.5.4.2 Where required by Chapters 11 through 43, doors in smoke barriers shall comply with the requirements of 8.2.2.5.

8.5.4.3 Latching hardware shall not be required on doors in smoke barriers where permitted by Chapters 11 through 43.

8.6.6 Communicating Space. Unless prohibited by Chapters 11 through 43, unenclosed floor openings forming a communicating space between floor levels shall be permitted, provided that the following conditions are met:

(1) The communicating space does not connect more than three contiguous stories.

(2) The lowest or next-to-lowest story within the communicating space is a street floor.

(3) The entire floor area of the communicating space is open and unobstructed, such that a fire in any part of the space will be readily obvious to the occupants of the space prior to the time it becomes an occupant hazard.

(4) The communicating space is separated from the remainder of the building by fire barriers with not less than a 1-hour fire resistance rating, unless one of the following is met:
   (a) In buildings protected throughout by an approved automatic sprinkler system in accordance with Section 9.7, a smoke barrier in accordance with Section 8.5 shall be permitted to serve as the separation required by 8.6.6(4).
   (b) The requirement of 8.6.6(4) shall not apply to fully sprinklered residential housing units of detention and correctional occupancies in accordance with 22.3.1(2) and 23.3.1.1(2).

(5) The communicating space has ordinary hazard contents protected throughout by an approved automatic sprinkler system in accordance with Section 9.7 or has only low hazard contents. (See 6.2.2.)

(6) Egress capacity is sufficient to allow all the occupants of all levels within the communicating space to simultaneously egress the communicating space by considering it as a single floor area in determining the required egress capacity.

(7)* Each occupant within the communicating space has access to not less than one exit without having to traverse another story within the communicating space.

(8) Each occupant not in the communicating space has access to not less than one exit without having to enter the communicating space.
Chapter 1 Administration

1.7 Technical Assistance.
1.7.1 The AHJ shall be permitted to require a review by an approved independent third party with expertise in the matter to be reviewed at the submitter's expense. (1:1.15.1)
1.7.2 The independent reviewer shall provide an evaluation and recommend necessary changes of the proposed design, operation, process, or new technology to the AHJ. (1:1.15.2)
1.7.3 The AHJ shall be authorized to require design submittals to bear the stamp of a registered design professional. (1:1.15.3)
1.7.4 The AHJ shall make the final determination as to whether the provisions of this Code have been met. (1:1.15.4)

Chapter 2 Referenced Publications

2.1 General.
2.1.1 The documents referenced in this chapter or portions of such documents thereof listed in this chapter are referenced within this Code and shall be considered part of the requirements of this document.
2.1.2* Documents referenced in this chapter or portion of such documents shall only be applicable to the extent called for within other chapters of this Code.

A.2.1.2 For example, NFPA 10, Standard for Portable Fire Extinguishers is referenced in Chapter 2. This does not mean that all buildings must have portable fire extinguishers. Portable fire extinguishers are mandatory only to the extent called for elsewhere in the Code.
2.1.3 Where the requirements of a referenced code or standard differ from the requirements of this Code, the requirements of this Code shall govern.
2.1.4* Referenced Publications. Existing buildings or installations that do not comply with the provisions of the codes or standards referenced in this chapter shall be permitted to be continued in service, provided that the lack of conformity with these documents does not present a serious hazard to the occupants as determined by the authority having jurisdiction.

2.2* 2.2 NFPA Publications.
A.2.2 Governing authorities may have adopted a fire prevention code other than NFPA 1, Fire Code. Where such is the case, where a provision of NFPA 1 is referenced by this Code, the fire prevention code adopted by the governing authority may be utilized where it is deemed by the AHJ to adequately address the issue or condition of concern. Where the adopted fire prevention code does not address the issue, the reference to NFPA 1 should be applied by the AHJ, unless the governing authority has established other procedures, policies or guidelines.
2.4 References for Extracts in Mandatory Sections.

A.2.4 Governing authorities may have adopted a fire prevention code other than NFPA 1, Fire Code. Where such is the case, where a provision of NFPA 1 is referenced by this Code, the fire prevention code adopted by the governing authority may be utilized where it is deemed by the AHJ to adequately address the issue or condition of concern. Where the adopted fire prevention code does not address the issue, the reference to NFPA 1 should be applied by the AHJ, unless the governing authority has established other procedures, policies or guidelines.

Chapter 3 Definitions

3.3.xx Building Code. The building code enforced by the jurisdiction or agency enforcing this Code.

A.3.3.xx Building Code Where no building code has been adopted, NFPA 5000, Building Construction and Safety Code should be used where Building Code is referenced in this Code.

3.3.xx Fire Code. The fire code enforced by the jurisdiction or agency enforcing this Code.

A.3.3.xx Fire Code Where no fire code has been adopted, NFPA 1, Fire Code should be used where Fire Code is referenced in this Code.


3.3.104 Flashover. A transition phase in the development of a compartment fire in which surfaces exposed to thermal radiation reach ignition temperature more or less simultaneously and fire spreads rapidly throughout the space, resulting in full room
involvement or total involvement of the compartment or enclosed space. [921, 2008] A stage in the development of a contained fire in which all exposed surfaces reach ignition temperature more or less simultaneously and fire spreads rapidly throughout the space.

3.3.160.3 Noncombustible (Material). A material that, in the form in which it is used and under the conditions anticipated, will not ignite, burn, support combustion, or release flammable vapors, when subjected to fire or heat. Materials that are reported as passing ASTM E 136, Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750 Degrees C, shall be considered noncombustible materials.

A.3.3.160.3 See 4.6.14 for additional information on noncombustible material.

3.3.212 Renovation. The replacement in kind, strengthening or upgrading of building elements, materials, equipment or fixtures that does not result in a reconfiguration of the building or spaces within. The replacement in kind or strengthening of load-bearing elements; or the refinishing, replacement, bracing, strengthening, or upgrading of existing materials, elements, equipment, or fixtures, without involving the reconfiguration of spaces.

Chapter 4 General

4.3.1* General. The protection methods of this Code are based on the hazards associated with fire and other events that have comparable impact on a building and its occupancy occupants.

4.6.3 Stories in Height. Unless otherwise specified in another provision of this Code, the stories in height of a building for locating an occupancy shall be determined as follows:

(1) The stories in height shall be counted starting with the level of exit discharge and ending with the highest occupiable story containing the occupancy considered.

(2) Stories below the level of exit discharge shall not be counted as stories.

(3) Interstitial spaces used solely for building or process systems directly related to the level above or below shall not be considered a separate story.

(4) A mezzanine shall not be counted as a story for the purpose of determining the allowable stories in height.

(5) Where For purposes of application of the requirements for occupancies other than assembly, health care, detention and correctional, and ambulatory health care, where a maximum one-story abovegrade parking structure, enclosed, open, or a combination thereof, of Type I or Type II (222) construction or open Type IV construction, with grade entrance, is provided under a building of occupancies other than assembly, health care, detention and correctional, and ambulatory health care occupancies, the number of stories shall be permitted to be measured from the floor above such a parking area.
4.6.7 Referenced Publications. See 2.1.4. Existing buildings or installations that do not comply with the provisions of the standards referenced in this document (see Chapter 2) shall be permitted to be continued in service, provided that the lack of conformity with these standards does not present a serious hazard to the occupants as determined by the authority having jurisdiction.

4.6.14 Noncombustible Material.
4.6.14.1 A material that is reported as passing ASTM E 136, Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750 Degrees C, shall be considered a noncombustible material.
4.6.14.2 A material that is reported as complying with the pass/fail criteria of ASTM E 136 when tested in accordance with the test method and procedure in ASTM E 2652, Standard Test Method for Behavior of Materials in a Tube Furnace with a Cone-shaped Airflow Stabilizer, at 750 Degrees C, shall be considered a noncombustible material.
4.6.14.3 Where the term limited-combustible is used in this Code, it shall also include noncombustible.

4.8.2.1* Emergency plans shall include the following:
(1) Procedures for reporting of emergencies
(2) Occupant and staff response to emergencies
(3)* Evacuation procedures appropriate to the building, its occupancy, and emergencies hazards (see Section 4.3)
(4) Appropriateness of the use of elevators
(5) Design and conduct of fire drills
(6) Type and coverage of building fire protection systems
(7) Other items required by the authority having jurisdiction.

Chapter 6 Classification of Occupancy and Hazard of Contents

6.1.14.3.2* The means of egress facilitates, construction type, protection, and other safeguards in the building shall comply with the most restrictive fire and life safety requirements of the occupancies involved unless separate safeguards are approved.
A.6.1.14.3.2 For example, a common path of travel that occurs wholly in a business tenant space, in a multiple occupancy building containing assembly and business occupancies, should not have to meet the assembly occupancy common path of travel limitation.

Chapter 11 Special Structures and High-Rise Buildings

11.8 High-Rise Buildings.
11.8.1 General.
11.8.1.1 Where required by Chapters 12 through 43, the provisions of Section 11.8 shall apply to high-rise buildings, as defined in 3.3.32.7. The provisions of Section 11.8 shall apply to the following:
   (1) new high-rise buildings as defined in 3.3.32.7
   (2) existing high-rise buildings as required by Chapters 13, 15, 17, 19, 21, 23, 26, 29, 31, 33, 37, 39, 40, 41 or 43.

11.8.5.2.4 The standby power system shall be connected to the following:
   (1) Electric fire pump pumps, jockey pumps, and air compressors serving dry pipe and pre-action systems.
   (2) Emergency command center equipment and lighting.
   (3) Not less than one elevator serving all floors, with standby power transferable to any elevator.
   (4) Mechanical equipment for smokeproof enclosures.
   (5) Mechanical equipment required to conform with the requirements of Section 9.3.

Chapter 43 Building Rehabilitation

43.2.2.1.2 Renovation. The replacement in kind, strengthening or upgrading of building elements, materials, equipment or fixtures that does not result in a reconfiguration of the building or spaces within. The replacement in kind or strengthening of load-bearing elements; or the refinishing, replacement, bracing, strengthening, or upgrading of existing materials, elements, equipment, or fixtures, without involving the reconfiguration of spaces.

43.6.2.2 Illumination and Emergency Lighting Illumination, Emergency Lighting and Marking of Means of Egress.
   43.6.2.2.1 Means of egress in rehabilitation work areas shall be provided with illumination and emergency lighting in accordance with the requirements of other sections of this Code applicable to new construction for the occupancy.
   43.6.2.2.2 Where the reconstruction rehabilitation work area on any floor exceeds 50 percent of that floor area, means of egress throughout the floor shall be provided with illumination and emergency lighting in accordance with the requirements of other sections of this Code applicable to new construction for the occupancy, unless otherwise specified in 43.6.2.2.4.
   43.6.2.2.3 In a building with rehabilitation work areas involving more than 50 percent of the aggregate floor area within the building, the means of egress within the rehabilitation work area and the means of egress, including the exit and exit discharge paths, serving the rehabilitation work area shall be provided with illumination and emergency lighting in accordance with the requirements of other sections of this Code applicable to new construction for the occupancy.
the requirements of other sections of this Code applicable to new construction for the occupancy, unless otherwise specified in 43.6.2.2.4.  

**43.6.2.2.4** Means of egress within a tenant space that is entirely outside the rehabilitation work area shall be permitted to comply with the requirements for illumination and emergency lighting applicable to the existing occupancy in lieu of the requirements for illumination and emergency lighting applicable to new construction required by 43.6.2.2.2 and 43.6.2.2.3.

**43.7.2.1** Where a change of occupancy classification creates other than an assembly occupancy and the change occurs within the same hazard classification category or to an occupancy classification of a lesser hazard classification category (that is, a higher hazard category number), as addressed by Table 43.7.3, the building shall meet both of the following:

1. Requirements of the applicable existing occupancy chapters for the occupancy created by the change (see Chapters 13, 15, 17, 19, 21, 23, 24, 26, 29, 31, 33, 37, 39, 40, and 42)
2. Requirements for automatic sprinkler and detection, alarm, and communications systems and the requirements for hazardous areas applicable to new construction for the occupancy created by the change (see Chapters 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 36, 38, 40, and 42)

**43.7.2.2** Where a change of occupancy classification creates an assembly occupancy and the change occurs within the same hazard classification category or to an occupancy classification of a lesser hazard classification category (that is, a higher number), as addressed by Table 43.7.3, the building shall meet both of the following:

1. Requirements of Chapter 13 for existing assembly occupancies
2. Requirements for automatic sprinkler and detection, alarm, and communications systems, the requirements for hazardous areas, and the requirements for main entrance/exit of Chapter 12 for new assembly occupancies

**43.7.2.3** Where a change of occupancy classification occurs to an occupancy classification of a higher hazard classification category (i.e., a lower hazard category number), as addressed by Table 43.7.3, the building shall comply with the requirements of the occupancy chapters applicable to new construction for the occupancy created by the change (see Chapters 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 36, 38, 40, and 42).

**43.7.2.4** In historic buildings where a change of occupancy classification occurs within the same hazard classification category or to an occupancy classification in a lesser hazard classification category (i.e., a higher hazard category number), as addressed by Table 43.7.3, the building shall meet the requirements of one of the following:

1. 43.7.2.1 or 43.7.2.2 as applicable 43.7.2.1(1) and (2)
2. 43.7.2.1 or 43.7.2.2 as applicable, 43.7.2.1(1) and (2), as modified by Section 43.10

**43.7.2.5** In historic buildings where a change of occupancy classification occurs to an occupancy classification in a higher hazard classification category (that is,
a lower hazard category number), as addressed by Table 43.7.3, the building shall meet the requirements of one of the following:

1. 43.7.2.3 43.7.2.2.
2. 43.7.2.3 43.7.2.2, as modified by Section 43.10.

**43.10.4.6.2** Interior wall and ceiling finishes in exits, other than in one- and two-family dwellings, shall meet one of the following criteria:

1. The material shall be Class A, B or C in accordance with Section 10.2 of this Code have a flame spread classification of Class C or better.
2. Existing materials not meeting the minimum Class C flame spread index criteria shall be surfaced with an approved fire-retardant paint or finish.
3. Existing materials not meeting the minimum Class C flame spread index criteria shall be permitted to be continued in use, provided that the building is protected throughout by an approved automatic sprinkler system.

**43.10.5.5 Interior Finishes.** Existing interior wall and ceiling finishes shall meet one of the following criteria:

1. The material shall comply with the requirements for flame spread index comply with the flame spread classification of other sections of this Code applicable to the occupancy.
2. Materials not complying with 43.10.5.5(1) shall be permitted to be surfaced with an approved fire-retardant paint or finish.
3. Materials not complying with 43.10.5.5(1) shall be permitted to be continued in use, provided that the building is protected throughout by an approved automatic sprinkler system, and the nonconforming materials are substantiated as being historic in character.
Chapter 7 Means of Egress

7.1 General.

7.1.3 Separation of Means of Egress. See also Section 8.2.

7.1.3.2 Exits.

7.1.3.2.1 Where this Code requires an exit to be separated from other parts of the building, the separating construction shall meet the requirements of Section 8.2 and the following:

(1)* The separation shall have a minimum 1-hour fire resistance rating where the exit connects three or fewer stories. The separation, other than an existing separation, shall be supported by construction having not less than a 1-hour fire resistance rating.

(2)* The separation shall have a minimum 2-hour fire resistance rating where the exit connects four or more stories, unless one of the following conditions exists:

(a) In existing non-high-rise buildings, existing exit stair enclosures shall have a minimum 1-hour fire resistance rating.

(b) In existing buildings protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 9.7, existing exit stair enclosures shall have a minimum 1-hour fire resistance rating.

(c) The minimum 1-hour enclosures in accordance with 28.2.2.1.2, 29.2.2.1.2, 30.2.2.1.2, and 31.2.2.1.2 shall be permitted as an alternative to the requirement of 7.1.3.2.1(2).

(3) Reserved.

(4) The minimum 2-hour fire resistance–rated separation required by 7.1.3.2.1(2) shall be constructed of an assembly of noncombustible or limited-combustible materials and shall be supported by construction having a minimum 2-hour fire resistance rating, unless otherwise permitted by 7.1.3.2.1(6).

(5)* Structural elements, or portions thereof, that support exit components and either penetrate into a fire resistance–rated assembly or are installed within a fire resistance–rated wall assembly shall be protected, as a minimum to the fire resistance rating required by 7.1.3.2.1(1) or (2).

(6) In Type III, Type IV, and Type V construction, as defined in NFPA 220, Standard on Types of Building Construction(see 8.2.1.2), fire-retardant-treated wood enclosed in noncombustible or limited-combustible materials shall be permitted.

(7) Openings in the separation shall be protected by fire door assemblies equipped with door closers complying with 7.2.1.8.

(8)* Openings in exit enclosures shall be limited to door assemblies from normally occupied
spaces and corridors and door assemblies for egress from the enclosure, unless one of the following conditions exists:

(a) Openings in exit passageways in mall buildings as provided in Chapters 36 and 37 shall be permitted.

(b) In buildings of Type I or Type II construction, as defined in NFPA 220, Standard on Types of Building Construction (see 8.2.1.2), existing fire protection–rated door assemblies to interstitial spaces shall be permitted, provided that such spaces meet all of the following criteria:

i. The space is used solely for distribution of pipes, ducts, and conduits.

ii. The space contains no storage.

iii. The space is separated from the exit enclosure in accordance with Section 8.3.

(c) Existing openings to mechanical equipment spaces protected by approved existing fire protection–rated door assemblies shall be permitted, provided that the following criteria are met:

i. The space is used solely for non-fuel-fired mechanical equipment.

ii. The space contains no storage of combustible materials.

iii. The building is protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 9.7.

(9) Penetrations into, and openings through, an exit enclosure assembly shall be limited to the following:

(a) Door assemblies permitted by 7.1.3.2.1(8)

(b)* Electrical conduit serving the exit enclosure

(c) Required exit door openings

(d) Ductwork and equipment necessary for independent stair pressurization

(e) Water or steam piping necessary for the heating or cooling of the exit enclosure

(f) Sprinkler piping

(g) Standpipes

(h) Existing penetrations protected in accordance with 8.3.5

(i) Penetrations for fire alarm circuits, where the circuits are installed in metal conduit and the penetrations are protected in accordance with 8.3.5

(10) Penetrations or communicating openings shall be prohibited between adjacent exit enclosures.

(11) Membrane penetrations shall be permitted on the exit access side of the exit
enclosure. Such penetrations shall be protected in accordance with 8.3.5.6.

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7.1.10 Means of Egress Reliability.

7.1.10.1* General. Means of egress shall be continuously maintained free of all obstructions or impediments to full instant use in the case of fire or other emergency.

A.7.1.10.1 A proper means of egress allows unobstructed travel at all times. Any type of barrier including, but not limited to, the accumulations of snow and ice in those climates subject to such accumulations is an impediment to free movement in the means of egress. It is, however, recognized that obstructions occur on a short duration basis. In these instances, awareness training should be provided to ensure that blockages are kept to a minimum and procedures are established for the control and monitoring of the area affected.

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7.2.1.5 Locks, Latches, and Alarm Devices.

7.2.1.5.1 Door leaves shall be arranged to be opened readily from the egress side whenever the building is occupied.

7.2.1.5.2* The requirement of 7.2.1.5.1 shall not apply to door leaves of listed fire door assemblies after exposure to elevated temperature in accordance with the listing based on laboratory fire test procedures.

A.7.2.1.5.2 Some fire door assemblies are listed for use with fire pins or fusible links that render the door leaf release inoperative upon exposure to elevated temperature during a fire. The door leaf release mechanism is made inoperative where conditions in the vicinity of the door opening become untenable for human occupancy and such door opening no longer provides a viable egress path.

7.2.1.5.3 7.2.1.5.2 Locks, if provided, shall not require the use of a key, a tool, or special knowledge or effort for operation from the egress side.

7.2.1.5.4 7.2.1.5.3 The requirements of 7.2.1.5.1 and 7.2.1.5.3 shall not apply where otherwise provided in Chapters 18 through 23.

Renumber 7.2.1.5.4 through 7.2.1.5.11 to become 7.2.1.5.5 through 7.2.1.5.12:

7.2.1.5.5 Electrically Controlled Egress Door Assemblies. Door assemblies in the means of egress shall be permitted to be electrically locked if equipped with approved, listed hardware that incorporates a built-in switch, provided that the following conditions are met:

(1) The hardware for occupant release of the lock is affixed to the door leaf.

(2) The hardware has an obvious method of operation that is readily operated in the direction of egress.

(3) The hardware is capable of being operated with one hand in the direction of egress.

(4) Operation of the hardware interrupts the power supply directly to the electric lock and unlocks the door assembly in the direction of egress.

(5)* (§) Loss of power to the hardware automatically unlocks the door assembly in the
direction of egress.

A.7.2.1.5.5(5) Separate power supplies may be provided to the electronic lock and the releasing hardware. In this case, it is critical that the lock be arranged to release upon loss of power to the releasing hardware to ensure occupants can egress in the event of a power failure.

(6) Hardware for new installations is listed in accordance with UL 294, Standard for Access Control System Units.

7.2.1.5.9* A latch or other fastening device on a door leaf shall be provided with a releasing device that has an obvious method of operation and that is readily operated under all lighting conditions.

7.2.1.5.9.1 The releasing mechanism for any latch, other than for existing installations, shall be located as follows:

(1) Not less than 34 in. (865 mm) above the finished floor for other than existing installations, and
(2) Not more than 48 in. (1220 mm) above the finished floor.

7.2.1.5.9.2 The releasing mechanism shall open the door leaf with not more than one releasing operation, unless otherwise specified in 7.2.1.5.9.3 and 7.2.1.5.9.4 or 7.2.1.5.9.6.

7.2.1.5.9.3* Egress door assemblies from individual living units and guest rooms of residential occupancies shall be permitted to be provided with devices, including automatic latching devices, that require not more than one additional releasing operation, provided that such device is operable from the inside without the use of a key or tool and is mounted at a height not exceeding 48 in. (1220 mm) above the finished floor.

7.2.1.5.9.4 Existing security devices permitted by 7.2.1.5.9.3 shall be permitted to have two additional releasing operations.

7.2.1.5.9.5 Existing security devices permitted by 7.2.1.5.9.3, other than automatic latching devices, shall be located not more than 60 in. (1525 mm) above the finished floor.

7.2.1.5.9.6 Two releasing operations shall be permitted for existing hardware on a door leaf serving an area having an occupant load not exceeding 3 provided releasing does not require simultaneous operations.

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7.2.1.6* Special Locking Arrangements.

7.2.1.6.1 Delayed-Egress Locking Systems. Approved, listed, delayed-egress locking systems shall be permitted to be installed on door assemblies serving low and ordinary hazard contents in buildings protected throughout by an approved, supervised automatic fire detection system in accordance with Section 9.6 or an approved, supervised automatic sprinkler system in accordance with Section 9.7, and where permitted in Chapters 11 through 43, provided that the following criteria are met:

(1) The provisions of 7.2.1.6.2 for access-controlled egress door assemblies shall not apply to
door assemblies with delayed-egress locking systems.

(2) The door leaves shall unlock in the direction of egress upon actuation of one of the following:

(a) Approved, supervised automatic sprinkler system in accordance with Section 9.7
(b) Not more than one heat detector of an approved, supervised automatic fire detection system in accordance with Section 9.6
(c) Not more than two smoke detectors of an approved, supervised automatic fire detection system in accordance with Section 9.6

(3) The door leaves shall unlock in the direction of egress upon loss of power controlling the lock or locking mechanism.

(4)* An irreversible process shall release the lock in the direction of egress within 15 seconds, or 30 seconds where approved by the authority having jurisdiction, upon application of a force to the release device required in 7.2.1.5.9 under the following conditions:

(a) The force shall not be required to exceed 15 lbf (67 N).
(b) The force shall not be required to be continuously applied for more than 3 seconds.
(c) The initiation of the release process shall activate an audible signal in the vicinity of the door opening.
(d) Once the lock has been released by the application of force to the releasing device, relocking shall be by manual means only.

(5)* A readily visible, durable sign in letters not less than 1 in. (25 mm) high and not less than \( \frac{1}{16} \) in. (3.2 mm) in stroke width on a contrasting background that reads as follows shall be located on the door leaf adjacent to the release device in the direction of egress:

PUSH UNTIL ALARM SOUNDS
DOOR CAN BE OPENED IN 15 SECONDS

(6) The egress side of doors equipped with delayed egress locks shall be provided with emergency lighting in accordance with Section 7.9.

7.2.1.6.2* Access-Controlled Egress Door Assemblies. Where permitted in Chapters 11 through 43, door assemblies in the means of egress shall be permitted to be equipped with electrical lock hardware that prevents egress an approved entrance and egress access control system, provided that all of the following criteria are met:

(1) A sensor shall be provided on the egress side, arranged to detect an occupant approaching door leaves that are arranged to unlock the door leaf in the direction of egress upon detection of an approaching occupant or loss of power to the sensor.
(2) Door leaves shall automatically unlock in the direction of egress upon loss of power to the sensor or to the part of the access control system that locks the door leaves shall automatically unlock the door leaves in the direction of egress.

(3) Door leaves locks shall be arranged to unlock in the direction of egress from a manual release device complying with all of the following criteria:
   (a) The manual release device shall be located on the egress side, 40 in. to 48 in. (1015 mm to 1220 mm) vertically above the floor and within 60 in. (1525 mm) of the secured door openings.
   (b) The manual release device specified in 7.2.1.6.2(3) shall be readily accessible and clearly identified by a sign that reads as follows: PUSH TO EXIT.
   (c) When operated, the manual release device shall result in direct interruption of power to the lock — independent of the access control locking system electronics — and the door leaves lock shall remain unlocked for not less than 30 seconds.
   (4) Activation of the building fire-protective signaling system, if provided, shall automatically unlock the door leaves in the direction of egress, and they shall remain unlocked until the fire-protective signaling system has been manually reset.
   (5) The activation of manual fire alarm boxes that activate the building fire-protective signaling system specified in 7.2.1.6.2(4) shall not be required to unlock the door leaves.
   (6) Activation of the building automatic sprinkler or fire detection system, if provided, shall automatically unlock the door leaves in the direction of egress, and they shall remain unlocked until the fire-protective signaling system has been manually reset.

(7) The egress side of access-controlled egress doors, other than existing access-controlled egress doors, shall be provided with emergency lighting in accordance with Section 7.9.

A.7.2.1.6.2 It is not the intent to require doors that restrict access but comply with 7.2.1.5.9 to comply with the access-controlled egress door provisions of 7.2.1.6.2. The term "access-controlled" was chosen when the requirements of 7.2.1.6.2 were first added to the Code to describe the function where a door is electronically locked from the inside in a way that restricts egress. It is not the Code's intent to prohibit methods of securing the door in a locked position from the outside with access control products provided that the egress requirements of 7.2.1.6.2 are met.

7.2.1.6.3 Elevator Lobby Exit Access Door Assemblies Locking. Where permitted in Chapters 11 through 43, door assemblies separating the elevator lobby from the exit access required by 7.4.1.6.1 shall be permitted to be electronically locked, provided that all the following criteria are met:
   (1) The electronic switch for releasing the lock is listed in accordance with ANSI/UL294, Standard for Access Control System Units
   (2) The building is protected throughout by a fire alarm system in accordance with Section 9.6.
   (3) The building is protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 9.7.
   (4) Waterflow in the sprinkler system required by 7.2.1.6.3(3) is arranged to initiate the
building fire alarm system.

(5) The elevator lobby is protected by an approved, supervised smoke detection system in accordance with Section 9.6.

(6) Detection of smoke by the detection system required by 7.2.1.6.3(5) is arranged to initiate the building fire alarm system and notify building occupants.

(7) Initiation of the building fire alarm system by other than manual fire alarm boxes unlocks the elevator lobby door assembly.

(8) Loss of power to the elevator lobby electronic lock system unlocks the elevator lobby door assemblies.

(9) The elevator lobby electronic lock system is not supplied with emergency or standby electrical power.

[Renumber (10) through (15) to become (90 through (14)]

(10) Once unlocked, the elevator lobby door assemblies remain unlocked until the building fire alarm system has been manually reset.

(11) Where the elevator lobby door assemblies remain latched after being unlocked, latch-releasing hardware in accordance with 7.2.1.5.9 is affixed to the door leaves.

(12) A two-way communication system is provided for communication between the elevator lobby and a central control point that is constantly staffed.

(13) The central control point staff required by 7.2.1.6.3(12) is capable, trained, and authorized to provide emergency assistance.

(14) The provisions of 7.2.1.6.1 for delayed-egress locking systems are not applied to the elevator lobby door assemblies.

(15)* The provisions of 7.2.1.6.2 for access-controlled egress door assemblies are not applied to the elevator lobby door assemblies.

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7.2.1.7 Panic Hardware and Fire Exit Hardware.

7.2.1.7.2 Only approved panic hardware shall be used on door assemblies that are not fire-rated door assemblies. Only approved fire exit hardware shall be used on fire-rated door assemblies. New panic hardware and new fire exit hardware shall comply with ANSI/UL 305, Standard for Safety Panic Hardware and ANSI/BHMA A156.3, Exit Devices.

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7.2.1.10 Revolving Door Assemblies.

7.2.1.10.3 Revolving door assemblies not used as a component of a means of egress shall have a collapsing force not exceeding 180 lbf (800 N) applied at a point 3 in. (76 mm) from the outer edge of the outer wing stile and 40 in. (1020 mm) above the floor.
7.2.1.15 Inspection of Door Openings.

7.2.1.15.2 Fire-rated door assemblies shall be inspected and tested in accordance with NFPA 80, *Standard for Fire Doors and Other Opening Protectives*. Smoke door assemblies shall be inspected and tested in accordance with NFPA 105, *Standard for the Installation of Smoke Door Assemblies and Other Opening Protectives*.

7.2.2 Stairs.

7.2.2.1.1 Stairs shall meet the following criteria:

1. New stairs shall be in accordance with Table 7.2.2.1.1(a) and 7.2.2.1.2.

2. Existing stairs shall be permitted to remain in use, provided that they meet the requirements for existing stairs shown in Table 7.2.2.1.1(b).

3. Approved existing stairs shall be permitted to be rebuilt in accordance with the following:
   
   a. Dimensional criteria of Table 7.2.2.1.1(b)
   
   b. Other stair requirements of 7.2.2

4. The requirements for new and existing stairs shall not apply to stairs located in industrial equipment access work areas where otherwise provided in 40.2.5.2.

5. All treads shall be identical.

6. Handrails shall be provided on both sides of the stairway.

7.2.2.3.6* Dimensional Uniformity.

7.2.2.3.6.1 Variation in excess of $\frac{3}{16}$ in. (4.8 mm) in the depth sizes of adjacent tread depths or in the height of adjacent risers shall be prohibited, unless otherwise permitted in 7.2.2.3.6.3.

7.2.2.3.6.2 The tolerance variation between the sizes of the largest and smallest riser or between the largest and smallest tread depths shall not exceed $\frac{3}{8}$ in. (9.5 mm) in any flight.

7.2.2.3.6.3 Where the bottom or top riser adjoins a sloping public way, walk, or driveway having an established finished ground level and serves as a landing, the bottom or top riser shall be permitted to have a variation in height of not more than 1 in. in every 12 in. (25 mm in every 305 mm) of stairway width.

7.2.2.3.6.4 The size of the variations addressed by 7.2.2.3.6.1, 7.2.2.3.6.2 and 7.2.2.3.6.3 shall be based on the nosing-to-nosing dimensions of the tread depths and riser heights, consistent with the measurement details set out in 7.2.2.3.5.

7.2.2.3.6.5* 7.2.2.3.6.4* All tread nosings of stairs utilizing the provision of 7.2.2.3.6.3 shall be marked in accordance with 7.2.2.5.4.3. Those portions of the marking stripe at
locations where the riser height below the nosing is inconsistent by more than \( \frac{3}{16} \) in. (4.8 mm), relative to other risers in the stair flight, shall be distinctively colored or patterned, incorporating safety yellow, to warn descending users of the inconsistent geometry relative to other steps in the flight.

A.7.2.3.6.5 A.7.2.3.6.4* "Safety Yellow" is...[No change to annex note.]

7.2.2.3.6.6 The variation in the horizontal projection of all nosings, other than existing nosings, within each stair flight, including the projection of the landing nosing, shall not exceed \( \frac{3}{8} \) inch (9.5 mm) within the stair flight.

A.7.2.3.6 A fairly reliable test of step dimension uniformity is the crouch and sight test in which the inspector crouches on the landing above a flight to confirm that all of the nosings, including the landing nosing, line up. Unless there is a rare matched variation in the height of a step riser and in the tread depth, both proportionally larger or smaller than other steps in the flight—such that the inter-nosing slope or pitch is maintained consistent in the flight, the visual alignment of the nosings in the crouch and sight test will indicate dimensional uniformity. Thus, as a first task in any stair inspection, the crouch and sight test should be routinely performed. If the stair does not pass this visual test, careful measurements performed in accordance with 7.2.2.3.5 are essential. If the stair appears to pass this test—indicating the inter-nosing slope or pitch is consistent, a prudent second, quick test is to measure the inter-nosing distances for each step to confirm their consistency.

7.2.2.5.4.4* Where new contrast marking is provided for stairway handrails, it shall be applied to, or be part of, at least the upper surface of the handrail; have a minimum width of \( \frac{1}{2} \) in. (13 mm); and extend the full length of each handrail. After marking, the handrail shall comply with 7.2.2.4.4. Where handrails or handrail extensions bend or turn corners the stripe shall be permitted to have a gap of not more than 4 in. (102 mm).

7.2.2.5.5.3 Exit Stair Handrails. All handrails and handrail extensions shall be marked with a solid and continuous marking stripe and meet the following requirements:

(1) The marking stripe shall be applied to the upper surface of the handrail or be a material integral with the upper surface of the handrail for the entire length of the handrail, including extensions. Where handrails or handrail extensions bend or turn corners the stripe shall be permitted to have a gap of not more than 4 inches (102 mm).

(2) The marking stripe shall have a minimum horizontal width of 1 in. (25 mm). The minimum width of 1 inch (25 mm) shall not apply to outlining stripes listed in accordance with UL 1994.

(3) The dimensions and placement of the marking stripe shall be uniform and consistent on each handrail throughout the exit enclosure.

7.2.2.5.5.4 Perimeter Demarcation Marking. Stair landings, exit passageways, and other parts of the floor areas within the exit enclosure shall be provided with a solid and continuous perimeter demarcation marking stripe on the floor or on the walls or a combination of both. The marking stripe shall also meet the following requirements:
(1) The marking stripe shall have a minimum horizontal width of 1 in. (25 mm) and a maximum width of 2 in. (51 mm), with interruptions not exceeding 4 in. (100 mm). The minimum width of 1 in. (25 mm) shall not apply to outlining stripes listed in accordance with UL 1994, Standard for Luminous Egress Path Marking Systems.
(2) The marking stripe shall be applied within 2 in. (51 mm) of the wall.
(3) The marking stripe shall continue in front of all door openings swinging into the exit enclosure. However, the marking stripe shall not be applied in front of all door openings discharging from the exit enclosure.
(4) The dimensions and placement of the perimeter demarcation marking stripe shall be uniform and consistent throughout the exit enclosure.
(5) Surface-applied marking stripes using adhesive-backed tapes shall not be used.

7.2.2.5.5.4.1 Perimeter floor demarcation lines shall comply with all of the following:
(1) be placed within 4 in. (102 mm) of the wall and extend to within 2 in. (51 mm) of the markings on the leading edge of landings
(2) continue across the floor in front of all doors
(3) not extend in front of exit doors that lead out of an exit enclosure and through which occupants must travel to complete the egress path

7.2.2.5.5.4.2 Perimeter wall demarcation lines shall comply with all of the following:
(1) be placed on the wall with the bottom edge of the stripe not more than 4 in. (102 mm) above the finished floor
(2) at the top or bottom of the stairs, drop vertically to the floor within 2 in. (51 mm) of the step or landing edge
(3) transition vertically to the floor and then extend across the floor where a line on the floor is the only practical method of outlining the path
(4) where the wall line is broken by a door, continue across the face of the door or transition to the floor and extend across the floor in front of such door.
(5) not extend in front of doors that lead out of an exit enclosure and through which occupants must travel to complete the egress path
(6) where a wall-mounted demarcation line transitions to a floor-mounted demarcation line or vice versa, the wall-mounted demarcation line drops vertically to the floor to meet a complementary extension of the floor-mounted demarcation line thus forming a continuous marking

7.2.2.5.5.7 Door Hardware Marking. The door hardware for the doors serving the exit enclosure that swing out from the enclosure in the direction of egress travel shall be provided with a marking stripe. The marking stripe shall also meet the following requirements:
(1) The door hardware necessary to release the latch shall be outlined with an approved marking stripe having a minimum horizontal width of 1 in. (25 mm)

A.7.2.2.5.5.7 (1) The marking stripe for door hardware should be of sufficient size to adequately mark the door hardware. This marking could be located behind, immediately adjacent to, or on the door handle or escutcheon.

(2) Where panic hardware is installed, the following criteria shall be met:
(a) The marking stripe shall have a minimum horizontal width of 1 in. (25 mm) and be
applied to the entire length of the actuating bar or touch pad.

(b) The placement of the marking stripe shall not interfere with viewing of any instructions on the actuating bar or touch pad.

7.2.2.5.5.8 Emergency Exit Symbol. An emergency exit symbol with a luminescent background shall be applied on all doors serving the exit enclosure that swing out from the enclosure in the direction of egress travel. The emergency exit symbol shall also meet the following requirements:

(1) The emergency exit symbol shall meet the requirements of NFPA 170, *Standard for Fire Safety and Emergency Symbols*.

(2) The emergency exit symbol applied on the door shall be a minimum of 4 in. (102 mm) in height and shall be applied on the door, centered horizontally, with the top of the symbol no higher than 18 in. (455 mm) above the finished floor.

7.2.2.5.5.10 Materials. Exit stair path markings shall be made of any material, including paint, provided that an electrical charge is not required to maintain the required luminescence. Such materials shall include, but shall not be limited to, self-luminous materials and photoluminescent materials. Materials shall comply with one of the following:

(1) ASTM E 2073, *Standard Test Method for Photopic Luminance of Specification for Photoluminescent (Phosphorescent) Safety Markings*, except that the charging source shall be 1 ft-candle (10.8 lux) of fluorescent illumination for 60 minutes, and the minimum luminance shall be 5 milli-candels per square meter after 90 minutes.

(2) UL 1994, *Standard for Luminous Egress Path Marking Systems*

(3) An alternate standard deemed equivalent and approved by the authority having jurisdiction

7.2.2.5.5.11* Exit Stair Illumination. Exit enclosures where photoluminescent materials are installed shall be continuously illuminated for at least 60 minutes prior to periods when the building is occupied. Lighting control devices that automatically turn exit enclosure lighting on and off, based on occupancy, shall not be installed.

A.7.2.2.5.5.1 Motion sensing controls should not be used to manage the illumination of photoluminescent materials. Timers that provide for a minimum 60 minutes of illumination prior to building occupancy are acceptable.

7.2.2.6.3 Separation and Protection of Outside Stairs.

7.2.2.6.3.1* Outside stairs shall be separated from the interior of the building by construction with the fire resistance rating required for enclosed stairs with fixed or self-closing opening protectives, except as follows:

(1) Outside stairs serving an exterior exit access balcony that has two remote outside stairways or ramps shall be permitted to be unprotected.

(2) Outside stairs serving two or fewer adjacent stories, including the story where the exit
discharges, shall be permitted to be unprotected where there is a remotely located second exit.

(3) In existing buildings, existing outside stairs serving three or fewer adjacent stories, including the story where the exit discharges, shall be permitted to be unprotected where there is a remotely located second exit.

(4) The fire resistance rating of a separation extending 10 ft (3050 mm) from the stairs shall not be required to exceed 1 hour where openings have a minimum ¾-hour fire protection rating.

(5) Outside stairs in existing buildings protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 9.7 shall be permitted to be unprotected.

A.7.2.6.3.1 Where outside stairs are permitted to be non-separated from interior portions of the building in accordance with items (1) through (5) of 7.2.6.3.1, such stairs are considered exits and not exit access.

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7.2.3 Smokeproof Enclosures.

7.2.3.3 Enclosure.

7.2.3.3.1 A smokeproof enclosure shall be continuously enclosed by barriers having 2-hour fire resistance ratings from the highest point to the level of exit discharge except as otherwise permitted in 7.2.3.3.3 lowest point by barriers having 2-hour fire resistance ratings.

7.2.3.3.2 Where a vestibule is used, it shall be within the 2-hour-rated enclosure and shall be considered part of the smokeproof enclosure.

7.2.3.3.3 A smokeproof enclosure comprised of an enclosed stair and serving floors below the level of exit discharge shall not be required to comply with 7.2.3.3.1 where the portion of the stairway below is separated from the stairway enclosure at the level of exit discharge by barriers with 1-hour fire resistance ratings.

7.2.3.5 Discharge.

7.2.3.5.1 Every smokeproof enclosure shall discharge into a public way, into a yard or court having direct access to a public way, or into an exit passageway. Such exit passageways shall be without openings, other than the entrance to the smokeproof enclosure and the door opening to the outside yard, court, or public way. The exit passageway shall be separated from the remainder of the building by a 2-hour fire resistance rating.

7.2.3.5.2 The smokeproof enclosure shall be permitted to discharge through areas on the level of exit discharge provided that all the following criteria are met:

(1) The building shall be protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 9.7.

(2) The discharge from the smokeproof enclosure shall lead to a free and unobstructed way to an exterior exit, and such way shall be readily visible and identifiable from the point of discharge from the smokeproof enclosure.

(3) Not more than 50 percent of the required number and capacity of exits shall discharge through areas on the level of exit discharge.
7.2.12 Areas of Refuge.

7.2.12.2 Accessibility.

7.2.12.2.3* Where the exit providing egress from an area of refuge to a public way that is in accordance with 7.2.12.2 includes stairs, the clear width of landings and stair flights, measured between handrails and at all points below handrail height, shall be not less than 48 in. (1220 mm), unless otherwise permitted by the following:

(1) The minimum 48 in. (1220 mm) clear width shall not be required where the area of refuge is separated from the remainder of the story by a horizontal exit meeting the requirements of 7.2.4. (See also 7.2.12.3.4.)

(2)* For stairs where egress is in the descending direction, a clear width of not less than 37 in. (940 mm), measured at and below handrail height, shall be permitted where all of the following are met:

(a) An approved stair descent device is provided on each floor served by the stair.
(b) Additional approved stair descent devices are provided on floors with an occupant load exceeding 200 at the ratio of one device per 200 occupants.
(c) The required approved stair descent devices are provided in an approved location on the floor.

(2) (3) Existing stairs and landings that provide a clear width of not less than 37 in. (940 mm), measured at and below handrail height, shall be permitted.

[Move the current annex text A.7.2.12.2.3(2) to follow the two paragraphs of text in A.7.2.12.2.3.]

7.3 Capacity of Means of Egress.

7.3.1 Occupant Load.

7.3.1.5 Capacity from a Point of Convergence. Where means of egress from a story above and a story below converge at an intermediate story, the capacity of the means of egress from the point of convergence shall be not less than the sum of the required capacity of the two means of egress.

7.5.4 Accessible Means of Egress.

7.5.4.4 Where an exit stair is used in an accessible means of egress, it shall comply with 7.2.12.2.3 7.2.12 and either shall incorporate an area of refuge within an enlarged story-level landing or shall be accessed from an area of refuge.
7.6* Measurement of Travel Distance to Exits.

7.6.1* The travel distance to an exit shall be measured on the floor or other walking surface as follows:

(1) Along the centerline of the natural path of travel, starting from the most remote point subject to occupancy

(2) Curving around any corners or obstructions, with a 12 in. (305 mm) clearance therefrom

(3) Terminating at one of the following:
   
   (a) Center of the doorway
   
   (b) Other point at which the exit begins
   
   (c) Smoke barrier in an existing detention and correctional occupancy as provided in Chapter 23

7.6.2 Where non-separated outside stairs are permitted as required exits, the travel distance shall be measured from the most remote point subject to occupancy to the leading nosing of the stair landing at the floor level under consideration.

[Renumber existing 7.6.2 to 7.6.3. Renumber existing 7.6.3 to 7.6.4. Renumber existing 7.6.4 to 7.6.5. Renumber existing 7.6.5 to 7.6.6. Renumber existing 7.6.6 to 7.6.7.]

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7.7 Discharge from Exits.

7.7.2.5 The requirement of 7.7.2.4 shall not apply where the discharge area is a vestibule or foyer that meets all of the following criteria:

(1) The depth from the exterior of the building shall be not more than 10 ft (3050 mm), and the length shall be not more than 30 ft (9140 mm).

(2) The foyer shall be separated from the remainder of the level of discharge by construction providing protection not less than the equivalent of wired glass in steel frames or 45 minutes fire resistive construction.

(3) The foyer shall serve only as means of egress and shall include an exit directly to the outside.

7.7.3 Arrangement and Marking of Exit Discharge.

7.7.3.1 Where more than one exit discharge is required, exit discharges shall be arranged to meet the remoteness criteria of 7.5.1.3.

7.7.3.2* Stairs that continue more than one-half story beyond the level of exit discharge shall be provided with an approved means to prevent occupants from traveling past the level of exit discharge during emergency building evacuation interrupted at the level of exit discharge by partitions, doors or other effective means.
A.7.7.3.2 Examples include partitions and gates. The design should not obstruct the normal flow of occupants to the exit discharge.

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7.8 Illumination of Means of Egress.

7.8.1.2.2 Unless prohibited by Chapters 11 through 43, automatic, motion-sensor–type lighting switches shall be permitted within the means of egress, provided that the switch controllers comply with all of the following:
(1) the switch controllers are listed
(2) the switch controllers are equipped for fail-safe operation and evaluated for this purpose,
(3) the illumination timers are set for a minimum 15-minute duration, and
(4) the motion sensor is activated by any occupant movement in the area served by the lighting units.
(5) the switch controller is activated by activation of the building fire alarm system, if provided.

7.8.1.2.3* Energy saving sensors, switches, timers or controllers shall be approved and shall not compromise the continuity of illumination of the means of egress required by 7.8.1.2.

A.7.8.1.2.3 A consideration for the approval of automatic, motion-sensor type lighting switches, controls, timers or controllers is whether the equipment is listed as a fail-safe device for use in the means of egress.

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7.13 Normally Unoccupied Building Service Equipment Support Areas.

7.13.1* Hazard of Contents.

7.13.1.1 Unless prohibited by Chapters 11 through 43, the provisions of Section 7.13 shall apply in lieu of the provisions of Section 7.1 through Section 7.12 to normally unoccupied building service equipment support areas where such areas do not contain high hazard contents or operations.

A.7.13.1 29 CFR 1910.146 of the OSHA regulations describes the aspects of normally unoccupied areas. For example, hazardous atmosphere criteria are presented and asphyxiation risk due to an entrance becoming engulfed are addressed. The areas described by 29 CFR 1910.146 would be considered hazardous if located within a building or structure regulated by NFPA 101.

7.13.1.2 Building service equipment support areas shall not contain fuel-fired equipment or be used for the storage of combustibles.

7.13.2 Egress Doors.

7.13.2.1* Egress from normally unoccupied building service equipment support areas shall be provided by doors complying with 7.2.1 where the normally unoccupied building service equipment support area exceeds 45,000 ft² (4180 m²) in buildings not protected throughout by an approved, supervised automatic sprinkler system in accordance with 9.7.1.1(1).
A.7.13.2.1 Egress from normally unoccupied building service equipment support areas not exceeding 45,000 ft² (4180 m²) is permitted to be by access panels or other hardware not complying with the door requirements of 7.2.1.

7.13.2.2 Egress from normally unoccupied building service equipment support areas shall be provided by doors complying with 7.2.1 where the normally unoccupied building service equipment support area exceeds 90,000 ft² (8370 m²) in buildings protected throughout by an approved, supervised automatic sprinkler system in accordance with 9.7.1.1(1).

7.13.2.3 The absence of sprinklers in the normally unoccupied building service equipment support area as permitted by an exemption of NFPA 13, Standard for the Installation of Sprinkler Systems, shall not cause a building to be classified as nonsprinklered for purposes of applying the provisions of 7.13.2.2.

7.13.3 Means of Egress Path.

7.13.3.1 A designated means of egress path shall be provided within the normally unoccupied building service equipment support area where the normally unoccupied area exceeds 45,000 ft² (4180 m²) in buildings not protected throughout by an approved, supervised automatic sprinkler system in accordance with 9.7.1.1(1).

7.13.3.2 A designated means of egress path shall be provided within the normally unoccupied building service equipment support area where the normally unoccupied area exceeds 90,000 ft² (8370 m²) in buildings protected throughout by an approved, supervised automatic sprinkler system in accordance with 9.7.1.1(1).

7.13.3.3 The absence of sprinklers in the normally unoccupied building service equipment support area as permitted by an exemption of NFPA 13, Standard for the Installation of Sprinkler Systems, shall not cause a building to be classified as nonsprinklered for purposes of applying the provisions of 7.13.3.2.

7.13.3.4 Where a means of egress path is required, the path shall be a minimum of 28 in. (810 mm) clear width.

7.13.3.5 Where a means of egress path is required, minimum headroom shall be 6 ft 8 in. (2030 mm) along the entire designated means of egress path.

7.13.3.6 Exit signage shall not be required along the means of egress path within normally unoccupied building service equipment support areas.

7.13.3.7 Where two means of egress are required, the means of egress path shall connect the two required means of egress.

7.13.3.8 The designated means of egress path shall be within 25 ft (7.6 m) of any portion of the space where the only available access requires crossing over or under obstructions, unless the space is completely inaccessible.

7.13.4 Illumination.

7.13.4.1 The minimum illumination of means of egress along the required means of egress path shall be 0.2 ft-candle (2.2 lux), except as otherwise provided in 7.13.3.4.2.

7.13.4.2 Illumination of means of egress shall not be required in normally unoccupied building service equipment support areas where illumination of means of egress is not required by the applicable occupancy chapter for the remainder of the building.

7.13.5 Number of Means of Egress.

7.13.5.1 Two remotely located means of egress shall be provided within the normally unoccupied building service equipment support area where the normally unoccupied area
7.13.5.2 Two remotely located means of egress shall be provided within the normally unoccupied building service equipment support area where the normally unoccupied area exceeds 90,000 ft² (8370 m²) in buildings protected throughout by an approved, supervised automatic sprinkler system in accordance with 9.7.1.1(1).

7.13.5.3 The absence of sprinklers in the normally unoccupied building service equipment support area as permitted by an exemption of NFPA 13, Standard for the Installation of Sprinkler Systems, shall not cause a building to be classified as nonsprinklered for purposes of applying the provisions of 7.13.5.2.

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7.14 Annex B Elevators for Occupant-Controlled Evacuation Prior to Phase I Emergency Recall Operations

This annex is not a part of the requirements of this NFPA document but is included for informational purposes only. Information in this annex is intended to be adopted by the jurisdiction at the discretion of the adopting jurisdiction. Additionally, information in this annex is intended to be incorporated on a voluntary basis by building owners and developers who might have a desire to include occupant evacuation elevators in their design projects.

Although this annex is written in mandatory language, it is not intended to be enforced or applied unless specifically adopted by the jurisdiction or, if it is being applied on a voluntary basis, by the building owner or developer.

The provisions of this annex are applicable where elevators are intended to be used for general building occupant evacuation during alarm conditions prior to Phase I Emergency Recall Operation.

It is not the intent to require application of these requirements where limited or supervised use of elevators for evacuation is part of a formal or informal evacuation strategy, including, but not limited to, relocation or evacuation of patients in health care occupancies and relocation or evacuation by occupants with disabilities in other occupancies.


B 7.14.1.1* Elevators that are installed in new buildings in compliance with the provisions of Annex E shall be permitted Where passenger elevators for general public use are permitted to be used for occupant-controlled evacuation prior to Phase I Emergency Recall Operation mandated by the Firefighters’ Emergency Operation provisions of ASME A17.1/CSA B44, Safety Code for Elevators and Escalators, the elevator system shall also comply with this section.

Note: A 7.14.1.1 The Phase I Emergency Recall Operation mandated by the Firefighters’ Emergency Operation provisions of ASME A17.1/CSA B44, Safety Code for Elevators and Escalators, recalls elevators upon detection of smoke by smoke detectors installed in the following locations:

(1) At each floor served by the elevator in the lobby (landing) adjacent to the hoistway doors

(2) In the associated elevator machine room

(3) In the elevator hoistway where sprinklers are located in the hoistway
Where smoke from a fire remote from the elevator lobby (landing), elevator machine room, and elevator hoistway can be kept from reaching the elevator lobby (landing), elevator machine room, and elevator hoistway, the associated elevators can continue to operate in a fire emergency. The provisions of Annex B Section 7.14 address the features that need to be provided to make such elevator operation safe for evacuation.

**B 7.14.1.2** Occupant evacuation elevators in accordance with Annex B Section 7.14 shall not be permitted to satisfy requirements of this Code applicable to the following:

1. Number of means of egress
2. Capacity of means of egress
3. Arrangement of means of egress

**B 7.14.2 Occupant Information Features.**

**B 7.14.2.1** An evacuation plan approved by the authority having jurisdiction shall be implemented, specifically including the procedures for occupant evacuation using the exit stairs and the occupant evacuation elevators.

**Note:** A.7.14.2.1 Building occupants have traditionally been taught not to use elevators in fire or similar emergencies. The evacuation plan should include more than notification that the elevators can be used for emergency evacuation. The plan should include training to make occupants aware that the elevators will be available only for the period of time prior to elevator recall via smoke detection in the elevator lobby, machine room, or hoistway. Occupants should be prepared to use the exit stairs (which are required to be directly accessible from the elevator lobby by B 7.14.8.3) where the elevator has been called out of service.

**B 7.14.2.2** Occupant evacuation elevators shall be marked with signage indicating the elevators are suitable for use by building occupants for evacuation during fires.

**B 7.14.2.3 Conditions for Safe Continued Operation.**

**B 7.14.2.3.1** Conditions necessary for the continued safe operation of the occupant evacuation elevators and the associated elevator lobbies and elevator machine rooms shall be continuously monitored and displayed at the building emergency command center by a standard emergency service interface system meeting the requirements of NFPA 72, *National Fire Alarm Code*, and NEMA SB 30, *Fire Service Annunciator and Interface*.

**B 7.14.2.3.2** The monitoring and display required by 7.14.2.3.1 shall include all of the following:

1. Floor location of each elevator car
2. Direction of travel of each elevator car
3. Status of each elevator car with respect to whether it is occupied
4. Status of normal power to the elevator equipment, elevator controller cooling equipment, and elevator machine room ventilation and cooling equipment
5. Status of standby or emergency power system that provides backup power to the elevator equipment, elevator controller cooling equipment, and elevator machine room ventilation and cooling equipment
6. Activation of any fire alarm-initiating device in any elevator lobby, elevator machine room or machine space, or elevator hoistway

**B 7.14.2.4** The building emergency command center location specified in B 7.14.2.3 shall be provided with a means to override normal elevator operation and to initiate

B 7.14.2.5 Occupant evacuation elevator lobbies shall be equipped with a status indicator arranged to display the following:

(1) Illuminated green light and the message “Elevators available for occupant evacuation” while the elevators are operating under emergency conditions but before Phase I Emergency Recall Operation in accordance with the Fire Fighters’ Emergency Operation requirements of ASME A17.1/CSA B44, Safety Code for Elevators and Escalators.

(2) Illuminated red light and the message “Elevators out of service, use exit stairs” once the elevators are under Phase I Emergency Recall Operation.

(3) No illuminated light but the message “Elevators are operating normally” while the elevators are operating under nonemergency conditions.


B 7.14.3.1 The building shall be protected throughout by an approved fire alarm system in accordance with Section 9.6.

B 7.14.3.2 Smoke Detectors.

B.3.2.1 Smoke detectors shall be installed in all occupiable areas within the building in accordance with the requirements of NFPA 72, National Fire Alarm Code, except as otherwise provided in B.3.2.2.

Note: The occupant evacuation elevator will function only until Phase I Emergency Recall Operation. The required smoke detection system in occupiable areas is intended to provide building occupants with the early warning needed to permit elevator use early in the fire.

B.3.2.2 Smoke detectors shall not be required to be installed in all occupiable areas where all of the following conditions are met:

(1) The building is protected throughout by an approved, supervised automatic sprinkler system in accordance with Section B.4.

(2) The sprinkler system is provided with a sprinkler control valve and a waterflow device on each floor.

(3) The sprinkler control valves and waterflow devices required by B.3.2.2(2) are monitored by the building fire alarm system.

Note: The exemption permitted by B.3.2.2 eliminates the need to install smoke detectors in all occupied areas of the building where the elevator evacuation protocol can be initiated by the sprinkler system that is arranged to indicate the floor of fire origin when a sprinkler flows water.

B.3.3 7.14.3.2* The fire alarm system shall include an emergency voice/alarm communication system in accordance with NFPA 72, National Fire Alarm Code, with the ability to provide voice directions on a selective basis to any building floor.

Note A.7.14.3.2: The emergency voice/alarm communication system with the ability to provide voice directions on a selective basis to any building floor might be used to instruct occupants of the fire floor who are able to use stairs to relocate to a floor level below. The selective voice notification feature might be used to provide occupants of a given elevator lobby with a status report or supplemental instructions.
The emergency voice/alarm communication system shall be arranged so that intelligible voice instructions are audible in the elevator lobbies under conditions where the elevator lobby doors are in the closed position.

Note: A 7.14.3.3 An audible notification appliance will need to be positioned in the elevator lobby in order to meet the requirement of B 7.14.3.3. The continued use of the occupant evacuation elevator system is predicated on elevator lobby doors that are closed to keep smoke from reaching the elevator lobby smoke detector that is arranged to initiate the Phase I Emergency Recall Operation.

7.14.3.4 Two-way communication system. A two-way communication system shall be provided in each occupant evacuation elevator lobby for the purpose of initiating communication with the emergency command center or an alternative location approved by the fire department.

7.14.3.4.1 Design and installation. The two-way communication system shall include audible and visible signals and shall be designed and installed in accordance with the requirements of ICC/ANSI A117.1, American National Standard for Accessible and Usable Buildings and Facilities.

7.14.3.4.2 Instructions. Instructions for the use of the two-way communication system along with the location of the station shall be permanently located adjacent to each station. Signage shall comply with the ICC/ANSI A117.1 requirements for visual characters.

B 7.14.4 Sprinklers.

B 7.14.4.1 The building shall be protected throughout by an approved, supervised automatic sprinkler system in accordance with 9.7.1.1(1), except as otherwise specified in B 7.14.4.2.

7.14.4.1.1 A sprinkler control valve and a waterflow device shall be provided for each floor.

7.14.4.1.2 The sprinkler control valves and waterflow devices required by 7.14.4.1.1 shall be monitored by the building fire alarm system.

B 7.14.4.2* Sprinklers shall not be installed in elevator machine rooms serving occupant evacuation elevators, and such prohibition shall not cause an otherwise fully sprinklered building to be classified as nonsprinklered.

Note: A 7.14.4.2 The presence of sprinklers in the elevator machine room would necessitate the installation of a shunt trip for automatically disconnecting the main line power for compliance with ASME A17.1/CSA B44, Safety Code for Elevators and Escalators, as it is unsafe to operate elevators while sprinkler water is being discharged in the elevator machine room. The presence of a shunt trip conflicts with the needs of the occupant evacuation elevator, as it disconnects the power without ensuring that the elevator is first returned to a safe floor so as to prevent trapping occupants. The provision of B 7.14.4.2, prohibiting the sprinkling of elevator machine rooms, deviates from the requirements of NFPA 13, Standard for the Installation of Sprinkler Systems, which permits no such exemption. However, NFPA 13 permits a similar exemption for electrical equipment rooms where the room is dedicated to electrical equipment only; the equipment is installed in a 2-hour fire-rated enclosure, including protection for penetrations; and no combustible storage is stored in the room. Similar safeguards are imposed on the occupant evacuation elevator by B 7.14.6.1 and B 7.14.6.2.
Where a hoistway serves occupant evacuation elevators, sprinklers shall not be installed at the top of the elevator hoistway or at other points in the hoistway more than 24 in. (610 mm) above the pit floor, and such prohibition shall not cause this building to be classified as nonsprinklered.

Note: A.7.14.4.3 NFPA 13, *Standard for the Installation of Sprinkler Systems*, permits sprinklers to be omitted from the top of the elevator hoistway where the hoistway for passenger elevators is noncombustible and the car enclosure materials meet the requirements of ASME A17.1/CSA B44, *Safety Code for Elevators and Escalators*. The provision of B 7.14.5.3 restricts occupant evacuation elevators to passenger elevators that are in noncombustible hoistways and for which the car enclosure materials meet the requirements of ASME A17.1/CSA B44. *(See B 7.14.5.3.)*

**B 7.14.5 Elevator Installation.**


B 7.14.5.2* Shunt breakers shall not be installed on elevator systems used for occupant evacuation.

Note: A.7.14.5.2 Elevator shunt breakers are intended to disconnect the electric power to an elevator prior to sprinkler system waterflow impairing the functioning of the elevator. The provision of B 7.14.4.2 prohibits the installation of sprinklers in the elevator machine room and at the top of the elevator hoistway, obviating the need for shunt breakers. The provision of B 7.14.5.2 is not actually an exemption to the provisions of ASME A17.1/CSA B44, *Safety Code for Elevators and Escalators*, as ASME A17.1/CSA B44 requires the automatic main line power disconnect (shunt trip) only where sprinklers are located in the elevator machine room or in the hoistway more than 24 in. (610 mm) above the pit floor. The provision of B 7.14.4.2 prohibits sprinklers in the elevator machine room. The provision of B 7.14.4.3 prohibits sprinklers at the top of the hoistway and at other points in the hoistway more than 24 in. (610 mm) above the pit floor in recognition of the limitations on combustibility established by B 7.14.5.3.

B 7.14.5.3 Occupant evacuation elevators shall be limited to passenger elevators that are in noncombustible hoistways and for which the car enclosure materials meet the requirements of ASME A17.1/CSA B44, *Safety Code for Elevators and Escalators*.

**B 7.14.6 Elevator Machine Rooms.**

B 7.14.6.1* Elevator machine rooms associated with occupant evacuation elevators shall be separated from all building areas, other than elevator hoistways, by minimum 2-hour fire resistance–rated construction.

Note: A.7.14.6.1 The minimum 2-hour fire resistance–rated separation is based on the omission of sprinklers from the elevator machine room in accordance with B 7.14.4.2.

B 7.14.6.2* Elevator machine rooms associated with occupant evacuation elevators shall be used for no purpose other than as elevator machine rooms.

Note: A.7.14.6.2 The requirement of B 7.14.6.2 is consistent with that in ASME A17.1/CSA B44, *Safety Code for Elevators and Escalators*, which permits only machinery and equipment used in conjunction with the function or use of the elevator to be in the elevator machine room. An inspection program should be implemented to ensure that the elevator machine room is kept free of storage.

**B 7.14.7 Electrical Power and Control Wiring.**
The following features associated with occupant evacuation elevators shall be supplied by both normal power and Type 60, Class 2, Level 1 standby power:

1. Elevator equipment
2. Elevator machine room ventilation and cooling equipment
3. Elevator controller cooling equipment

Wiring for power of the elevators shall meet one of the following criteria:

1. The wiring shall utilize type CI cable with a minimum 1-hour fire resistance rating.
2. The wiring shall be enclosed in a minimum 1-hour fire resistance construction.

Wiring or cables that provide control signals are exempt from the protection requirements of B.7.2 provided such wiring or cables where exposed to fire will not disable Phase II Emergency In-Car Operation once such emergency operation has been activated.

Occupant Evacuation Shaft System.

Occupant evacuation elevators shall be provided with an occupant evacuation shaft system consisting of all of the following:

1. Elevator hoistway.
2. Enclosed elevator lobby outside the bank or group of hoistway doors on each floor served by the elevators, except that elevator lobbies shall not be required to be enclosed where located either on the street floor or level of exit discharge.
   
   Exception: Elevator lobbies are not required to be enclosed when located either on the street floor or level of exit discharge.
3. Enclosed exit stair with doors to all floors, at and above grade level, served by the elevators.

Elevator Lobby Size.

Occupant evacuation elevator lobbies shall have minimum floor area, except as otherwise provided in 7.14.8.2.2, as follows:

1. The elevator lobby floor area shall accommodate, at 3 ft\(^2\) (0.28 m\(^2\)) per person, a minimum of 25 percent of the occupant load of the floor area served by the lobby.
2. The elevator lobby floor area also shall accommodate one wheelchair space of 30 in. \(\times\) 48 in. (760 mm \(\times\) 1220 mm) for each 50 persons, or portion thereof, of the occupant load of the floor area served by the lobby.

Note: Elevator lobbies provide a safe place for building occupants to await the elevators and extend the time available for such use by providing a barrier to smoke and heat that might threaten the elevator car or hoistway. Smoke detectors within the elevator lobbies are arranged to initiate a Phase I Emergency Recall Operation if the lobby is breached by smoke.

The size of lobbies serving multiple banks of elevators shall be exempt from the requirement of 7.14.8.2.1(1) provided the area of such lobbies is approved on an individual basis and is consistent with the building’s fire safety and evacuation plan.

Access to the exit stair required by B.7.14.8.1(3) shall be directly from the enclosed elevator lobby on each floor.

The occupant evacuation shaft system shall be enclosed and separated from the remainder of the building by walls complying with the following:

1. The shaft system walls shall be smoke barriers in accordance with Section 8.5.
(2) The shaft system walls separating the elevator lobby from the remainder of the building shall have a minimum 1-hour fire resistance rating and minimum 3/4-hour fire protection–rated opening protectives.

(3) The shaft system walls separating the elevator hoistway from the remainder of the building shall have a minimum 2-hour fire resistance rating and minimum 11/2-hour fire protection–rated opening protectives.

(4) The shaft system walls separating the enclosed exit stair from the remainder of the building shall have a minimum 2-hour fire resistance rating and minimum 11/2-hour fire protection–rated opening protectives.

**B.7.14.8.5** Occupant evacuation shaft system enclosures shall be constructed to provide a minimum of classification Level 2 in accordance with ASTM C 1629/C 1629M, *Standard Classification for Abuse-Resistant Nondecorated Interior Gypsum Panel Products and Fiber-Reinforced Cement Panels*.

**B.7.14.8.6** The occupant evacuation shaft system shall be protected from water infiltration by one of the following methods:

1. The shaft system perimeter walls and opening protectives, other than the elevator lobby doors, shall be constructed such that an accumulation of water to a depth of 2 in. (51 mm) on the side of the wall not within the occupant evacuation shaft system shall be prevented from entering the shaft system.

2. Drains shall be installed to manage the flow of two fire department hoses and three fire sprinklers concurrently discharging such that water does not enter the shaft system.

**B.7.14.8.7** The occupant evacuation shaft system elevator lobby doors shall have all of the following features:

1. The doors shall have a fire protection rating of not less than 3/4 hour.

2. The doors shall be smoke leakage–rated assemblies in accordance with NFPA 105, *Standard for the Installation of Smoke Door Assemblies and Other Opening Protectives*.

3. The doors shall have an automatic positioning bottom seal to resist the passage of water at floor level from outside the shaft system.

**Note:** The elevator lobby doors addressed in B.7.14.8.7 do not include the elevator hoistway doors. The elevator hoistway doors serving fire-rated hoistway enclosures in accordance with 8.6.5 must meet the criteria of Table 8.3.4.2.

**B.7.14.8.8** Occupant evacuation shaft system elevator lobby doors shall have the following features:

1. Each door shall be automatic-closing in accordance with 7.2.1.8.2, as modified by B.7.14.8.8(2).

2. In addition to the automatic-closing means addressed by 7.2.1.8.2, the elevator lobby door on any floor shall also close in response to any alarm signal initiated on that floor.

3. Each door shall be provided with a vision panel arranged to allow people within the lobby to view conditions on the other side of the door.

**B.7.14.8.9** Each occupant evacuation shaft system exit stair enclosure door shall be provided with a vision panel arranged to allow people on either side of the door to view conditions on the other side of the door.

**B.8.10** Occupant evacuation shaft system exit stair enclosures shall be permitted to serve as occupant egress stairs.
B.8.11 Occupant evacuation shaft system elevator lobbies shall be permitted to serve as areas of refuge.
NFPA Chapter 8 Features of Fire Protection

8.2.2 General.

8.2.2.3* Fire compartments shall be formed by fire barriers complying with 8.3.1.2 one of the following:

(1) The fire barriers are continuous from outside wall to outside wall or from one fire barrier to another, or a combination thereof, including continuity through all concealed spaces, such as those found above a ceiling, including interstitial spaces.

(2) The fire barriers are continuous from outside wall to outside wall or from one fire barrier to another, or from the floor to the bottom of the interstitial space, provided that the construction assembly forming the bottom of the interstitial space has a fire resistance rating not less than that of the fire barrier.

A.8.2.2.3 To ensure that a fire barrier is continuous, it is necessary to seal completely all openings where the fire barrier abuts other fire barriers, the exterior walls, the floor below, and the floor or ceiling above. In 8.2.2.3(2), the fire resistance rating of the bottom of the interstitial space is provided by that membrane alone. Ceilings of rated floor/ceiling and roof/ceiling assemblies do not necessarily provide the required fire resistance.

8.2.2.5 Where door assemblies are required elsewhere in this Code to be smoke leakage–rated in accordance with 8.2.2.5, door assemblies shall comply with all of the following:

(1) They shall be tested in accordance with ANSI/UL 1784, Standard for Air Leakage Tests for Door Assemblies.

(2) The maximum air leakage rate of the door assembly shall be 3.0 ft³/min/ft² (0.9 m³/min/m²) of door opening at 0.10 in. water column (25 N/m²) for both the ambient and elevated temperature tests.

(3) Door assemblies shall be installed in accordance with NFPA 105, Standard for the Installation of Smoke Door Assemblies and Other Opening Protectives.

(4) Door assemblies shall be inspected in accordance with 7.2.1.15.

8.2.3 Fire Resistance–Rated Construction.


A.8.2.3.1 NFPA 251, Standard Methods of Tests of Fire Resistance of Building Construction and Materials; ANSI/UL 263, Standard for Fire Tests of Building Construction and Materials; and ASTM E 119, Standard Test Methods for Fire Tests of Building Construction and Materials, are considered nationally recognized methods of determining fire resistance and have been found to yield equivalent test methods.

Assemblies tested in accordance with these fire-resistance test Standards provide passive fire protection. The test procedures set forth in these Standards make no provision for testing.
automatic fire suppression systems or water sprays in conjunction with structural members or assemblies tested in vertical or horizontal fire resistance furnaces.

8.2.3.1.1 Materials used to construct fire resistance–rated elements and assemblies shall be limited to those permitted in this *Code*.

8.2.3.1.2 In new construction, end-jointed lumber used in an assembly required to have a fire resistance rating, shall have the designation “Heat Resistant Adhesive” or “HRA” included in its grade mark.

8.3 Fire Barriers.

8.3.1.1 General. Fire barriers used to provide enclosure, subdivision, or protection under this *Code* shall be classified in accordance with one of the following fire resistance ratings:

1. 3-hour fire resistance rating
2. 2-hour fire resistance rating
3. 1-hour fire resistance rating
4. ½-hour fire resistance rating

A.8.3.1.1(4) Walls in good condition with lath and plaster, or gypsum board of not less than ½ in. (13 mm) on each side, can be considered as providing a minimum ½-hour fire resistance rating. Additional information on archaic material assemblies can be found in Appendix I of NFPA 914, *Code for Fire Protection of Historic Structures*.

8.3.1.2*. Fire barriers shall comply with one of the following:

1. The fire barriers are continuous from outside wall to outside wall or from one fire barrier to another, or a combination thereof, including continuity through all concealed spaces, such as those found above a ceiling, including interstitial spaces.
2. The fire barriers are continuous from outside wall to outside wall or from one fire barrier to another, or from the floor to the bottom of the interstitial space, provided that the construction assembly forming the bottom of the interstitial space has a fire resistance rating not less than that of the fire barrier.

A.8.3.1.2 To ensure that a fire barrier is continuous, it is necessary to seal completely all openings where the fire barrier abuts other fire barriers, the exterior walls, the floor below, and the floor or ceiling above. In 8.3.1.2(2), the fire resistance rating of the bottom of the interstitial space is provided by that membrane alone. Ceilings of rated floor/ceiling and roof/ceiling assemblies do not necessarily provide the required fire resistance.

8.3.1.3 Walls used as fire barriers shall comply with Chapter 7 of NFPA 221, Standard for High Challenge Fire Walls, Fire Walls, and Fire Barrier Walls. The NFPA 221 limitation on percentage width of openings shall not apply.

**Method for Positive Pressure Fire Tests of Window Assemblies**; or ANSI/UL 9, **Standard for Fire Tests of Window Assemblies**.

**8.3.3.6** Glazing in fire window assemblies, other than in existing fire window installations of wired glass and other fire-rated glazing material, shall be of a design that has been tested to meet the conditions of acceptance of NFPA 257, **Standard on Fire Test for Window and Glass Block Assemblies**; ASTM E 2010, **Standard Test Method for Positive Pressure Fire Tests of Window Assemblies**; or ANSI/UL 9, **Standard for Fire Tests of Window Assemblies**. Fire protection–rated glazing in fire door assemblies, other than in existing fire-rated door assemblies, shall be of a design that has been tested to meet the conditions of acceptance of NFPA 252, **Standard Methods of Fire Tests of Door Assemblies**; ASTM E 2074, **Standard Test Method for Positive Pressure Fire Tests of Door Assemblies; ANSI/UL 10B, Standard for Fire Tests of Door Assemblies**; or ANSI/UL 10C, **Standard for Positive Pressure Fire Tests of Door Assemblies**.

**8.3.3.9** Nonsymmetrical fire protection–rated glazing systems shall be tested with each face exposed to the furnace, and the assigned fire protection rating shall be that of the shortest duration obtained from the two tests conducted in compliance with NFPA 257, **Standard on Fire Test for Window and Glass Block Assemblies**; ASTM E 2010, **Standard Test Method for Positive Pressure Fire Tests of Window Assemblies**; or ANSI/UL 9, **Standard for Fire Tests of Window Assemblies**.

**8.3.3.10** The total combined area of glazing in fire-rated window assemblies and fire-rated door assemblies used in fire barriers shall not exceed 25 percent of the area of the fire barrier that is common with any room, unless the installation meets one of the following criteria:

1. The installation is an existing fire window installation of wired glass and other fire-rated glazing material in approved metal frames.
2. The installation is an existing fire window installation of wired glass and other fire-rated glazing materials in approved frames.
3. The fire protection–rated glazing material is installed in approved existing frames.

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**Table 8.3.4.2 Minimum Fire Protection Ratings for Opening Protectives in Fire Resistance–Rated Assemblies**

<table>
<thead>
<tr>
<th>Component</th>
<th>Walls and Partitions (hr)</th>
<th>Fire Door Assemblies (hr)</th>
<th>Fire Window Assemblies (hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elevator hoistways</td>
<td>2</td>
<td>1½</td>
<td>NP</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>1</td>
<td>NP</td>
</tr>
<tr>
<td>Vertical shafts</td>
<td>2</td>
<td>1½</td>
<td>NP</td>
</tr>
<tr>
<td>(including stairwys, exits, and refuse chutes)</td>
<td>1</td>
<td>1</td>
<td>NP</td>
</tr>
<tr>
<td></td>
<td>½</td>
<td>½</td>
<td>NP</td>
</tr>
<tr>
<td>Fire barriers</td>
<td>3</td>
<td>3</td>
<td>NP</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>1½</td>
<td>NP</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>¾</td>
<td>¼</td>
</tr>
<tr>
<td></td>
<td>½</td>
<td>½⁺</td>
<td>½</td>
</tr>
</tbody>
</table>

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### Table of Fire Safety Requirements

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Minimum Rating</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Horizontal exits</td>
<td>2</td>
<td>NP</td>
</tr>
<tr>
<td>Horizontal exits served by</td>
<td>2</td>
<td>NP</td>
</tr>
<tr>
<td>bridges between buildings</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exit access corridors†</td>
<td>1</td>
<td>NP</td>
</tr>
<tr>
<td></td>
<td>½</td>
<td></td>
</tr>
<tr>
<td>Smoke barriers†</td>
<td>1</td>
<td>NP</td>
</tr>
<tr>
<td></td>
<td>½</td>
<td></td>
</tr>
<tr>
<td>Smoke partitions†‡</td>
<td>½</td>
<td></td>
</tr>
</tbody>
</table>

NP: Not permitted.


‡ For residential board and care, see 32.2.3.1 and 33.2.3.1.

### 8.3.5.1.4 Penetrations

Penetrations in fire-rated horizontal assemblies shall have a minimum 1-hour T rating, but not less than the fire resistance rating of the horizontal assembly. Rated penetrations shall not be required for either of the following:

1. Floor penetrations contained within the cavity of a wall assembly
2. Penetrations through floors or floor assemblies where the penetration is not in direct contact with combustible material

### 8.4.2 Continuity

The following shall apply to smoke partitions:

1. They shall extend from the floor to the underside of the floor or roof deck above, through any concealed spaces, such as those above suspended ceilings, and through interstitial structural and mechanical spaces.

2. They shall be permitted to extend from the floor to the underside of a monolithic or suspended ceiling system where the following conditions are met:
   - The ceiling system forms a continuous membrane.
   - A smoke-tight joint is provided between the top of the smoke partition and the bottom of the suspended ceiling.
   - The space above the ceiling is not used as a plenum.

3. Smoke partitions enclosing hazardous areas shall be permitted to terminate at the underside of a monolithic or suspended ceiling system where the following conditions are met:
   - The ceiling system forms a continuous membrane.
   - A smoke-tight joint is provided between the top of the smoke partition and the
bottom of the suspended ceiling.

(c) Where the space above the ceiling is used as a plenum, return grilles from the hazardous area into the plenums are not permitted.

8.5.4 Opening Protectives.

8.5.4.1* Doors in smoke barriers shall close the opening, leaving only the minimum clearance necessary for proper operation, and shall be without undercuts, louveres, or grilles. The clearance under the bottom of a new door shall be a maximum of 3/4 inch.

8.5.4.2 Where required by Chapters 11 through 43, doors in smoke barriers that are required to be smoke-leakage rated shall comply with the requirements of 8.2.2.5.

8.5.5.4.2 Smoke dampers and combination fire and smoke dampers required by this Code shall be inspected, tested, and maintained in accordance with NFPA 105, Standard for the Installation of Smoke Door Assemblies and Other Opening Protectives.

8.6.3 Continuity Exemptions. The requirements of 8.6.2 shall not apply where otherwise permitted by any of the following:

(1) Penetrations for cables, cable trays, conduits, pipes, tubes, combustion vents and exhaust vents, wires, pneumatic tube conveyors, and similar items to accommodate electrical, mechanical, plumbing, and communications systems protected in accordance with 8.3.5.1 and 8.5.6.

(2) Where specified by 8.6.6, 8.6.7, 8.6.8.1, 8.6.8.2, 8.6.8, 8.6.9.1, or Chapters 11 through 43

(3) Where escalators and moving walks are protected in accordance with 8.6.8.5 or 8.6.8.6

(4) Where expansion or seismic joints are designed to prevent the penetration of fire and are shown to have a fire resistance rating of not less than that required for the floor when tested in accordance with ANSI/UL 2079, Standard for Tests for Fire Resistance of Building Joint Systems

(5) Where existing mail chutes meet one of the following criteria:

(a) The cross-sectional area does not exceed 0.1 ft² (0.01 m²).

(b) The building is protected throughout by an approved automatic sprinkler system in accordance with Section 9.7.

8.6.7* Atriums. Unless prohibited by Chapters 11 through 43, an atrium shall be permitted, provided that the following conditions are met:

(1) The atrium is separated from the adjacent spaces by fire barriers with not less than a 1-hour fire resistance rating with opening protectives for corridor walls, unless one of the following is met:

(a) The requirement of 8.6.7(1) shall not apply to existing, previously approved atriums.

(b) Any number of levels of the building shall be permitted to open directly to the
atrium without enclosure based on the results of the engineering analysis required in 8.6.7(5).

(c)* Glass walls and inoperable windows shall be permitted in lieu of the fire barriers where all the following are met:

i. Automatic sprinklers are spaced along both sides of the glass wall and the inoperable windows at intervals not to exceed 6 ft (1830 mm).

ii. The automatic sprinklers specified in 8.6.7(1)(c)(i) are located at a distance from the glass wall not to exceed 12 in. (305 mm) and arranged so that the entire surface of the glass is wet upon operation of the sprinklers.

iii. The glass wall is of tempered, wired, or laminated glass held in place by a gasket system that allows the glass framing system to deflect without breaking (loading) the glass before the sprinklers operate.

iv. The automatic sprinklers required by 8.6.7(1)(c)(i) are not required on the atrium side of the glass wall and the inoperable window where there is no walkway or other floor area on the atrium side above the main floor level.

v. Doors in the glass walls are of glass or other material that resists the passage of smoke.

vi. Doors in the glass walls are self-closing or automatic-closing upon detection of smoke.

vii. The glass is continuous vertically, without horizontal mullions, window treatments, or other obstructions that would interfere with the wetting of the entire glass surface.

(2) Access to exits is permitted to be within the atrium, and exit discharge in accordance with 7.7.2 is permitted to be within the atrium.

(3) The occupancy within the atrium meets the specifications for classification as low or ordinary hazard contents. (See 6.2.2.)

(4) The entire building is protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 9.7.

(5)* For other than existing, previously approved atriums, an engineering analysis is performed that demonstrates that the building is designed to keep the smoke layer interface above the highest unprotected opening to adjoining spaces, or 6 ft (1830 mm) above the highest floor level of exit access open to the atrium, for a period equal to 1.5 times the calculated egress time or 20 minutes, whichever is greater.

(6)* In other than existing, previously approved atriums, where an engineered smoke control system is installed to meet the requirements of 8.6.7(5), the system is independently activated by each of the following:

(a) Required automatic sprinkler system

(b) Manual controls that are readily accessible to the fire department

8.6.8 Convenience Openings - Two Story Openings with Partial Enclosure

8.6.8.1 A vertical opening serving as other than an exit enclosure, connecting only two adjacent stories and piercing only one floor, shall be permitted to be open to one of the two stories.
8.6.9 Convenience Openings

8.6.8.2 8.6.9.1 Where permitted by Chapters 11 through 43, unenclosed vertical openings not concealed within the building construction shall be permitted as follows:

1. Such openings shall connect not more than two adjacent stories (one floor pierced only).
2. Such openings shall be separated from unprotected vertical openings serving other floors by a barrier complying with 8.6.5.
3. Such openings shall be separated from corridors.
4. In new construction, the convenience opening shall be separated from the corridor referenced in 8.6.8.2(3) by a smoke partition, unless Chapters 11 through 43 require the corridor to have a fire resistance rating.
5. Such openings shall not serve as a required means of egress.

A.8.6.8.2(5) A.8.6.9.1(5) This requirement prohibits means of egress down or up the convenience opening. It does not prohibit means of escape from running down or up the convenience opening within residential dwelling units.

8.6.8.3 8.6.9.2 For other than existing hoistways in existing buildings, elevator cars located within a building shall be enclosed as follows:

1. Where there are three or fewer elevator cars in the building, they shall be permitted to be located within the same hoistway enclosure.
2. Where there are four elevator cars in the building, they shall be divided in such a manner that not less than two separate hoistway enclosures are provided.
3. Where there are more than four elevator cars in the building, the number of elevator cars located within a single hoistway enclosure shall not exceed four.

8.6.8.4 8.6.9.3 Service openings for conveyors, elevators, and dumbwaiters, where required to be open on more than one story at the same time for purposes of operation, shall be provided with closing devices in accordance with 7.2.1.8.

8.6.8.5 8.6.9.4 Any escalators and moving walks serving as a required exit in existing buildings shall be enclosed in the same manner as exit stairways. (See 7.1.3.2.)

8.6.8.6 8.6.9.5 Any convenience stairways connecting more than two stories, escalators and moving walks not constituting an exit or serving as a required means of egress shall have their floor openings enclosed or protected as required for other vertical openings, unless otherwise permitted by one of the following:

1. The requirement of 8.6.8.6 shall not apply to escalators in large open areas, such as atriums and enclosed shopping malls.
2. In buildings protected throughout by an approved automatic sprinkler system in accordance with Section 9.7, convenience stairways connecting more than two stories, escalator and moving walk openings shall be permitted to be protected in accordance with the method detailed in NFPA 13, Standard for the Installation of Sprinkler Systems, or in accordance with a method approved by the authority having jurisdiction.
(3) In buildings protected throughout by an approved automatic sprinkler system in accordance with Section 9.7, escalator and moving walk openings shall be permitted to be protected by rolling steel shutters appropriate for the fire resistance rating of the vertical opening as follows: complying with all of the following:

(a) The shutters shall close automatically and independently of each other upon smoke detection and sprinkler operation.

(b) A manual means of operating and testing the operation of the shutters shall be provided.

(c) The shutters shall be operated not less than once a week to ensure that they remain in proper operating condition.

(d) The shutters shall operate at a speed not to exceed 30 ft/min (0.15 m/s) and shall be equipped with a sensitive leading edge.

(e) The leading edge shall arrest the progress of a moving shutter and cause it to retract a distance of approximately 6 in. (150 mm) upon the application of a force not exceeding 20 lbf (90 N) applied to the surface of the leading edge.

(f) The shutter, following the retraction specified in 8.6.8.6(3)(e), shall continue to close.

(g) The operating mechanism for the rolling shutter shall be provided with standby power complying with the provisions of NFPA 70, National Electrical Code.

A.8.6.8.6(2) A.8.6.9.5(2) The intent is to place a limitation on the size of the opening to which the protection applies. The total floor opening should not exceed twice the projected area of the escalator or moving walk at the floor. Also, the arrangement of the opening is not intended to circumvent the requirements of 8.6.7.

As with any opening through a floor, the openings around the outer perimeter of the escalators should be considered as vertical openings.

8.6.9 8.6.10 Mezzanines.

8.6.910.1 General. Multilevel residential housing areas in detention and correctional occupancies in accordance with Chapters 22 and 23 shall be exempt from the provisions of 8.6.9.2 and 8.6.9.3.

8.6.910.2 Area Limitations.

8.6.910.2.1 The aggregate area of mezzanines located within a room, other than those located in special-purpose industrial occupancies, shall not exceed one-third the open area of the room in which the mezzanines are located. Enclosed space shall not be included in a determination of the size of the room in which the mezzanine is located.

8.6.910.2.2 No limit on the number of mezzanines in a room shall be required.

8.6.910.2.3 For purposes of determining the allowable mezzanine area, the aggregate area of the mezzanines shall not be included in the area of the room.

8.6.910.3 Openness. The openness of mezzanines shall be in accordance with 8.6.9.3.1 or
8.6.9.3.2.

8.6.910.3.1 All portions of a mezzanine, other than walls not more than 42 in. (1065 mm) high, columns, and posts, shall be open to and unobstructed from the room in which the mezzanine is located, unless the occupant load of the aggregate area of the enclosed space does not exceed 10.

8.6.910.3.2 A mezzanine having two or more means of egress shall not be required to open into the room in which it is located if not less than one of the means of egress provides direct access from the enclosed area to an exit at the mezzanine level.

8.6.10 Concealed Spaces and Draftstops.

8.6.10.1 Any concealed combustible space in which building materials having a flame spread index greater than Class A are exposed shall be draftstopped as follows:

1. Every exterior and interior wall and partition shall be firestopped at each floor level, at the top story ceiling level, and at the level of support for roofs.

2. Every unoccupied attic space shall be subdivided by draftstops into areas not to exceed 3000 ft² (280 m²).

3. Any concealed space between the ceiling and the floor or roof above shall be draftstopped for the full depth of the space along the line of support for the floor or roof structural members and, if necessary, at other locations to form areas not to exceed 1000 ft² (93 m²) for any space between the ceiling and floor, and 3000 ft² (280 m²) for any space between the ceiling and roof.

8.6.10.2 The requirements of 8.6.10.1 shall not apply where any of the following conditions are met:

1. Where the space is protected throughout by an approved automatic sprinkler system in accordance with Section 9.7

2. Where concealed spaces serve as plenums

3. Where the installation is an existing installation


8.6.11.3 Draftstopping materials shall be not less than ½ in. (13 mm) thick gypsum board, ⅜ in. (12 mm) thick plywood, or other approved materials that are adequately supported.

8.6.11.4 The integrity of all draftstops shall be maintained.

8.6.11.5 In existing buildings, firestopping and draftstopping shall be provided as required by Chapters 11 through 43.
Chapter 9 Building Service and Fire Protection Equipment

9.1.3* Emergency Generators and Standby Power Systems. Where required for compliance with this Code, emergency generators and standby power systems shall comply with 9.1.3.1 and 9.1.3.2.

A.9.1.3 Where buildings are provided with standby electrical power for the purpose of continuing operations or occupancy, any electric fire pump installed to provide adequate water supply or minimum pressure to a required automatic sprinkler system should also be provided with standby electrical power. Where the building is evacuated or is otherwise not occupied during a loss of power incident, standby power for an electric pump is not called for to address life safety applications.

9.4.2 Code Compliance.

9.4.2.1 Except as modified herein, new elevators, escalators, dumbwaiters, and moving walks shall be in accordance with the requirements of ASME A17.1/CSA B44, Safety Code for Elevators and Escalators.

9.4.2.2 Except as modified herein, existing elevators, escalators, dumbwaiters, and moving walks shall conform to be in accordance with the requirements of ASME A17.3, Safety Code for Existing Elevators and Escalators.

9.4.2.3 Elevators in accordance with ASME A17.7/CSA B44.7, Performance-Based Safety Code for Elevators and Escalators shall be deemed to comply with ASME A17.1/CSA B44 or ASME A17.3.

9.4.2.4 For other than elevators used for occupant-controlled evacuation in accordance with Annex B and other than existing elevators, the elevator corridor call station pictograph specified in 2.27.9 of ASME A17.1/CSA B44 shall be provided at each elevator landing.

9.6.1.6* Where a required fire alarm system is out of service for more than 48 hours in a 24-hour period, the authority having jurisdiction shall be notified, and the building shall be evacuated, or an approved fire watch shall be provided for all parties left unprotected by the shutdown, until the fire alarm system has been returned to service.

9.6.1.8.1.3 Automatic smoke detection in accordance with 9.6.1.8.1(1), 9.6.1.8.1(2) and 9.6.1.8.1(3) shall not be required where the buildings are protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 9.7 and the area containing the fire alarm control unit is sprinklered.
9.6.5.2 Where required by another section of this Code, the following functions shall be actuated:

- Release of hold-open devices for doors or other opening protective
- Stairwell or elevator shaft pressurization
- Smoke management or smoke control systems
- Unlocking of doors
- Elevator recall and shutdown
- HVAC shutdown

9.7.2.1* Supervisory Signals. Where supervised automatic sprinkler systems are required by another section of this Code, supervisory attachments shall be installed and monitored for integrity in accordance with NFPA 72, National Fire Alarm Code, and a distinctive supervisory signal shall be provided to indicate a condition that would impair the satisfactory operation of the sprinkler system. System components and parameters that are required to be monitored shall include, but shall not be limited to, control valves, fire pump power supplies and running conditions, water tank levels and temperatures, tank pressure, and air pressure on dry-pipe valves. Supervisory signals shall sound and shall be displayed either at a location within the protected building that is constantly attended by qualified personnel or at an approved, remotely located receiving facility.

A.9.7.2.1 NFPA 72, National Fire Alarm Code, provides details of standard practice in sprinkler supervision. Subject to the approval of the authority having jurisdiction, sprinkler supervision is also permitted to be provided by direct connection to municipal fire departments or, in the case of very large establishments, to a private headquarters providing similar functions. NFPA 72 covers such matters. System components and parameters that are required to be monitored include, but are not limited to, control valves, water tank levels and temperatures, tank pressure, and air pressure on dry-pipe valves. Where municipal fire alarm systems are involved, reference should also be made to NFPA 1221, Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems.

9.7.3.3 Automatic fire extinguishing systems installed as an alternative to the required automatic sprinkler systems shall be approved by the authority having jurisdiction. Automatic fire extinguishing systems shall not be considered alternatives for the purposes of exceptions or reductions permitted by other requirements of this Code.

9.7.4.1* Where required by the provisions of another section of this Code, portable fire extinguishers shall be selected, installed, inspected, and maintained in accordance with NFPA 10, Standard for Portable Fire Extinguishers.

9.7.6.1 Where a required automatic sprinkler system is out of service for more than 4 hours in a 24-hour period, the authority having jurisdiction shall be notified, and the building shall be evacuated or an
approved fire watch shall be provided for all parties left unprotected by the shutdown until the sprinkler system has been returned to service.

**9.8 Carbon Monoxide (CO) Detection and Warning Equipment.** Where required by another section of this Code, carbon monoxide (CO) detection and warning equipment shall be provided in accordance with NFPA 720, *Standard for the Installation of Carbon Monoxide (CO) Detection and Warning Equipment.*
### Chapter 10 Interior Finish, Contents, and Furnishings

#### 10.2* Interior Finish.

**A.10.2** The requirements pertaining to interior finish are intended to restrict the spread of fire over the continuous surface forming the interior portions of a building.

Table A.10.2 shows the fire test methods and classification criteria that apply to different interior finish materials.

<table>
<thead>
<tr>
<th>Material</th>
<th>Test Method</th>
<th>Acceptance Criterion</th>
<th>Application Requirement</th>
<th>Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interior wall and ceiling finish materials, except as shown in this table</td>
<td>ASTM E 84 or ANSI/UL 723</td>
<td>Class A, in accordance with 10.2.3.4 (1)</td>
<td>As required by relevant sections</td>
<td>10.2.3</td>
</tr>
<tr>
<td></td>
<td>ASTM E 84 or ANSI/UL 723</td>
<td>Class B, in accordance with 10.2.3.4 (2)</td>
<td>As required by relevant sections</td>
<td>10.2.3</td>
</tr>
<tr>
<td></td>
<td>ASTM E 84 or ANSI/UL 723</td>
<td>Class C, in accordance with 10.2.3.4 (3)</td>
<td>As required by relevant sections</td>
<td>10.2.3</td>
</tr>
<tr>
<td></td>
<td>NFPA 286</td>
<td>In accordance with 10.2.3.7.2</td>
<td>Permitted where Class A, B, or C is required by relevant sections</td>
<td>10.2.3.2</td>
</tr>
<tr>
<td>Materials having thickness &lt; 28 in. (0.90 mm) applied directly to the surface of walls or ceilings</td>
<td></td>
<td>No testing required</td>
<td></td>
<td>10.2.1.2</td>
</tr>
<tr>
<td>Exposed portions of structural members complying with requirements for buildings of Type IV (2HH) construction in accordance with NFPA 220</td>
<td></td>
<td>No testing required</td>
<td></td>
<td>10.2.3.1</td>
</tr>
<tr>
<td>Cellular or foamed plastics (exposed foamed plastics and foamed plastics used in conjunction with textile or vinyl facing or cover)</td>
<td>NFPA 286</td>
<td>In accordance with 10.2.3.7.2</td>
<td>Permitted where Class A, B, or C is required by relevant sections</td>
<td>10.2.4.3.1.1(1)</td>
</tr>
<tr>
<td></td>
<td>ANSI/UL 1715</td>
<td>Pass</td>
<td>Permitted where Class A, B, or C is required by relevant sections</td>
<td>10.2.4.3.1.1(2)</td>
</tr>
<tr>
<td>Material Type</td>
<td>Standard/Method</td>
<td>Test Method</td>
<td>Requirement</td>
<td></td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>--------------------------</td>
<td>------------------------------</td>
<td>----------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>ANSI/UL 1040</td>
<td>Pass</td>
<td>Permitted where Class A, B, or C is required by relevant sections</td>
<td>10.2.4.3.1.1(3)</td>
<td></td>
</tr>
<tr>
<td>FM 4880</td>
<td>Pass</td>
<td>Permitted where Class A, B, or C is required by relevant sections</td>
<td>10.2.4.3.1.1(4)</td>
<td></td>
</tr>
<tr>
<td>Suitable large-scale fire test that substantiates combustibility characteristics for use intended under actual fire conditions</td>
<td>Pass</td>
<td>Permitted where Class A, B, or C is required by relevant sections</td>
<td>10.2.4.3.1</td>
<td></td>
</tr>
<tr>
<td>Textile wall coverings</td>
<td>NFPA 286</td>
<td>In accordance with 10.2.3.7.2</td>
<td>Permitted where Class A, B, or C is required by relevant sections</td>
<td>10.2.4.1(6)</td>
</tr>
<tr>
<td></td>
<td>NFPA 265, Method B</td>
<td>In accordance with 10.2.3.7.1</td>
<td>Permitted on walls and partitions</td>
<td>10.2.4.1(5)</td>
</tr>
<tr>
<td></td>
<td>ASTM E 84 or</td>
<td>Class A, in accordance with 10.2.3.4 (1)</td>
<td>Permitted on walls, but also requires sprinklers per Section 9.7</td>
<td>10.2.4.1(1)</td>
</tr>
<tr>
<td></td>
<td>ANSI/UL 723</td>
<td></td>
<td></td>
<td>10.2.4.1(2)</td>
</tr>
<tr>
<td></td>
<td>ASTM E 84 or</td>
<td>Class A, in accordance with 10.2.3.4 (1)</td>
<td>Permitted on partitions not exceeding three-quarters of the floor-to-ceiling height or not exceeding 8 ft (2440 mm) in height, whichever is less</td>
<td>10.2.4.1(3)</td>
</tr>
<tr>
<td></td>
<td>ANSI/UL 723</td>
<td></td>
<td></td>
<td>10.2.4.1(4)</td>
</tr>
<tr>
<td></td>
<td>ASTM E 84 or</td>
<td>Class A, in accordance with 10.2.3.4 (1)</td>
<td>Previously approved existing installations of textile material meeting the requirements of Class A having a Class A rating permitted to be continued to be used</td>
<td>10.2.4.1(4)</td>
</tr>
<tr>
<td></td>
<td>ANSI/UL 723</td>
<td></td>
<td></td>
<td>10.2.4.1(4)</td>
</tr>
<tr>
<td>Expanded vinyl wall coverings</td>
<td>NFPA 286</td>
<td>In accordance with 10.2.3.7.2</td>
<td>Permitted where Class A, B, or C is required by relevant sections</td>
<td>10.2.4.2(6)</td>
</tr>
<tr>
<td></td>
<td>NFPA 265, Method B</td>
<td>In accordance with 10.2.3.7.1</td>
<td>Permitted on walls and partitions</td>
<td>10.2.4.2(5)</td>
</tr>
<tr>
<td></td>
<td>ASTM E 84 or</td>
<td>Class A, in accordance with 10.2.3.4 (1)</td>
<td>Permitted on walls, but also requires sprinklers per Section 9.7</td>
<td>10.2.4.2(1)</td>
</tr>
<tr>
<td></td>
<td>ANSI/UL 723</td>
<td></td>
<td></td>
<td>10.2.4.2(2)</td>
</tr>
<tr>
<td></td>
<td>ASTM E 84 or</td>
<td>Class A, in accordance with 10.2.3.4 (1)</td>
<td>Permitted on partitions not exceeding three-quarters of the floor-to-ceiling height or not exceeding 8 ft (2440 mm) in height, whichever is less</td>
<td>10.2.4.2(2)</td>
</tr>
<tr>
<td>Material Type</td>
<td>Classification</td>
<td>Requirements</td>
<td>Section</td>
<td></td>
</tr>
<tr>
<td>-----------------------------------------------------------</td>
<td>-------------------------</td>
<td>-------------------------------------------------------------------------------</td>
<td>---------</td>
<td></td>
</tr>
<tr>
<td>Textile ceiling coverings</td>
<td>NFPA 286</td>
<td>Permitted where Class A, B, or C is required by relevant sections</td>
<td>10.2.4.1(6)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ASTM E 84 or ANSI/UL 723</td>
<td>In accordance with 10.2.3.7.2</td>
<td>10.2.4.1(6)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Class A, in accordance with 10.2.3.4 (1)</td>
<td>Permitted where Class A, B, or C is required by relevant sections</td>
<td>10.2.4.1(6)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Class A, B, or C, in accordance with 10.2.3.4</td>
<td>Permitted on walls, but also requires sprinklers per Section 9.7</td>
<td>10.2.4.1(1)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Class A, in accordance with 10.2.3.4 (1)</td>
<td>Permitted on walls, but also requires sprinklers per Section 9.7</td>
<td>10.2.4.1(4)</td>
<td></td>
</tr>
<tr>
<td>Expanded vinyl ceiling coverings</td>
<td>NFPA 286</td>
<td>Preceding installations of textile material meeting the requirements of Class A having a Class A rating permitted to be continued to be used</td>
<td>10.2.4.2(6)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ASTM E 84 or ANSI/UL 723</td>
<td>In accordance with 10.2.3.7.2</td>
<td>10.2.4.2(6)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Class A, in accordance with 10.2.3.4 (1)</td>
<td>Permitted on walls, but also requires sprinklers per Section 9.7</td>
<td>10.2.4.2(1)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Class A, B, or C, in accordance with 10.2.3.4</td>
<td>Existing installations of materials with appropriate wall finish classification for occupancy involved, and with classification in accordance with the provisions of 10.2.3.4</td>
<td>10.2.4.2(4)</td>
<td></td>
</tr>
<tr>
<td>Interior trim, other than foamed plastic and other than wall base</td>
<td>ASTM E 84 or ANSI/UL 723</td>
<td>Class C, in accordance with 10.2.3.4</td>
<td>10.2.5.1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>NFPA 286</td>
<td>Permitted where Class A, B, or C is required by relevant sections</td>
<td>10.2.5.1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>In accordance with 10.2.3.7.2</td>
<td>Interior wall and ceiling trim and incidental finish, other than wall base not in excess of 10 percent of the aggregate wall and ceiling areas of any room or space where interior wall and ceiling finish of Class A or Class B is required</td>
<td>10.2.5.1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Class C, in accordance with 10.2.3.4</td>
<td>Permitted where Class A, B, or C is required by relevant sections</td>
<td>10.2.3.2</td>
<td></td>
</tr>
<tr>
<td>Material Type</td>
<td>Test Standard</td>
<td>Required Index/Value</td>
<td>Relevant Section</td>
<td></td>
</tr>
<tr>
<td>---------------------------------------</td>
<td>-------------------</td>
<td>------------------------------------------------</td>
<td>------------------</td>
<td></td>
</tr>
<tr>
<td>Foamed plastic used as interior trim</td>
<td>ASTM E 84 or ANSI/UL 723</td>
<td>Flame spread index ≤ 75</td>
<td>10.2.4.3.2</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(1) Minimum density of interior trim required to be 20 lb/ft³ (320 kg/m³)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(2) Maximum thickness of interior trim required to be ½ in. (13 mm), and maximum width required to be 4 in. (100 mm)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(3) Interior trim not permitted to constitute more than 10 percent of the wall or ceiling area of a room or space</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>NFPA 286</td>
<td>In accordance with 10.2.3.7.2</td>
<td>10.2.3.2</td>
<td></td>
</tr>
<tr>
<td>Fire-retardant coatings</td>
<td>NFPA 703</td>
<td>Class A, B, or C, when tested by ASTM E 84 or ANSI/UL 723, in accordance with 10.2.3.4</td>
<td>10.2.6.1</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Required flame spread index or smoke developed index values of existing surfaces of walls, partitions, columns, and ceilings permitted to be secured by applying approved fire-retardant coatings to surfaces having higher flame spread index values ratings than permitted; such treatments required to be tested, or listed and labeled for application to material to which they are applied</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carpet and carpetlike interior floor finishes</td>
<td>ASTM D 2859</td>
<td>Pass</td>
<td>10.2.7.1</td>
<td></td>
</tr>
<tr>
<td>Floor coverings, other than carpet, judged to represent an unusual hazard (excluding traditional finish floors and floor coverings, such as wood flooring and resilient floor coverings)</td>
<td>NFPA 253</td>
<td>Critical radiant flux ≥ 0.1 W/cm²</td>
<td>10.2.7.2</td>
<td></td>
</tr>
<tr>
<td>Interior floor finish, other than carpet and carpetlike materials</td>
<td>NFPA 253</td>
<td>Class I: Critical radiant flux ≥ 0.45 W/cm², in accordance with 10.2.7.4</td>
<td>10.2.7.3</td>
<td></td>
</tr>
</tbody>
</table>
### 10.2.1.1 Classification of interior finish materials shall be in accordance with tests made under conditions simulating actual installations, provided that the authority having jurisdiction shall be permitted to establish the classification of any material on which a rating classification by a standard test is not available, unless otherwise provided in 10.2.1.2.

#### 10.2.1.3 Approved existing installations of materials applied directly to the surface of walls and ceilings in a total thickness of less than 1/28 in. (0.9 mm) shall be permitted to remain in use and the provisions of 10.2.2 through 10.2.3.7.2 shall not apply.

#### 10.2.1.34* Fixed or movable walls and partitions, paneling, wall pads, and crash pads applied structurally or for decoration, acoustical correction, surface insulation, or other purposes shall be considered interior finish and shall not be considered decorations or furnishings.

#### A.10.2.1.34 Such partitions are intended to include washroom water closet partitions.

#### 10.2.1.5 Lockers constructed of combustible materials shall be considered interior finish.

### 10.2.2* Use of Interior Finishes.

#### A.10.2.2 Table A.10.2.2 provides a compilation of the interior finish requirements of the occupancy chapters (Chapters 12 through 42).

<table>
<thead>
<tr>
<th>Occupancy</th>
<th>Exits</th>
<th>Exit Access Corridors</th>
<th>Other Spaces</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assembly — New</td>
<td>A</td>
<td>A or B</td>
<td>A or B</td>
</tr>
<tr>
<td>&gt;300 occupant load</td>
<td>A or II</td>
<td>I or II</td>
<td>NA</td>
</tr>
</tbody>
</table>

#### Table A.10.2.2 Interior Finish Classification Limitations
<table>
<thead>
<tr>
<th>Use Type</th>
<th>A</th>
<th>A or B</th>
<th>A, B, or C</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤ 300 occupant load</td>
<td>A</td>
<td>A or B</td>
<td>A, B, or C</td>
</tr>
<tr>
<td>Assembly — Existing</td>
<td>I or II</td>
<td>I or II</td>
<td></td>
</tr>
<tr>
<td>&gt;300 occupant load</td>
<td>A</td>
<td>A or B</td>
<td>A or B</td>
</tr>
<tr>
<td>≤ 300 occupant load</td>
<td>A</td>
<td>A or B</td>
<td>A, B, or C</td>
</tr>
<tr>
<td>Educational — New</td>
<td>A</td>
<td>A or B</td>
<td>A or B</td>
</tr>
<tr>
<td>I or II</td>
<td>I or II</td>
<td>I or II</td>
<td></td>
</tr>
<tr>
<td>Educational — Existing</td>
<td>A</td>
<td>A or B</td>
<td>A, B, or C</td>
</tr>
<tr>
<td>Day-Care Centers — New</td>
<td>A</td>
<td>A</td>
<td>A</td>
</tr>
<tr>
<td>I or II</td>
<td>I or II</td>
<td>I or II</td>
<td></td>
</tr>
<tr>
<td>Day-Care Centers — Existing</td>
<td>A or B</td>
<td>A or B</td>
<td>A, B</td>
</tr>
<tr>
<td>Day-Care Homes — New</td>
<td>A or B</td>
<td>A or B</td>
<td>A, B, or C</td>
</tr>
<tr>
<td>I or II</td>
<td>I or II</td>
<td>I or II</td>
<td></td>
</tr>
<tr>
<td>Day-Care Homes — Existing</td>
<td>A or B</td>
<td>A, B, or C</td>
<td>A, B, or C</td>
</tr>
<tr>
<td>Health Care — New</td>
<td>NA</td>
<td>B on lower portion of corridor wall†</td>
<td>B in small individual rooms†</td>
</tr>
<tr>
<td>I or II</td>
<td>I or II</td>
<td>I or II</td>
<td></td>
</tr>
<tr>
<td>Health Care — Existing</td>
<td>A or B</td>
<td>A</td>
<td>A</td>
</tr>
<tr>
<td>Detention and Correctional — New (sprinklers mandatory)</td>
<td>A or B</td>
<td>A, B, or C</td>
<td>A , B, or C</td>
</tr>
<tr>
<td>I or II</td>
<td>I or II</td>
<td>I or II</td>
<td></td>
</tr>
<tr>
<td>Detention and Correctional — Existing</td>
<td>A or B</td>
<td>A, B, or C</td>
<td>A, B, or C</td>
</tr>
<tr>
<td>I or II</td>
<td>I or II</td>
<td>I or II</td>
<td></td>
</tr>
<tr>
<td>One- and Two-Family Dwellings and Lodging or Rooming Houses</td>
<td>A, B, or C</td>
<td>A, B, or C</td>
<td>A, B, or C</td>
</tr>
<tr>
<td>Hotels and Dormitories — New</td>
<td>A</td>
<td>A or B</td>
<td>A, B, or C</td>
</tr>
<tr>
<td>I or II</td>
<td>I or II</td>
<td>I or II</td>
<td></td>
</tr>
<tr>
<td>Hotels and Dormitories — New</td>
<td>A or B</td>
<td>A or B</td>
<td>A, B, or C</td>
</tr>
<tr>
<td>Existing</td>
<td>I or II†</td>
<td>I or II†</td>
<td></td>
</tr>
<tr>
<td>Apartment Buildings — New</td>
<td>A</td>
<td>A or B</td>
<td>A, B, or C</td>
</tr>
<tr>
<td>I or II†</td>
<td>I or II†</td>
<td>I or II†</td>
<td></td>
</tr>
<tr>
<td>Apartment Buildings — Existing</td>
<td>A or B</td>
<td>A or B</td>
<td>A, B, or C</td>
</tr>
<tr>
<td>Residential Board and Care — (See Chapters 32 and 33.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mercantile — New</td>
<td>A or B</td>
<td>A or B</td>
<td>A or B</td>
</tr>
<tr>
<td>I or II</td>
<td>I or II</td>
<td>I or II</td>
<td></td>
</tr>
<tr>
<td>Mercantile — Existing</td>
<td>A or B</td>
<td>A or B</td>
<td>A, B, or C</td>
</tr>
<tr>
<td>Class A or Class B stores</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business and Ambulatory</td>
<td>A or B</td>
<td>A or B</td>
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Notes:
(1) Class A interior wall and ceiling finish — flame spread index, 0–25 (new applications), smoke developed index, 0–450.
(2) Class B interior wall and ceiling finish — flame spread index, 26–75 (new applications), smoke developed index, 0–450.
(3) Class C interior wall and ceiling finish — flame spread index, 76–200 (new applications), smoke developed index, 0–450.
(4) Class I interior floor finish — critical radiant flux, not less than 0.45 W/cm².
(5) Class II interior floor finish — critical radiant flux, not more than 0.22 W/cm², but less than 0.45 W/cm².
(6) Automatic sprinklers — where a complete standard system of automatic sprinklers is installed, interior wall and ceiling finish meeting requirements of at least with a flame spread rating not exceeding Class C is permitted to be used in any location where Class B is required and meeting requirements with a rating of Class B in any location where Class A is required; similarly, Class II interior floor finish is permitted to be used in any location where Class I is required, and no critical radiant flux classification rating is required where Class II is required. These provisions do not apply to new detention and correctional occupancies.
(7) Exposed portions of structural members complying with the requirements for heavy timber construction are permitted.
†See corresponding chapters for details.


10.2.3.4* Products required to be tested in accordance with ASTM E 84, *Standard Test Method for Surface Burning Characteristics of Building Materials*, or ANSI/UL 723, *Standard for Test for Surface Burning Characteristics of Building Materials*, shall be classified as follows in accordance with their flame spread index and smoke developed index development, except as indicated in 10.2.3.4(4):

(1) Class A interior wall and ceiling finish shall be characterized by the following:
   (a) Flame spread index, 0–25
   (b) Smoke developed index, 0–450

(2) Class B interior wall and ceiling finish shall be characterized by the following:
   (a) Flame spread index, 26–75
   (b) Smoke developed index, 0–450

(3) Class C interior wall and ceiling finish shall be characterized by the following:
   (a) Flame spread index, 76–200
   (b) Smoke developed index, 0–450

(4) Existing interior finish shall be exempt from the smoke developed index development criteria of 10.2.3.4(1)(b), (2)(b), and (3)(b).
A.10.2.3.4 It has been shown that the method of mounting interior finish materials might affect actual performance. Where materials are tested in intimate contact with a substrate to determine a classification, such materials should be installed in intimate contact with a similar substrate. Such details are especially important for “thermally thin” materials. For further information, see ASTM E 84, Standard Test Method for Surface Burning Characteristics of Building Materials.

Some interior wall and ceiling finish materials, such as fabrics not applied to a solid backing, do not lend themselves to a test made in accordance with ASTM E 84. In such cases, the large-scale test outlined in NFPA 701, Standard Methods of Fire Tests for Flame Propagation of Textiles and Films, is permitted to be used.

Prior to 1978, the test report described by ASTM E 84 included an evaluation of the fuel contribution as well as the flame spread index rating and the smoke developed index, development value. However, it is now recognized that the measurement on which the fuel contribution is based does not provide a valid measure. Therefore, although the data are recorded during the test, the information is no longer normally reported. Classification of interior wall and ceiling finish thus relies only on the flame spread index and smoke developed index, development value.

The 450 smoke developed index, development value limit is based solely on obscuration. (See A.10.2.4.1.)

10.2.3.7.1 The interior finish shall comply with all of the following when tested using method B of the test protocol of NFPA 265, Standard Methods of Fire Tests for Evaluating Room Fire Growth Contribution of Textile Coverings on Full Height Panels and Walls. The following conditions shall be met:

(1) Flame shall not spread to the ceiling during the 40 kW exposure.

(2) During the 150 kW exposure, the following criteria shall be met:

(a) Flame shall not spread to the outer extremities of the sample on the 8 ft × 12 ft (2440 mm × 3660 mm) wall.

(b) Flashover shall not occur.

1. During the 40 kW exposure, flames shall not spread to the ceiling.

2. The flame shall not spread to the outer extremities of the samples on the 8 foot by 12 foot (2440 by 3660 mm) walls.

3. Flashover, as defined in NFPA 265, shall not occur.

4. For new installations, the total smoke released throughout the test shall not exceed 1,000 m².

10.2.3.7.2 The interior finish shall comply with all of the following when tested using the test protocol of NFPA 286, Standard Methods of Fire Tests for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth:

(1) Flames shall not spread to the ceiling during the 40 kW exposure.

(2) During the 160 kW exposure, the following criteria shall be met:

(a) Flame shall not spread to the outer extremities of the sample on the 8 ft × 12 ft.
(2440 mm × 3660 mm) wall.

(b) Flashover shall not occur.

(3) The peak heat release rate throughout the test shall not exceed 800 kW.

(4) For new installations, the total smoke released throughout the test shall not exceed 1000 m².

1. During the 40 kW exposure, flames shall not spread to the ceiling.
2. The flame shall not spread to the outer extremity of the sample on any wall or ceiling.
3. Flashover, as defined in NFPA 286, shall not occur.
4. The peak heat release rate throughout the test shall not exceed 800 kW.
5. For new installations the total smoke released throughout the test shall not exceed 1,000 m².

10.2.4* Specific Materials.

10.2.4.1* Textile Wall and Textile Ceiling Materials. The use of textile materials on walls or ceilings shall comply with one of the following conditions:

(1) Textile materials meeting the requirements of having a Class A rating when tested in accordance with ASTM E 84 or UL 723, using the specimen preparation and mounting method of ASTM E 2404 (see 10.2.3.4) shall be permitted on the walls or ceilings of rooms or areas protected by an approved automatic sprinkler system.

(2) Textile materials meeting the requirements of having a Class A rating when tested in accordance with ASTM E 84 or UL 723, using the specimen preparation and mounting method of ASTM E 2404, (see 10.2.3.4) shall be permitted on partitions that do not exceed three-quarters of the floor-to-ceiling height or do not exceed 8 ft (2440 mm) in height, whichever is less.

(3) Textile materials meeting the requirements of having a Class A rating when tested in accordance with ASTM E 84 or UL 723, using the specimen preparation and mounting method of ASTM E 2404 (see 10.2.3.4) shall be permitted to extend not more than 48 in. (1220 mm) above the finished floor on ceiling-height walls and ceiling-height partitions.

(4) Previously approved existing installations of textile materials meeting the requirements of having a Class A rating when tested in accordance with ASTM E 84 or UL 723 (see 10.2.3.4) shall be permitted to be continued to be used.

(5) Textile materials shall be permitted on walls and partitions where tested in accordance with NFPA 265, Standard Methods of Fire Tests for Evaluating Room Fire Growth Contribution of Textile Coverings on Full Height Panels and Walls. (See 10.2.3.7.)

(6) Textile materials shall be permitted on walls, partitions, and ceilings where tested in accordance with NFPA 286, Standard Methods of Fire Tests for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth. (See 10.2.3.7.)

10.2.4.2* Expanded Vinyl Wall and Expanded Vinyl Ceiling Materials. The use of expanded vinyl wall or expanded vinyl ceiling materials shall comply with one of the following conditions:

(1) Materials meeting the requirements of having a Class A when tested in accordance with

...
ASTM E 84 or UL 723, using the specimen preparation and mounting method of ASTM E 2404, rating (see 10.2.3.4) shall be permitted on the walls or ceilings of rooms or areas protected by an approved automatic sprinkler system.

(2) Materials meeting the requirements of having a Class A when tested in accordance with ASTM E 84 or UL 723, using the specimen preparation and mounting method of ASTM E 2404, rating (see 10.2.3.4) shall be permitted on partitions that do not exceed three-quarters of the floor-to-ceiling height or do not exceed 8 ft (2440 mm) in height, whichever is less.

(3) Materials meeting the requirements of having a Class A when tested in accordance with ASTM E 84 or UL 723, using the specimen preparation and mounting method of ASTM E 2404, rating (see 10.2.3.4) shall be permitted to extend not more than 48 in. (1220 mm) above the finished floor on ceiling-height walls and ceiling-height partitions.

(4) Previously approved existing installations of materials meeting the requirements for the occupancy involved, and with classification in accordance with the provisions of 10.2.3.4 when tested in accordance with ASTM E 84 or UL 723 (see 10.2.3.4) shall be permitted to be continued to be used.

(5) Materials shall be permitted on walls and partitions where tested in accordance with NFPA 265, Standard Methods of Fire Tests for Evaluating Room Fire Growth Contribution of Textile Coverings on Full Height Panels and Walls. (See 10.2.3.7.)

(6) Textile materials shall be permitted on walls, partitions, and ceilings where tested in accordance with NFPA 286, Standard Methods of Fire Tests for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth. (See 10.2.3.7.)

10.2.4.3.1.1 One of the following are suitable fire tests shall be used for assessing the combustibility of cellular or foamed plastic materials as interior finish:

(1) NFPA 286, Standard Methods of Fire Tests for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth, with the acceptance criteria of 10.2.3.7.2

(2) ANSI/UL 1715, Standard for Fire Test of Interior Finish Material (including smoke measurements, with total smoke release not to exceed 1000 m²)

(3) ANSI/UL 1040, Standard for Fire Test of Insulated Wall Construction

(4) FM 4880, Approval Standard for Class 1 Insulated Wall or Wall and Roof/Ceiling Panels; Plastic Interior Finish Materials; Plastic Exterior Building Panels; Wall/Ceiling Coating Systems; Interior or Exterior Finish Systems

10.2.4.3.1.2* New installations of cellular or foamed plastic materials tested in accordance with ANSI/UL 1040, Standard for Fire Test of Insulated Wall Construction, or FM 4880, Approval Standard for Class 1 Insulated Wall or Wall and Roof/Ceiling Panels; Plastic Interior Finish Materials; Plastic Exterior Building Panels; Wall/Ceiling Coating Systems; Interior or Exterior Finish Systems, shall also be tested for smoke release using suitable smoke release tests include the following:

(1) Additional measurements of smoke release into the duct that demonstrate that the total smoke released throughout the test does not exceed 1000 m²

(2) NFPA 286, Standard Methods of Fire Tests for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth, with the acceptance criterion of 10.2.3.7.2(4)

A.10.2.4.3.1.2 Both NFPA 286 and UL 1715 contain smoke obscuration criteria. UL 1040 and FM 4880 do not. Smoke obscuration is an important component of the fire performance of cellular or foamed plastic materials.

10.2.4.6 Metal Ceiling and Wall Panels. Listed factory finished Class A metal ceiling and wall panels meeting the requirements of Class A when tested in accordance with ASTM E 84 or UL 723 (see 10.2.3.4) shall be permitted to be finished with one additional application of paint. Such painted panels shall be permitted for use in areas where Class A interior finishes are required. The total paint thickness shall not exceed 1/28 in. (0.9 mm).

10.2.4.7 High Density Polyethylene (HDPE) and Polypropylene (PP). High density polyethylene and polypropylene materials shall not be permitted as interior wall or ceiling finish unless the material complies with the requirements of Section 10.2.3.7.2. The tests shall be performed on a finished assembly and on the maximum thickness intended for use.

10.2.4.8 Site-fabricated stretch systems. For new installations, site-fabricated stretch systems containing all three components described in the definition in Chapter 3 shall be tested in the manner intended for use, and shall comply with the requirements of Section 10.2.3. If the materials are tested in accordance with ASTM E 84 or UL 723, specimen preparation and mounting shall be in accordance with ASTM E 2573.

10.2.4.9 Reflective insulation materials. Reflective insulation materials shall be tested in the manner intended for use, and shall comply with the requirements of Section 10.3.2 or 10.3.6.2. If the materials are tested in accordance with ASTM E 84 or UL 723, specimen preparation and mounting shall be in accordance with ASTM E 2599.

10.2.6.1* The required flame spread index or smoke development classification developed index of existing surfaces of walls, partitions, columns, and ceilings shall be permitted to be secured by applying approved fire-retardant coatings to surfaces having higher flame spread index values ratings than permitted. Such treatments shall be tested, or shall be listed and labeled for application to the material to which they are applied, and shall comply with the requirements of NFPA 703, Standard for Fire Retardant–Treated Wood and Fire-Retardant Coatings for Building Materials.

A.10.2.6.1 It is the primary intent of the Code to mandate interior wall and ceiling finish materials that obtain their fire performance and smoke development characteristics in their original form. However, in renovations, particularly those involving historic buildings, and in changes of occupancy, the required fire performance or smoke developed characteristics of existing surfaces of walls, partitions, columns, and ceilings might have to be secured by applying approved fire-retardant coatings to surfaces having higher flame spread index values ratings than permitted. Such treatments should comply with the requirements of NFPA 703, Standard for Fire Retardant–Treated Wood and Fire-Retardant Coatings for Building Materials. When fire-retardant coatings are used, they need to be applied to surfaces properly prepared for the
material, and application needs to be consistent with the product listing. Deterioration of coatings applied to interior finishes can occur due to repeated cleaning of the surface or painting over applied coatings, but permanency must be assured in some appropriate fashion. Fire-retardant coatings must possess the desired degree of permanency and be maintained so as to retain the effectiveness of the treatment under the service conditions encountered in actual use.

10.2.7.4 Interior floor finishes shall be classified as follows in accordance with their critical radiant flux values:

(1) Class I interior floor finish shall be characterized by a critical radiant flux not less than 0.45 W/cm², as determined by the test described in 10.2.7.3.

(2) Class II interior floor finish shall be characterized by a critical radiant flux not less than 0.22 W/cm² but less than 0.45 W/cm², as determined by the test described in 10.2.7.3.

10.2.8 Automatic Sprinklers.

10.2.8.1 Unless specifically prohibited elsewhere in this Code, where an approved automatic sprinkler system is installed in accordance with Section 9.7, Class C interior wall and ceiling finish materials shall be permitted in any location where Class B is required, and Class B interior wall and ceiling finish materials shall be permitted in any location where Class A is required.

10.2.8.2 Unless specifically prohibited elsewhere in this Code, where an approved automatic sprinkler system is installed in accordance with Section 9.7, Class II interior floor finish shall be permitted in any location where Class I interior floor finish is required, and where Class II is required, no critical radiant flux rating shall be required. The provisions of 10.2.7.2 shall apply.

10.3.3* Where required by the applicable provisions of this Code, upholstered furniture, unless the furniture is located in a building protected throughout by an approved automatic sprinkler system, shall have limited rates of heat release when tested in accordance with ASTM E 1537, Standard Test Method for Fire Testing of Upholstered Furniture, as follows:

(1) The peak rate of heat release for the single upholstered furniture item shall not exceed 80 kW.

(2) The total energy heat released by the single upholstered furniture item during the first 10 minutes of the test shall not exceed 25 MJ.

A.10.3.3 The intent of the provisions of 10.3.3 is as follows:

(1) The peak heat release rate of not more than 250 80 kW by a single upholstered furniture item was chosen based on maintaining a tenable environment within the room of fire origin, and the sprinkler exception was developed because the sprinkler system helps to maintain tenable conditions, even if the single upholstered furniture item were to have a peak rate of heat release in excess of 250 80 kW.

(2) The total energy heat release of not more than 25 40 MJ by the single upholstered furniture item during the first 10 minutes of the test was established as an additional safeguard to protect against the adverse conditions that would be created by an upholstered furniture item that released its heat in other than the usual measured scenario, and the following should also be noted:

(a) During the test for measurement of rate of heat release, the instantaneous heat
release value usually peaks quickly and then quickly falls off, so as to create a triangle-shaped curve.

(b) In the atypical case, if the heat release were to peak and remain steady at that elevated level, as opposed to quickly falling off, the 250 80 kW limit would not ensure safety.

(c) Only a sprinkler exception is permitted in lieu of the test because of the ability of the sprinkler system to control the fire.

Actual test results for heat, smoke, and combustion product release from ASTM E 1537, *Standard Test Method for Fire Testing of Upholstered Furniture*, might be suitable for use as input into fire models for performance-based design. Furthermore, California Technical Bulletin 133 Flammability Test Procedure for Seating Furniture for Use in Public Occupancies includes pass fail criteria for a single upholstered furniture item, of 80 kW peak heat release rate and 25 MJ total heat release over the first 10 minutes of the test.

10.3.4* Where required by the applicable provisions of this *Code*, mattresses, unless the mattress is located in a building protected throughout by an approved automatic sprinkler system, shall have limited rates of heat release when tested in accordance with ASTM E 1590, *Standard Test Method for Fire Testing of Mattresses*, as follows:

1. The peak rate of heat release for the mattress shall not exceed 100 kW.
2. The total energy heat released by the mattress during the first 10 minutes of the test shall not exceed 25 MJ.

A.10.3.4 The intent of the provisions of 10.3.4 is as follows:

1. The peak heat release rate of not more than 250 80 kW by a single mattress was chosen based on maintaining a tenable environment within the room of fire origin, and the sprinkler exception was developed because the sprinkler system helps to maintain tenable conditions, even if the single mattress were to have a peak rate of heat release in excess of 250 80 kW.

2. The total energy release of not more than 25 40 MJ by the single mattress during the first 40 5 minutes of the test was established as an additional safeguard to protect against the adverse conditions that would be created by a mattress that released its heat in other than the usual measured scenario, and the following should also be noted:

(a) During the test for measurement of rate of heat release, the instantaneous heat release value usually peaks quickly and then quickly falls off, so as to create a triangle-shaped curve.

(b) In the atypical case, if the heat release were to peak and remain steady at that elevated level, as opposed to quickly falling off, the 250 80 kW limit would not ensure safety.

(c) Only a sprinkler exception is permitted in lieu of the test because of the ability of the sprinkler system to control the fire.

Flammability Test Procedure for Mattresses for Use in Public Buildings includes pass fail
criteria for a single mattress, of 100 kW peak heat release rate and 25 MJ total heat release over
the first 10 minutes of test.

10.3.7* Where required by the applicable provisions of this Code, furnishings and contents
made with foamed plastic materials that are unprotected from ignition shall have a heat release
rate not exceeding 100 kW when tested in accordance with UL 1975, Standard for Fire Tests for
Foamed Plastics Used for Decorative Purposes, or when tested in accordance with NFPA 289,
Standard Method of Fire Test for Individual Fuel Packages, using the 20 kW ignition source.

A.10.3.7 Neither ANSI/UL 1975, Standard for Fire Tests for Foamed Plastics Used for
Decorative Purposes, nor NFPA 289, Standard Method of Fire Test for Individual Fuel
Packages, are is not intended for evaluating interior wall and ceiling finish materials.

Actual test results for heat, smoke, and combustion product release from ANSI/UL 1975 or from
NFPA 289 might be suitable for use as input into fire models intended for performance-based
design.

10.3.8 Lockers.

10.3.8.1 Combustible lockers. Where lockers constructed of combustible materials other than
wood are used, the lockers shall be considered interior finish and shall comply with Section 10.2,
except as permitted by 10.3.8.2.

10.3.8.2 Wood lockers. Lockers constructed entirely of wood and of noncombustible materials
shall be permitted to be used in any location where interior finish materials are required to meet a
Class C classification in accordance with 10.2.3.

10.3.9 Containers for rubbish, waste or linen with a capacity of 20 gallons or more. Newly
introduced containers for rubbish, waste or linen, including their lids, with a capacity of 20
gallons (75.7 L) or more shall be constructed of noncombustible materials or of materials that
meet a peak rate of heat release not exceeding 300 kW/m² when tested, at an incident heat flux of
50 kW/m² in the horizontal orientation, at a thickness as used in the container but not less than
0.25 in. (6 mm), in accordance with ASTM E 1354, Test Method for Heat and Visible Smoke
Release Rates for Materials and Products Using an Oxygen Consumption Calorimeter, or NFPA
271, Standard Method of Test for Heat and Visible Smoke Release Rates for Materials and
Products Using an Oxygen Consumption Calorimeter. Metal wastebaskets and other metal
rubbish, waste or linen containers with a capacity of 20 gallons (75.7 L) or more shall be listed in
accordance with UL 1315, Standard for Safety for Metal Waste Paper Containers, and shall be
provided with a noncombustible lid.
Add two new paragraphs as the second and third paragraph of each occupancy chapter.

XX.1.1.2 Administration. The provisions of Chapter 1 Administration shall apply.

XX.1.1.3 General. The provisions of Chapter 4 General shall apply.

12.1 General Requirements
12.1.1 Application

12.1.1.1 The requirements of this chapter shall apply to new buildings or portions thereof used as an assembly occupancy (see 1.3.1)

12.1.1.2 Administration. The provisions of Chapter 1 Administration shall apply

12.1.1.3 General. The provisions of Chapter 4 General shall apply.

Add a new 13.1.1.2 and 13.1.1.3

13.1.1.2 Administration. The provisions of Chapter 1 Administration shall apply

13.1.1.3 General. The provisions of Chapter 4 General shall apply.

Add a new 14/15.1.1.2 and 14/15.1.1.3

14/15.1.1.2 Administration. The provisions of Chapter 1 Administration shall apply

14/15.1.1.3 General. The provisions of Chapter 4 General shall apply

Add a new 16/17.1.1.2 and 16/17.1.1.3

16/17.1.1.2 Administration. The provisions of Chapter 1 Administration shall apply

16/17.1.1.3 General. The provisions of Chapter 4 General shall apply.

Add a new 18/19.1.1.2 and 18/19.1.1.3 NOTE: The extra digit “1” in this occupancy

18/19.1.1.2 Administration. The provisions of Chapter 1 Administration shall apply

18/19.1.1.3 General. The provisions of Chapter 4 General shall apply.

Add a new 20/21.1.1.2 and 20/21.1.1.3 NOTE: The extra digit “1” in this occupancy

20/21.1.1.2 Administration. The provisions of Chapter 1 Administration shall apply

20/21.1.1.3 General. The provisions of Chapter 4 General shall apply

Add a new 22/23.1.1.2 and 22/23.1.1.3 NOTE: The extra digit “1” in this occupancy

22/23.1.1.2 Administration. The provisions of Chapter 1 Administration shall apply

22/23.1.1.3 General. The provisions of Chapter 4 General shall apply.

Add a new 24.1.1.2 and 24.1.1.3

24.1.1.2 Administration. The provisions of Chapter 1 Administration shall apply

24.1.1.3 General. The provisions of Chapter 4 General shall apply.

Add a new 26.1.1.2 and 26.1.1.3

26.1.1.2 Administration. The provisions of Chapter 1 Administration shall apply

26.1.1.3 General. The provisions of Chapter 4 General shall apply.

Add a new 28/29.1.1.2 and 28/29.1.1.3

28/29.1.1.2 Administration. The provisions of Chapter 1 Administration shall apply

28/29.1.1.3 General. The provisions of Chapter 4 General shall apply.

Add a new 30/31.1.1.2 and 30/31.1.1.

30/31.1.1.2 Administration. The provisions of Chapter 1 Administration shall apply

30/31.1.1.3 General. The provisions of Chapter 4 General shall apply

Add a new 32/33.1.1.2 and 32/33.1.1.3

32/33.1.1.2 Administration. The provisions of Chapter 1 Administration shall apply

32/33.1.1.3 General. The provisions of Chapter 4 General shall apply

Add a new 36/37.1.1.2 and 36/37.1.1.

36/37.1.1.2 Administration. The provisions of Chapter 1 Administration shall apply

36/37.1.1.3 General. The provisions of Chapter 4 General shall apply

Add a new 38/39.1.1.2 and 38/39.1.1.3

38/39.1.1.2 Administration. The provisions of Chapter 1 Administration shall apply

38/39.1.1.3 General. The provisions of Chapter 4 General shall apply

Add a new 40.1.1.2 and 40.1.1.3
40.1.2 Administration. The provisions of Chapter 1 Administration shall apply
40.1.3 General. The provisions of Chapter 4 General shall apply
Add a new 42.1.2 and 42.1.3
42.1.2 Administration. The provisions of Chapter 1 Administration shall apply
42.1.3 General. The provisions of Chapter 4 General shall apply

Substantiation: NFPA has always taught that one uses NFPA 101 by entering into the appropriate occupancy chapter. In fact A.1.1 states such. However, if one goes directly to the occupancy chapter, there are no general references back to Chapters 1 or 4. The location that is recommended above is to keep the location consistent. However, in many chapters, an alternative location might make the chapter flow smoother. This project has revealed that Section 1.1 of the occupancy chapters vary significantly, but the intent is supposed to be the same.
Chapter 3 Definitions.

**Carbon Monoxide Alarm** A single- or multiple-station carbon monoxide alarm that is responsive to sensing carbon monoxide gas and alerting occupants by a distinct and audible signal comprising of an assembly that incorporates a sensor, control components and an alarm notification appliance in a single unit operated from a power source either located in the unit or obtained at the point of installation. [720, 2009]

**Single-Station Carbon Monoxide Alarm** A device intended for the purpose of detecting carbon monoxide gas and alerting occupants by a distinct and audible signal comprising of an assembly that incorporates a sensor, control components and an alarm notification appliance in a single unit operated from a power source either located in the unit or obtained at the point of installation.

**Multiple-Station Carbon Monoxide Alarm** A carbon monoxide alarm capable of being interconnected to one or more additional carbon monoxide alarms so that the actuation of one causes the appropriate alarm signal to be annunciated in all interconnected alarms.

**Carbon Monoxide Detector** A device intended to be connected to an approved carbon monoxide detection system for the purpose of detecting carbon monoxide gas and alerting occupants by a distinct and audible signal.

**Carbon Monoxide Detection System** A system of devices that consists of a control panel and circuits arranged to monitor and annunciate the status of carbon monoxide detectors and to initiate the appropriate response to those signals.

**Combination Smoke/Carbon Monoxide Alarm** A smoke alarm that is combined with a carbon monoxide alarm; provided that, the combined device is listed by a nationally recognized testing laboratory (NRTL) to applicable American National Standards Institute (ANSI)/Underwriters Laboratories (UL) Standards for both a smoke detecting device and a carbon monoxide detecting. The combined unit shall emit an audible alarm in a manner that clearly differentiates between the two hazards.

**Combination Smoke/Carbon Monoxide Detector** A smoke detector that is combined with a carbon monoxide detector; provided that, the combined device is listed by a nationally recognized testing laboratory (NRTL) to applicable American National Standards Institute (ANSI)/Underwriters Laboratories (UL) Standards for both a smoke detecting device and a carbon monoxide detecting. The combined unit shall emit an audible alarm in a manner that clearly differentiates between the two hazards.

**Emergency Response Agency (ERA)** Organizations providing law enforcement, emergency medical, fire, rescue, communications, and related support services. [720, 2009]

**Substantiation**: The purpose for this code change is to protect people sleeping in occupancies where people sleep such as dwellings, hotels, motels, adult and child day care, apartments and dormitories from serious injury or possibly death from unintentional non-fire related carbon monoxide (CO) exposure by mandating the installation of carbon monoxide detection devices. The Centers for Disease Control and Prevention (CDC) reports that an estimated 15,000 emergency department visits and 500 unintentional deaths in the United States each year for the six year period 1999-2004. These carbon monoxide incidents were a contributing factor for 25 states enacting laws to require the installation of carbon monoxide detection devices. Of the 25 states that have adopted requirements for carbon monoxide detection, ten require the installation of carbon monoxide detectors in commercial occupancies. In the absence of a national installation standard for residential and commercial occupancies where people sleep each jurisdiction developed its own regulations with varying installation requirements.
Provide special definitions for student residence halls in Chapter 3 to accompany related proposals for a new Chapter 34 as follows:

**NEW 3.3.59A Student Residence Facility (Hall).** A building or a space in a building intended with combined living and sleeping accommodations are provided for more than 16 persons who are not members of the same family in one room, or a series of closely associated rooms, with or without independent bathroom and cooking facilities, that are managed by a private or college or university student residence facility administration.

**NEW 3.3.254B Student Room.** An accommodation within in a student residence facility that combines living, sleeping, and optional sanitary, and storage facilities within a compartment. See 3.3.59. **NEW 3.3.254C Student Suite.** An accommodation within a student residence facility that with two or more contiguous rooms comprising a compartment, with or without doors between such rooms, that provides living, sleeping, and optional sanitary, and storage facilities. See 3.3.59.

**Substantiation:** Chapters 28 and 29 of the current edition of NFPA 101 treats hotels and dormitories as identical occupancies. This is one of a series of proposals is intended to establish a platform for a national discussion on whether the life safety objectives of APPA.ORG, various state education agencies, and the NFPA could be more effectively met by de-coupling the life safety requirements of student residence halls from hotels.

This proposal is primarily intended to adjust the existing code to establish a framework for innovation in safety standards for the education facility industry. While this revision may only break apart a familiar chapter, it will highlight the specifics of dormitories on K-12, college and university campuses whose occupants are different than the occupants of hotels. Admittedly, this is a multi-code correlating undertaking that would span across several NFPA documents: 101, 5000, among them.

**NEW 3.3.254A Student Residential Facility (Hall).** A building or separate portion of a building that provides sleeping accommodations for more than 16 persons who are not members of the same family, irrespective of whether the building has other living and dining features. A Student Residence Facility is owned or leased by a college or university for the benefit of students residing in the facility, and is operated by the owner, lessee or their contractor.

**NEW 3.3.254B Student Room.** An accommodation designed for student sleeping, whether within a Student Suite or not.

**NEW 3.3.254C Student Suite.** Accommodations within a Student Residence Facility assigned to a student or group of students that includes at least one Student Room and other living space from which the assigned student or students may exclude other building residents by closing and locking a door or doors for which they all have access at all times.

**Substantiation:** Chapters 28 and 29 of the current edition of NFPA 101 treats hotels and dormitories as identical occupancies. This is one of a series of proposals is intended to establish a platform for a national discussion on whether the life safety objectives of APPA.ORG, various state education agencies, and the NFPA, could be more effectively met by de-coupling the life safety requirements of student residence halls from hotels and by establishing student residence facilities as a unique facility type.

This proposal is primarily intended to adjust the existing code to establish a framework for innovation in safety standards for the education facility industry. While this revision may only break apart a familiar chapter, it will highlight the specifics of dormitories on K-12, college and university campuses whose occupants are different than the occupants of hotels.

This is a multi-code correlating undertaking that would span across several NFPA documents: 101, 5000 among them. A coordinated series of proposals related to this proposal will be presented to several committees during the 2012 NFPA 101 and NFPA 5000 update cycle.
24.2* Means of Escape Requirements.

24.2.1 General. The provisions of Chapter 7 shall not apply to means of escape, unless specifically referenced in this chapter.

24.2.2 Number and Types of Means of Escape.

24.2.2.1 Number of Means of Escape.

24.2.2.1.1 In dwellings or dwelling units of two rooms or more, every sleeping room and every living area shall have not less than one primary means of escape and one secondary means of escape.

24.2.2.1.2 A secondary means of escape shall not be required where one of the following conditions are met:

1) The bedroom or living area has a door leading directly to the outside of the building at or to the finished ground level.

2) The dwelling unit is protected throughout by an approved automatic sprinkler system in accordance with 24.3.5.

24.2.2.2 Primary Means of Escape. The primary means of escape shall be a door, stairway, or ramp providing a means of unobstructed travel to the outside of the dwelling unit at street or the finished ground level.

24.2.2.3 Secondary Means of Escape. The secondary means of escape, other than an existing approved means of escape, shall be one of the means specified in 24.2.2.3.1 through 24.2.2.3.3.

24.2.2.3.1 It shall be a door, stairway, passage, or hall providing a way of unobstructed travel to the outside of the dwelling at street or the finished ground level that is independent of and remote from the primary means of escape.

24.2.2.3.2 It shall be a passage through an adjacent nonlockable space, independent of and remote from the primary means of escape, to any approved means of escape.

24.2.2.3.3.* It shall be an outside window or door operable from the inside without the use of tools, keys, or special effort and shall provide a clear opening of not less than 5.7 ft² (0.53 m²). The width shall be not less than 20 in. (510 mm), and the height shall be not less than 24 in. (610 mm). The bottom of the opening shall be not more than 44 in. (1120 mm) above the floor. Such means of escape shall be acceptable where one of the following criteria is met:

1) The window shall be within 20 ft (6100 mm) of the finished ground level.

2) The window shall be directly accessible to fire department rescue apparatus, as approved by the authority having jurisdiction.

3) The window or door shall open onto an exterior balcony.

4) Windows having a sill height below the adjacent finished ground level shall be provided with a window well meeting the following criteria:

(a) The window well shall have horizontal dimensions that allow the window to be fully opened.

(b) The window well shall have an accessible net clear opening of not less than 9 ft² (0.82 m²) with a length and width of not less than 36 in. (915 mm).

(c) A window well with a vertical depth of more than 44 in. (1120 mm) shall be equipped with an approved permanently affixed ladder or with steps meeting the following criteria:

i. The ladder or steps shall not encroach more than 6 in. (150 mm) into the required dimensions of the window well.

ii. The ladder or steps shall not be obstructed by the window.

24.2.2.3.4 Bulkheads complying with 24.2.7

24.2.2.3.4* Ladders or steps that comply with the requirements of 24.2.2.3.3(4)(c) shall be exempt from the requirements of 7.2.2.

24.2.2.4 Two Primary Means of Escape. In buildings, other than existing buildings and other than those protected throughout by an approved, supervised automatic sprinkler system in accordance with 24.3.5, every story more than 2000 ft² (185 m²) in area within the dwelling unit shall be provided with two primary means of escape remotely located from each other.

24.2.3 Arrangement of Means of Escape. Any required path on travel in a means of escape from any room to the outside shall not pass through another room or apartment not under the immediate control of the occupant of the first room or through a bathroom or other space subject to locking.

24.2.7 Bulkheads.

24.2.7.1 Bulkhead Enclosures. Where provided, bulkhead enclosures shall provide direct access to the basement from the exterior.

24.2.7.2 Bulkhead Enclosure Stairways. Stairways serving bulkhead enclosures that are not part of the required
primary means of escape, and that provide access from the outside finished ground level to the basement, shall be exempt from the provisions of 24.2.5.1 when the maximum height from the basement finished floor level to the finished ground level adjacent to the stairway does not exceed 8 ft (2440 mm), and the finished ground level opening to the stairway is covered by a bulkhead enclosure with hinged doors or other approved means.

Substantiation: Some authorities having jurisdiction have questioned the use of bulkhead enclosures for means of escape due to their location within Chapter 24.

When the bulkhead provisions were added starting with the 2003 Edition of the code, there was a comment to reject the proposal to add it and the committee responded “...Such stairs may be used as a secondary means of escape, and should be compared to other secondary means of escape components, such as windows.” So the committee clearly intended to allow bulkhead enclosures to serve as means of escape, however the location within the chapter does not make that clear. This proposal adds bulkheads to the list of a secondary escape components. If windows and window wells are acceptable, bulkhead enclosure stairs certainly should be acceptable.

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Submitter: Ignatius Kapalczynski, CT Office of State Fire Marshal
Recommendation: New text to read as follows:
Carbon monoxide detectors shall be provided, installed, and maintained in accordance with 9.6.x.

Substantiation: Addresses a method to provide early warning to occupants of the presence of harmful amounts of products of incomplete combustion (carbon monoxide).

This is not original material; its reference/source is as follows:
Recommendation: Chapter 24 One- and Two Family Dwellings.

Add new text as follows:

24.3.5 Carbon Monoxide Alarms and Carbon Monoxide Detection Systems.

24.3.5.1 General. Carbon monoxide alarms, carbon monoxide detectors, combination smoke/carbon monoxide alarms or combination smoke/carbon monoxide detectors shall be provided in accordance with 24.3.5.2.

24.3.5.2 In new construction within which fuel burning appliances exist or which have attached garages, listed carbon monoxide alarms, carbon monoxide detectors, combination smoke/carbon monoxide alarms or combination smoke/carbon monoxide detectors shall be installed in accordance with Section 9.8 in the following locations:

1) Outside each separate dwelling unit sleeping area in the immediate vicinity of the bedrooms
2) On every level of a dwelling unit, including basements

24.3.5.3 Notification.

24.3.5.3.1 Dwelling units specifically required and equipped to accommodate hearing-impaired individuals shall be provided with a visible notification appliance in accordance with Section 9.8.4.

Substantiation: The purpose for this code change is to protect people sleeping in occupancies where people sleep such as dwellings, hotels, motels, adult and child day care, apartments and dormitories from serious injury or possibly death from unintentional non-fire related carbon monoxide (CO) exposure by mandating the installation of carbon monoxide detection devices. The Centers for Disease Control and Prevention (CDC) reports that an estimated 15,000 emergency department visits and 500 unintentional deaths in the United States each year for the six year period 1999-2004. These carbon monoxide incidents were a contributing factor for 25 states enacting laws to require the installation of carbon monoxide detection devices. Of the 25 states that have adopted requirements for carbon monoxide detection, ten require the installation of carbon monoxide detectors in commercial occupancies. In the absence of a national installation standard for residential and commercial occupancies where people sleep each jurisdiction developed its own regulations with varying installation requirements.
All new one-and two-family dwellings in new subdivisions of 5 or more homes where none of the following options are available for a water source for fire protection shall be protected throughout by an approved automatic sprinkler system in accordance with 24.3.5.2:

1. Hydrant(s) off of the town water supply where there is at least one hydrant within 1,000 feet of every home within the subdivision.
2. Hydrant(s) off of a fire pond where there is at least one hydrant within 1,000 feet of every home within the subdivision.
   (a) The fire pond must have at least 120,000 gallons of water available under a maximum projected thickness of ice.
   (b) The fire pond and hydrant(s) must be maintained at owner’s expense.
   (c) The town will be free of any liability regarding the fire pond.
3. Hydrant(s) off of a cistern where there is at least one hydrant within 1,000 feet of every home within the subdivision.
   (a) The cistern and hydrant(s) must be maintained at owner’s expense.
   (b) The cistern must be protected from freezing and maintain a volume of at least 30,000 gallons of water.
   (c) The town will be free of any liability regarding the cistern.

Automatic sprinklers are recognized as an excellent addition to homes to enhance life safety and property protection. Automatic sprinklers can be part of a comprehensive package of fire protection and can assist in the overall master planning of a community. Where all of the buildings within an area are sprinklered, including the single-family dwellings, the response times and personnel of local fire departments can be established at different levels than if the buildings were not sprinklered, saving considerable amounts of tax dollars. When whole developments are sprinklered, water mains, hydrant spacing, road widths, and building density can be altered to help alleviate the economic impact of the sprinklers. Other typical “trade-offs” often include longer dead-end roads, turn-around options, and fire-rated reductions for separation walls.

The “5 or more homes” cut-off is used, since this typically fits municipal definitions of “major subdivisions” as opposed to “minor subdivisions”, which ironically can be just 1 home in some cases. The 1,000 hydrant spacing is comfortable for most small to medium-sized fire departments. The minimum of “30,000 gallons” for cisterns comes from an insurance standard.

Problem:
The majority of deaths in structure fires are in the home. Fire sprinkler systems installed in homes would significantly reduce the number of home fire fatalities. This number has not significantly been reduced since affordable smoke alarm technology was available.

Home fire sprinkler system installation mandates, (whether from local ordinances, NFPA 101 2006 and 2009 editions, or from building codes such as the 2009 IRC), have met strong resistance most commonly resulting in rejection in spite of mass educational and promotional programs. This problem is the norm.

Substantiation: At the request of NFPA, we did a study of how homes got fire sprinkler systems in Maine. The study is attached along with the summary report.

In order to knock down the dam of resistance to fire sprinkler systems in homes there must be:
1. a requirement that is perceived as reasonable
2. choices on how to meet the requirement
3. trade-offs for both economic savings and increased design options.

The proposal submitted requires a source of water for fire protection for new major subdivisions.

This is accepted by everyone as a reasonable requirement.

The proposal submitted offers choices on how to meet the requirement.

People appreciate the guidelines for acceptable options.

The annex for the proposal submitted encourages trade offs when the fire sprinkler system option is used.

If this proposal is put into the next edition of NFPA 101, then it would be greeted with widespread acceptance. In reality we would immediately see hundreds of thousands of new homes with fire sprinkler systems. This is a critical step in the move toward fire sprinkler systems in all new homes. It would give the fire sprinkler industry time to gear-up to meet the demand. It would be a most effective way to educate the public and promote home fire sprinkler systems. This increased demand would also provide incentive for developing technology to make home fire sprinkler systems more affordable. In Maine we would see a ten-fold increase in the number of fire sprinkler systems in homes.
Maine Towns with Home Fire Sprinkler Requirements

The towns listed below have at least 1 permit for an NFPA 13D system from our records. The permit might include more than 1 dwelling unit, or be a Small Residential Board & Care, or be a Rooming & Lodging facility.

The number to the left of the town name is the number of NFPA 13D permits on record issued by our office.

(8) Acton- 207-636-3839 x 410 Ken Paul, CEO
207-636-3230 Harold Smith, Fire Chief

In the town ordinance for new subdivisions, fire department approval must be granted and the fire chief has been very convincing and tries to work with builders for subdivision layout concessions. About a dozen new subdivisions have been approved in the last few years, and ALL with fire sprinkler systems. This is without a fire sprinkler ordinance.

(0) Alfred- 207-324-5872 x 206 “Red” Chalmers, CEO
207-324-8969 David Lord, Fire Chief

Presently there are no homes with fire sprinklers, but one new subdivision has been approved with fire sprinklers. The fire chief requests fire sprinklers for all new subdivisions, and he has gotten the planning board to be in agreement. This is without a fire sprinkler ordinance.

(8) Augusta-207-626-2368 Richard Dolby, Gary Fuller, George Soucy, CEO
207-626- 2421 Roger Audette, Fire Chief

Elderly homes and group homes received coverage as required by NFPA 101, 2006 edition. There is no mechanism is place to provide fire sprinkler protection to new homes.
(20) Bath-207-443-8334 J. Scott Davis, CEO
    207-443-5034 Stephen Hinds, Fire Chief

    Any new buildings including homes outside of the hydrant district must have sprinklers. Also existing homes outside of the hydrant district with significant renovation require fire sprinkler systems. This is all by town ordinance.

(1) Biddeford- 207-284-9236 Robbie Fecteau, CEO
    207-284-6632 Robert Fournier, Fire Chief

    No mechanism in place, but waiting for the 2009 IRC to be adopted. The 1 NFPA 13D is a small residential board & care required by NFPA 101.

(1) Cape Elizabeth- 207-799-1619 Bruce Smith, CEO
    207-767-7417 Peter Gleason, Fire Chief

    The Planning Board has a requirement for a new subdivision that is remote from town hydrants to have fire sprinklers. There is no fire sprinkler system ordinance.

(12) Carrabassett Valley-207-235-2646 William Gilmore, CEO
    207-237-3200 Courtney Knapp, Fire Chief

    One subdivision that didn’t have town water was required by the planning board to have fire sprinkler systems. The developer agreed to do it. There is also difficulty for fire department access due to the large snow banks. There will be 28 more homes built in that subdivision. Another subdivision with 22 lots will have the same arrangement. There is no ordinance to require fire sprinkler systems in homes but it is the most economical option for places with no town water. This is a ski resort town with mountains.

(11) Casco-207-627-4515 Elwin Thorpe, CEO
    207-627-4044 John Small, Fire Chief

    Chief Small reported fire sprinkler systems in Champ Sunshine, Casco Inn Nursing Home and Country Village Nursing home. There is no ordinance for fire sprinkler systems; however, he is pushing for one.

(1) Coburn Gore

(16) Cumberland-207-829-2206 William Longley,
    207-829-5421 Daniel Small, Fire Chief

    There has been a fire sprinkler ordinance in effect for commercial buildings over 4,000 square feet Daniel Small was uncertain of the requirements for residential buildings. He estimates 15 commercial buildings have sprinklers and 40 to 50 residential buildings have sprinklers.
All subdivisions that do not have a public water source must have fire sprinklers or fire tanks. Falmouth is trying to make fire sprinklers mandatory in all new construction.

Freeport does not have an ordinance requiring fire sprinkler systems for new residential construction. New subdivisions however are encouraged to have fire sprinklers but the planning board will accept a fire pond or another alternative. If a commercial building is over 5,000 square feet they are required to have fire sprinklers. The town is not currently working on implementing such an ordinance. There are approximately 20 residential buildings and a few commercial buildings with fire sprinkler systems.

No fire sprinkler ordinance, however they are working on it. For residential units with three or more apartments a fire cistern or fire pond is mandatory. There is one 4 unit apartment building that has sprinklers and there are no sprinklers in any commercial buildings.

They have several hundred commercial and residential buildings with sprinklers. This town does have an ordinance. New subdivisions are required to have an alternate source of water when no public water is available.

No fire sprinkler ordinance, however they are working on it. New subdivisions are required to have an alternate source of water when no public water is available. Rick Plummer was unsure of the number of commercial buildings that had sprinkler systems and did not know the number, if any, of homes with sprinklers.

Hallowell has what Todd Shea describes as an inadequate ordinance with regard to fire sprinklers. They have a few dozen commercial buildings that have sprinkler systems and there is no requirement for residential buildings. A new subdivision is not required to have a cistern or fire pond in the event town water is not available.
(1) Kennebunkport-207-967-4243 Brian Shaw, CEO
207-967-2114 Paul Moshimer, Fire Chief

No fire sprinkler ordinance, however, would like to have one. It is not something they are currently working on. New subdivisions are required to have an alternate source of water when no public water is available. Paul Moshimer was unsure of the numbers of residential and commercial buildings with fire sprinklers.

(19) Lebanon-207-608-6862 Brian Rainaud, CEO 7-11 a.m.
207-457-3922 Blaine “Skip” Wood, Fire Chief

There is no town fire sprinkler ordinance. New subdivisions are encouraged to install fire sprinkler systems or required to have a fire pond. They have 30 or so residential homes and one commercial building with fire sprinkler systems. In 2007 the town tried to implement a fire sprinkler ordinance, however, it was “shot down”. There continues to be interest to make this a requirement.

(1) Lovell-207-925-6272-Ronald McAllister, CEO
207-925-3051 Mark Seaward Moulton, Fire Chief

There is no town fire sprinkler ordinance. Chief Seaward advocates for the town to adopt a fire sprinkler ordinance. New subdivisions are not required to have an alternate source of water for fire suppression. The only fire sprinkler system Chief Seaward knows of is in Pleasant Point Resort.

(3) Lyman-207-499-7562 Jim Gardiner, CEO
? Rodney Carpenter

There is no fire sprinkler ordinance and the town is not currently working on one. There are very few commercial buildings that have sprinklers and Jim Gardiner was not aware of any residential homes with sprinklers.

(1) Minot-207-946-7700 Kenneth Pratt, CEO
207-784-0577 Stephen French, Fire Chief

No fire sprinkler ordinance in place. Per Ken Pratt there is some interest in Livermore Falls having an ordinance, which could influence Minot. In order for someone to obtain a permit for a new subdivision they would have to show a source of water.

(1) Mount Desert-207-276-5731 Kimberly Keene, CEO
207-276-5111 Mike Bender, Fire Chief

Mt. Desert Island does not have an ordinance for fire sprinklers. A new subdivision is not required to have fire sprinklers, however, is required to have a fire pond, cistern or dry hydrant. Fire Chief Mike Bender would like to have an ordinance in place in the near future. There are approximately 15 commercial buildings and 10-15 residential buildings with fire sprinklers.
Naples does not have an ordinance for fire sprinklers and it is not something they are considering. When a permit for a subdivision is submitted sprinklers are encouraged and they currently have one subdivision that has been approved and will be sprinkled. The planning board makes the determination if an alternate means of fire suppression will be accepted. Dry hydrants and fire ponds have been acceptable means in the past. A fire sprinkler system is currently being added to the plans for renovation to the town Grange building.

Fire pond or cistern for subdivisions. No sprinkler option. Next year or so Gary will have the town officials revisit the ordinance to include sprinklers as an option. Option 1. 120,000 gallon fire pond regardless of # of homes. 2. Cisterns: Four homes or less 15,000 gallon, 5 to 21 homes 30,000 gallon cistern. Money held in escrow for 18 months to make sure fire pond or cistern works.

Newry is working on a new ordinance that would include fire sprinkler systems. The last eight subdivisions in this town have agreed to sprinkle. David believes the planning board would accept a cistern or fire pond as an alternate means. There are currently two commercial buildings and six residential buildings with fire sprinkler systems.

No local ordinance for fire sprinkler systems, however, would like one. Any new subdivision is requested to be sprinkled or have a dry hydrant or fire pond. There are approximately 12 commercial buildings and six residential buildings that are sprinkled.

Closed/no answer
(9) Old Orchard Beach-207-934-5714 Mike Nugent, CEO
       207-934-4911 John Glass, Fire Chief

       OOB has a fire suppression ordinance that says any three story or greater building must be sprinkled unless it will only be occupied by the owner (not rented). A new subdivision would be required to extend hydrants and any remote area (there are few) would have to show an alternate source such as a fire pond or cistern. Mike Nugent could not estimate the number of commercial and one and two family homes that are sprinkled, however, indicated there are many especially along the waterfront.

(1) Oquossoc-SEE RANGELEY

(2) Parsonfield-207-625-4558 David Bower, CEO
       207-625-8016 Kenneth Burbank, Fire Chief

       Parsonfield does not have a local fire sprinkler ordinance. Chief Ken Burbank would like to see one; however it is not currently in the works. Any new housing development would be asked to install sprinklers or install fire ponds or cisterns as an alternative. He could not estimate the number of commercial and residential buildings that are sprinkled.

(4) Portland-207-874-8715 Tom Markley, CEO
       207-874-8401 Frederick LaMontagne Jr., Fire Chief

       Fire sprinkler installations have been predominantly voluntary.

(1) Pownal-207-688-4810 Craig Vosmus, CEO
       207-688-2211 Howard “Scott” Pollock, Fire Chief

       Pownal does not have a town ordinance for fire sprinklers. There is only one building in Pownal that has sprinklers and that is the town office. If a new subdivision is proposed the developer would have to have the plan approved by the Fire Chief and it is unclear if a fire pond would be required. There is no town water.

(0) Randolph-207-582-5808 Robert St. Pierre, CEO
       207-582-3536 Ronald Cunningham, Fire Chief

       There is no enforceable sprinkler ordinance (apparently the one they had is unenforceable). The town hopes to have the problem with the ordinance resolved soon. Robert St. Pierre has no knowledge of any sprinkled one or two family dwellings or commercial buildings. He suspects the elementary school may be sprinkled.
(2) Rangeley-207-864-3326 Robert Griscom, CEO
   207-864-3800 Rudolph Davis, Fire Chief

   According to Robert Griscom there is no ordinance in place for fire sprinkler systems and there is no ordinance in the works. This is something he would like to see the town have. There are approximately 20 commercial buildings and several residential buildings that are sprinkled. The home fire sprinkler systems were voluntary.

(13) Raymond-207-655-3066 John Cooper, CEO
     207-655-4502 Denis Morse, Fire Chief

   Raymond does not currently have any ordinance and Jack Cooper was unsure if it is something that is in the works. He could not estimate the number of commercial or residential buildings in his town that are sprinkled. Any new subdivision is required to have the buildings sprinkled.

(4) Saco-207-284-6983 Richard Lambert, CEO
     207-282-3244 Alden Murphy, Fire Chief

   Residential fire sprinkler systems are encouraged by the town of Saco. New subdivisions are not required to sprinkle new homes, however must have an adequate water source. If a commercial building exceeds three stories, 40’ in height 2,000 cubic feet in volume or exceeds 5 units it must be sprinkled.

(40) Sanford-207-324-9145 Peter Cutrer, CEO
     207-324-9161 Raymond Parent, Fire Chief

   New subdivisions by ordinance require water supply for fire-fighting, and accept the options of a fire pond or cistern, maintained at owner’s expense, or sprinklers. Fire sprinklers are encouraged and due to maintenance costs of alternatives, the sprinkler option is the one almost always used. Peter Cutrer is helping the town of Hiram to write a similar ordinance. There is no fire sprinkler system ordinance.

(4) Scarborough-207-730-4051 Carroll Shepard, CEO
     207-730-4059 David Gryskwicz, CEO
     207-883-4542 Captain David Jackson
     207-730-4202 B. Michael Thurlow, Fire Chief

   Sprinkler ordinance requires sprinklers for 3 or more units or uses, and for horizontal or vertical businesses with 7,500 or 100,000 square feet. Firewalls not recognized for exceptions.

(1) Searsmont-207-342-5411 E. Frank Therio, CEO
     207-342-5707 James Ames, Fire Chief

   They do not have a local ordinance for fire sprinkler systems. A new subdivision would be encouraged to sprinkle or be required to have a fire pond. There are 24 or so commercial buildings and no known residential buildings that are sprinkled.
(1) Sebago-207-787-2457 James Smith, CEO
   207-787-4515 Kenneth Littlefield, Fire Chief

(2) Shapleigh-207-636-2842 Steven McDonough, CEO
   207-324-2211 Anthony Wolfinger, Duane Romero, Fire Chief

   There is no ordinance in place; however, fire sprinkler systems are required in new subdivisions. It is possible that the planning board would accept another source (cistern or fire pond) as an alternative. There is one commercial building that is sprinkled and a dozen residential buildings. They issue approximately 34 permits per year.

(1) Solon-207-474-8865 Kenneth Hogate, CEO
   207-643-2526 Ronald Brown, Fire Chief

   No current fire sprinkler ordinance in place and they are not presently working on one. All new subdivisions are required to have either a fire pond or cistern. There are two or three commercial buildings with fire sprinkler systems and no known residential buildings with fire sprinkler systems.

(1) South Berwick-207-384-3300 Joseph Roussel, CEO
   207-384-2731 George Gorman, Fire Chief

   South Berwick had an ordinance that provided for sprinklers in all residential homes; however the provision was removed approximately four years ago due to pressure from developers. New subdivisions are not required to have fire sprinkler systems installed. The town currently has fire sprinkler systems in eight homes with approximately five commercial buildings having the same. New commercial buildings are required to have sprinklers.

(3) Springvale-See SANFORD, (Springvale is a small town adjacent to Sanford)

(1) Standish-207-642-4571 Daniel Hill, CEO
   207-642-5448 Martin Jordan, Fire Chief

   No current fire sprinkler ordinance in place and they are not presently working on one. Any new subdivision is required to have a fire pond if a hydrant is not available. The number of commercial and residential buildings with fire sprinklers is unknown.

(1) Stoneham-207-928-2155 Derek DeSanctis, CEO
   207-928-3222 Albert Fox, Fire Chief

(1) Sweden-207-925-1311 Eric Gulbrandsen, CEO
   207-647-2856 Charles Wayne Miller, Fire Chief

   No current fire sprinkler ordinance in place. They have an approved subdivision that has fire sprinklers and another subdivision that was approved with cisterns. Eric is aware of one residence that has fire sprinklers and there were no permitted commercial buildings with fire sprinklers.
(49) Topsham-207-725-5821 Tod Rosenberg, CEO
    207-725-7581 Kenneth Brillant, Fire Chief

    No current fire sprinkler ordinance in place. Todd Rosenberg is hoping an ordinance is in the future for Topsham. New subdivisions, depending on the location, are required to extend hydrants or have another means of fire suppression. There are very few residential buildings that are sprinkled apart from Highland Greens subdivision.

(1) Upton-207-392-4681 John Percival, CEO
    Fire Chief?

(1) Vassalboro-207-872-2826 Paul Mitnik, CEO
    207-872-2826 Eric Rowe, Fire Chief

(24) Wells-207-646-5187 Jodine Adams, CEO
    207-646-7912 Daniel More, Fire Chief

    There is no local ordinance and they are not pushing for one. New developments are encouraged to sprinkle their homes or must have a fire pond. There are 30 commercial buildings and 12 residential buildings that are sprinkled.

(5) West Bath-207-443-4342 Ellis Reed, CEO
    207-443-1500 Michael Demers, Fire Chief

(1) Windham-207-892-1901 Tom Lister, Roger Timmons, Renee Carter, CEO
    207-892-1911 Charles Hammond, Fire Chief

    There is no local ordinance nor do they intend to propose one. Subdivisions are encouraged to sprinkle and are not required to have a fire pond or cistern. 20% of the commercial buildings and less than 1% of the residential buildings in Windham are sprinkled.

(6) Yarmouth-207-846-2401 William Longley, CEO
    207-846-2410 Byron “Pat” Fairbanks, Fire Chief

    Bill Longley indicated they have a local fire sprinkler ordinance for new construction. He could not estimate the number of buildings in Yarmouth that are sprinkled.
Tim Decoteau said that they use the 2003 editions of ICC, and NFPA 101.
Maine Towns with Home Fire Sprinkler Requirements Summary Report

Our database of fire sprinkler system permit submittals has about 9,000 job records, going back to 1990. We generated a report from this database for all permits issued for NFPA 13D fire sprinkler systems, then made an alphabetical list of towns with those systems. We added the phone contact for the fire department and for code enforcement for each of those towns. Then we called each of those towns to inquire as to what procedures they had in place to get fire sprinkler systems in homes. What we did not record is hours of conversation in the field and on phones and at group gatherings and at town meetings with town officials.

It took 6 months to complete this process, with the major obstacle being able to make contact with municipalities with limited hours of availability and then to the right part-time, municipal employees.

The summary report indicated that very little existed in the line of adopted codes or ordinances that required fire sprinkler system in homes. Most of the homes with fire sprinkler systems were new homes in new subdivisions without town water. The most effective way to get homes sprinklered in Maine appears to be when:

1. There is a requirement for water for fire fighting
2. Options are given for this water supply
3. Options include: proximity of hydrants
   or fire ponds, (with maintenance by owners)
   or cisterns, (with maintenance by owners)
   or fire sprinkler systems, (this is always the economical choice)
4. Construction concessions are given for fire sprinkler systems both to the developer, (longer dead-end roads, smaller turn-arounds, lighter cluster housing, etc.) and to the owner, (one way out of bedrooms, fire-wall reduction requirement, increased design options, etc.)
5. The focus was on new subdivisions rather than individual homes.

Home fire sprinkler system mandates have been for the most part strongly resisted and unsuccessful. Education and cooperation to meet requirements that are perceived as reasonable prove to be very successful. Key elements that must be addressed are 1. finances, 2. choices, 3. something-for-everybody. With this approach new homes get fire sprinkler systems in Maine.

Eric J Ellis,
Fire Protection Engineer
Insert a new section 26.3.5 "Carbon Monoxide Alarms and Carbon Monoxide Detection Systems," and renumber the current 26.3.5 accordingly.

Add new text as follows:

26.3.5 Carbon Monoxide Alarms and Carbon Monoxide Detection Systems.

26.3.5.1 General. Carbon monoxide alarms, carbon monoxide detectors, combination smoke/carbon monoxide alarms or combination smoke/carbon monoxide detectors shall be provided in accordance with 26.3.5.2 and 26.3.5.3.

26.3.5.2 In new construction within which fuel burning appliances exist or which have attached garages, listed, multiple-station carbon monoxide alarms or listed carbon monoxide detectors shall be installed in accordance with Section 9.8 in the following locations:

1) Outside each separate dwelling unit sleeping area in the immediate vicinity of the bedrooms
2) On every level of a dwelling unit, including basements and in every HVAC zone of the building
3) On the ceiling or wall of the same room as permanently installed fuel burning appliances in accordance with manufacturers published instructions

26.3.5.3 Notification.

26.3.5.3.1 Dwelling units specifically required and equipped to accommodate hearing-impaired individuals shall be provided with a visible notification appliance in accordance with Section 9.8.4.

26.3.5.3.2 Visible notification appliances for the hearing impaired shall not be required where the proprietor resides in the building and there are five or fewer rooms for rent.

Substantiation: The purpose for this code change is to protect people sleeping in occupancies where people sleep such as dwellings, hotels, motels, adult and child day care, apartments and dormitories from serious injury or possibly death from unintentional non-fire related carbon monoxide (CO) exposure by mandating the installation of carbon monoxide detection devices. The Centers for Disease Control and Prevention (CDC) reports that an estimated 15,000 emergency department visits and 500 unintentional deaths in the United States each year for the six year period 1999-2004. These carbon monoxide incidents were a contributing factor for 25 states enacting laws to require the installation of carbon monoxide detection devices. Of the 25 states that have adopted requirements for carbon monoxide detection, ten require the installation of carbon monoxide detectors in commercial occupancies. In the absence of a national installation standard for residential and commercial occupancies where people sleep each jurisdiction developed its own regulations with varying installation requirements.
28.2.2.4 Horizontal Sliding doors, as permitted by 7.2.1.14 shall not be used across corridors.

Substantiation: The '86 edition of NFPA 101 Horizontal Accordion-type Fire Doors were accepted without occupant load restriction by the Means of Egress Committee. When the issue was discussed in the Hotels and Dormitory, Existing Hotels and Dormitory and the New Apartment Building Committees' they imposed the restriction in cross corridors without consulting the other committees' including the Means of Egress group which had no problem with the usage in cross corridor applications. In other words, the base document with regard to Means of Egress allowed it, but the subcommittees' raised their own concern justifying it with the explanation as stated above. It is important to note when discussing NFPA Section 7.2.1.14 Horizontal Sliding Doors, it states: “Horizontal-sliding doors shall be permitted in a means of egress, provided that the following criteria are met...”. It is only Sections’ 28, 29 and 30 that take exception to this. A companion change has been submitted for sections 29, and 30.

The total acceptance of this technology, as allowed in all other occupancies, with the exception of Hazardous facilities without occupant load restriction as well as a tremendous track record of this product, stands as solid justification for acceptance in NFPA 101 Life Safety Code jurisdictions.
Vince Baclawski, National Electrical Manufacturers Association (NEMA)

Recommendation: Chapter 28 New Hotels and Dormitories.

Insert a new Section 28.3.5 "Carbon Monoxide Alarms and Carbon Monoxide Detection Systems," and renumber the current 28.3.5 accordingly.

Add new text as follows:

**28.3.5 Carbon Monoxide Alarms and Carbon Monoxide Detection Systems.**

28.3.5.1 **General.** Carbon monoxide alarms, carbon monoxide detectors, combination smoke/carbon monoxide alarms or combination smoke/carbon monoxide detectors shall be provided in accordance with 28.3.5.2 and 28.3.5.3.

28.3.5.2 In new construction within which fuel burning appliances exist or which have attached garages, listed Carbon monoxide alarms, carbon monoxide detectors, combination smoke/carbon monoxide alarms or combination smoke/carbon monoxide detectors shall be installed in accordance with Section 9.8 in the following locations:

1) On the ceiling or wall of the same room as permanently installed fuel burning appliances in accordance with manufacturers published instructions

2) Centrally located on every habitable level, in every HVAC zone of the building

3) The required carbon monoxide alarms or carbon monoxide detectors shall be annunciated at a constantly attended location

28.3.5.2.1 Carbon monoxide alarms, carbon monoxide detectors, combination smoke/carbon monoxide alarms or combination smoke/carbon monoxide detectors shall not be required in sleeping units unless the sleeping unit contains a fuel-burning appliance.

28.3.5.3 **Notification.**

28.3.5.3.1 The public mode occupant notification shall be limited to the carbon monoxide alarm, carbon monoxide detector, combination smoke/carbon monoxide alarm or combination smoke/carbon monoxide detector that originated the carbon monoxide alarm signal.

28.3.5.3.2 Guest rooms and guest suites specifically required and equipped to accommodate hearing-impaired individuals shall be provided with a visible notification appliance in accordance with Section 9.8.4.

28.3.5.4 **Emergency response agency notification shall be provided in accordance with Section 9.8.5.**

**Substantiation:** The purpose for this code change is to protect people sleeping in occupancies where people sleep such as dwellings, hotels, motels, adult and child day care, apartments and dormitories from serious injury or possibly death from unintentional non-fire related carbon monoxide (CO) exposure by mandating the installation of carbon monoxide detection devices. The Centers for Disease Control and Prevention (CDC) reports that an estimated 15,000 emergency department visits and 500 unintentional deaths in the United States each year for the six year period 1999-2004. These carbon monoxide incidents were a contributing factor for 25 states enacting laws to require the installation of carbon monoxide detection devices. Of the 25 states that have adopted requirements for carbon monoxide detection, ten require the installation of carbon monoxide detectors in commercial occupancies. In the absence of a national installation standard for residential and commercial occupancies where people sleep each jurisdiction developed its own regulations with varying installation requirements.
29.2.2.2.4 Horizontal Sliding doors, as permitted by 7.2.1.14 shall not be used across corridors.

Substantiation: The '86 edition of NFPA 101 Horizontal Accordion-type Fire Doors were accepted without occupant load restriction by the Means of Egress Committee. When the issue was discussed in the Hotels and Dormitory, Existing Hotels and Dormitory and the New Apartment Building Committees' they imposed the restriction in cross corridors without consulting the other committees’ including the Means of Egress group which had no problem with the usage in cross corridor applications. In other words, the base document with regard to Means of Egress allowed it, but the subcommittees’ raised their own concern justifying it with the explanation as stated above. It is important to note when discussing NFPA Section 7.2.1.14 Horizontal Sliding Doors, it states: “Horizontal-sliding doors shall be permitted in a means of egress, provided that the following criteria are met: . . .”. It is only Sections’ 28, 29 and 30 that take exception to this. A companion change has been submitted for sections 28 and 30.

The total acceptance of this technology, as allowed in all other occupancies, with the exception of Hazardous facilities without occupant load restriction as well as a tremendous track record of this product, stands as solid justification for acceptance in NFPA 101 Life Safety Code jurisdictions.

29.3.4.3.6 Emergency Forces Notification. Fire department notification shall be accomplished in accordance with 9.6.4, when the existing fire alarm system is updated or replaced.

Substantiation: Require emergency forces notification in existing occupancy just as in new occupancies. The basis for necessity is the same, however time for implementation is extended until the fire alarm system is upgraded or replaced.

This is not original material; its reference/source is as follows:

101 - 28.3.4.3.6

30.2.2.2.4 Horizontal Sliding doors, as permitted by 7.2.1.14 shall not be used across corridors.

Substantiation: The ’86 edition of NFPA 101 Horizontal Accordion-type Fire Doors were accepted without occupant load restriction by the Means of Egress Committee. When the issue was discussed in the Hotels and Dormitory, Existing Hotels and Dormitory and the New Apartment Building Committees’ they imposed the restriction in cross corridors without consulting the other committees’ including the Means of Egress group which had no problem with the usage in cross corridor applications. In other words, the base document with regard to Means of Egress allowed it, but the subcommittees’ raised their own concern justifying it with the explanation as stated above. It is important to note when discussing NFPA Section 7.2.1.14 Horizontal Sliding Doors, it states: “Horizontal-sliding doors shall be permitted in a means of egress, provided that the following criteria are met: . . .”. It is only Sections’ 28, 29 and 30 that take exception to this.

The total acceptance of this technology, as allowed in all other occupancies, with the exception of Hazardous facilities without occupant load restriction as well as a tremendous track record of this product, stands as solid justification for acceptance in NFPA 101 Life Safety Code jurisdictions.
Insert a new Section 30.3.5 "Carbon Monoxide Alarms and Carbon Monoxide Detection Systems," and renumber the current 30.3.5 accordingly.

Add new text as follows:

**30.3.5 Carbon Monoxide Alarms and Carbon Monoxide Detection Systems.**

30.3.5.1 General. Carbon monoxide alarms, carbon monoxide detectors, combination smoke/carbon monoxide alarms or combination smoke/carbon monoxide detectors shall be provided in accordance with 30.3.5.2 and 30.3.5.3.

30.3.5.2 In new construction within which fuel burning appliances exist or which have attached garages, listed Carbon monoxide alarms, carbon monoxide detectors, combination smoke/carbon monoxide alarms or combination smoke/carbon monoxide detectors shall be installed in accordance with Section 9.8 in the following locations:

1) Outside each separate dwelling unit sleeping area in the immediate vicinity of the bedrooms
2) On the ceiling or wall of the same room as permanently installed fuel burning appliances in accordance with manufacturers published instructions
3) Centrally located on every habitable level, in every HVAC zone of the building
4) The required carbon monoxide alarms or carbon monoxide detectors shall be annunciated at a constantly attended location

30.3.5.3 Notification.

30.3.5.3.1 The public mode occupant notification shall be limited to the carbon monoxide alarm, carbon monoxide detector, combination smoke/carbon monoxide alarm or combination smoke/carbon monoxide detector that originated the carbon monoxide alarm signal.

30.3.5.3.2 Dwelling units specifically required and equipped to accommodate hearing-impaired individuals shall be provided with a visible notification appliance in accordance with Section 9.8.4.

30.3.5.4 Emergency response agency notification shall be provided in accordance with Section 9.8.5.

Substantiation: The purpose for this code change is to protect people sleeping in occupancies where people sleep such as dwellings, hotels, motels, adult and child day care, apartments and dormitories from serious injury or possibly death from unintentional non-fire related carbon monoxide (CO) exposure by mandating the installation of carbon monoxide detection devices. The Centers for Disease Control and Prevention (CDC) reports that an estimated 15,000 emergency department visits and 500 unintentional deaths in the United States each year for the six year period 1999-2004. These carbon monoxide incidents were a contributing factor for 25 states enacting laws to require the installation of carbon monoxide detection devices. Of the 25 states that have adopted requirements for carbon monoxide detection, ten require the installation of carbon monoxide detectors in commercial occupancies. In the absence of a national installation standard for residential and commercial occupancies where people sleep each jurisdiction developed its own regulations with varying installation requirements.
Submitter: Ronald G. Nickson, National Multi Housing Council  
Recommendation: Revise text to read as follows:  
30.3.5.3 In buildings sprinklered in accordance with NFPA 13, Standard for the Installation of Sprinkler Systems, closets less than 12 ft² (1.1 m²), and bathrooms that do not exceed 55 ft², in area in individual dwelling units shall not be required to be sprinklered. Closets that contain equipment such as washers, dryers, furnaces, or water heaters shall be sprinklered, regardless of size.

Substantiation: In the 1976 edition of the Lief Safety Code, to encourage sprinklers in apartment buildings, NFPA 101 Section 11-3.8.3.4.1 Exception permitted bathrooms that did not exceed 55 sq/ ft within individual dwelling units to omit sprinklers when the apartment building was sprinklered in accordance with NFPA 13. In the 1991 edition of NFPA 13, this exception was added to that Code (Section 4-4.1.7.7.1) with the understanding that the next edition of NFPA 101 (1994) could then delete the exception since it was placed in the sprinkler code. In the 1994 edition of NFPA 101, the sprinkler exception was removed from Section 18-3.5 Exception because NFPA 13 picked it up.

The incidence of apartment unit bathroom fires is minuscule. Bathroom fires in apartments, hotels or motels are not a major fire problem in sprinklered or non-sprinklered buildings and that is why the past NFPA Codes and the Model Building Codes (including the I Codes) have exempted small bathrooms from sprinklers in order to encourage these residential occupancies to be sprinklered for life safety/fire protection.

However, for the 2009 edition of NFPA 13, the NFPA 13’s Technical Committee on Sprinkler System Installation Criteria approved a public comment to revise NFPA 13’s Section 8.15.8.1.1 to permit omission of sprinklers only in bathrooms in hotel/motel dwelling units. The code proposal to the 2009 NFPA 13 was first rejected by the NFPA 13 Committee during its ROP period (Code Proposal 13-202 Log #79) with the Committee Statement for rejection as "No technical data was provided supporting this change". But during the ROC period, a public comment (Comment 13-141 Log #235) was submitted by the National Fire Sprinkler Association (NFSA), and the NFPA 13 Committee accepted the Comment based not on any technical data supporting the change, but on the following substantiation:

"Substantiation for NFPA 13 Public Comment 13-141: As a rule, the traditional bathroom has changed in fire loading. Storage of combustibles in these rooms is now very common and the use of high wattage electrical devices has gained widespread acceptance. From unattended curling irons and candles to exhaust fans with exposed heating elements, there are many new sources for potential fires in today's bathrooms. The exception to this new trend would generally be the bathroom in a hotel or motel room that maintains a minimal combustible loading due to the transient nature of the occupancy. As the original submitter pointed out, the Committee has recognized this when discussing closets in these occupancies. Therefore, the sprinklers in smaller bathrooms in hotels and motels should still be permitted to be omitted. This comment created by the NFSA Engineering and Standards Committee."

Out of the 25 voting members of the NFPA 13 Committee, the 2 members that voted to reject the change and their comments were:

BAHODORI, H. (representing Hughes Associates): "This will remove the exception for all apartments and condominium buildings. No substantiation has been provided to justify this."

KEEPING, L. (representing Canadian Automatic Sprinkler Association): "I do not believe that this material should have been accepted. Prior to the 1991 edition of NFPA 13, sprinklers where only allowed to be omitted from the washrooms in hotels, but for that edition, the allowance was opened up to all dwelling units as long as they were no larger than 55 sq. ft. and enclosed within a 15 minute thermal barrier. At that time adequate technical substantiation was offered to validate the change. Since that time, no adverse fire losses have been brought to the Committee's attention that would support this backward step. Further the conditions inside the bathrooms of today are no different from those that were found in 1991, so the current submitter's substantiation is not convincing."

If apartment bathrooms are so hazardous to the occupants' safety, wouldn't one think that in the past 33 years the fire data would have reflected this major deficiency created by the NFPA 101 Subcommittee on Residential Occupancies back in 1976? Why is the multi-family industry, that has been one of the biggest supporters of residential sprinkler systems for the past 20 years, and has the best sprinkler performance records of all occupancy groups (from 2005 NFPA Fire Data On Sprinkler Reliability: 98 percent operational reliability x 98 percent effectiveness of sprinklers = 96 percent performance reliability for apartments) being singled out to provide additional sprinklers where there is no fire problem?

At the NFPA June 2009 Association Technical Meeting the NFPA Membership rejected Comment 13-141, which returned the wording of Section 8.15.8.1.1 in the next 2009 edition of NFPA 13 to permit omission of sprinklers in both small bathrooms in hotel/motel dwelling units as well as apartment dwelling units as it is in the 2007 edition of NFPA 13.

It appears that the NFPA 13’s Technical Committee on Sprinkler System Installation Criteria will continue to attempt to remove this reasonable sprinkler exception in the NFPA 13 Standard to increase the cost of the sprinkler system to increase its profits through the Codes without any technical justification as noted above. To prevent this situation in the future, the NFPA 101 Technical Committee on Residential Occupancies should place this exception back into Chapter 30.

In summary, since the NFPA 13 Committee attempted to remove this apartment bathroom sprinkler exception from its sprinkler standard without having the courtesy of informing or consulting with the NFPA 101 Technical Committee on Residential Occupancies; and without any adequate reason that such an exception has been, or will be, a life safety/fire protection problem, it is only reasonable for the NFPA 101 Technical Committee on Residential Occupancies to place this important life safety exception back into the NFPA 101 Code to continue to encourage sprinkler installations in new, as well as existing, buildings.

101-359 Log #19 SAF-RES Final Action:
(30.3.5.4)

Submitter: Technical Correlating Committee on Safety to Life,

Recommendation: Revisit the subject of the maximum closet area that is to be exempted from sprinklering in a new apartment building as raised in Proposal 101-379 and Comment 101-327 from the 2008 Annual Revision Cycle. If the exemption is to be made more lenient than what NFPA 13 permits, follow the Regulations so as to develop code text to explain the rationale for such deviation, and notify the Committee on Automatic Sprinkler Systems of the plan to deviate from the requirements of NFPA 13.

Substantiation: This proposal is the result of a TCC Action Note asking RES to revisit the subject as the Regulations were not followed during the processing of the 2009 edition.
Use the existing "Reserved Chapter 34" to cover requirements for student residence facilities. Chapters 28 and 29 of the current edition of NFPA 101 treats hotels and dormitories as identical occupancies. We believe that dormitories under the purview of colleges and universities are a large and distinct occupancy type that requires a dedicated chapter in the NFPA Life Safety Code.

We propose that NFPA 101 committees use the Reserved Chapter 34 to provide leading practice for student residence facilities. The definition of this facility type will appear in a separate proposal. The complete draft Chapter 34 is attached herewith. Reserve Chapter 35 for a follow up proposal for the 2015 Life Safety Code that will deal with existing student residence facilities. Related proposals will also be submitted to NFPA 5000 and to other NFPA 101 committees.

This is one of a series of proposals is intended to establish a platform for a national discussion on whether the life safety objectives of appa.org, various state education agencies, and the NFPA, could be more effectively met by de-coupling the life safety requirements of student residence halls from hotels.

The fire safety requirements for dormitories present unique challenges to architects, engineers, facility operators, and fire safety professionals. They fall into a unique category of facility due to ownership, occupancy (the people), organizational mission, and expectations. In the 35+ years of my involvement in higher education, I have seen dormitories from virtually all sides; they are not the same as any other category of facility.

Dormitories are owned by colleges in and universities to support the mission of educating students. The education comes in several forms: socialization with people of different backgrounds, interaction with fellow students and faculty, and learning to live independently (with supervision).

The occupants are familiar with the facility and can walk it in their sleep within a few days or weeks of becoming resident. However, they are often the source of safety problems due to their new-found independence and limited supervision. Some of the accoutrements of home, cigarettes, candles, incense burners, and other heat sources are usually prohibited items that are still found in a dormitory room. Even with automatic shut-off features, curling irons and other appliances can be used carelessly. And young, independent students can also obtain alcohol or other drugs which inhibit their ability to react correctly in an emergency or they become the source of the emergency.

Some colleges and universities have an organizational structure which places the control and operation of dormitories under the student life area where students are to be supported and guided as they mature; not forced into compliance with societal rules other than those of mutual respect. The focus individuals makes dormitory occupants more aware of their surroundings and attentive to things outside the norm.

Despite the social independence, many dormitory occupants are not financially independent and rely on parents for support. Parents have an expectation that the college or university will exercise in loco parentis and protect the student from himself and others. This expectation clashes with the independence-focus on the student and educational efforts of the institution.

So imagine a scenario; a student, age 19, obtains a false ID or goes to a party and gets drunk. The student returns to his dormitory and doesn’t want to wake up his roommate with a bright overhead light so he lights a candle. Maybe he’s careless with the match or maybe the candle is not supported well, the student finally falls into bed and sleeps quite soundly. None of these factors fit within the campus policies; the student doesn’t really care at this point. Whether a fire starts or not relies on a number of other variables. However, parental expectations are that the student is safe, protected, and sheltered from negative influences.

Does this scenario fit the existing residential situations? Probably not, that’s why a separate section for dormitories is needed.

Several facility experts have been consulted in the preparation of this proposal; among them:

Brooks Baker, University of Alabama, Birmingham
Ed Comeau, Campus Firewatch, Belchertown, MA
Richard Davis, The Evergreen State College, Olympia WA
David Handwork, Arkansas State University, Jonesboro AR
Kevin Folsom, Dallas Theological Seminary
Terry Konchesky, West Virginia University
Chapter 34 Student Residence Facilities

34.1 General Requirements.

34.1.1 Application.
34.1.1.1 The requirements of this chapter shall apply to new buildings or portions thereof used as student residence facility occupancies. (See 1.3.1.)

34.1.2 Multiple Occupancies.
34.1.2.1 Multiple occupancies shall be in accordance with 6.1.14.
34.1.2.2 No student residence facility shall have its sole means of egress pass through any nonresidential occupancy in the same building, unless otherwise permitted by 34.1.2.2.1 or 34.1.2.2.2.

34.1.2.2.1 In buildings that are protected by an automatic sprinkler system in accordance with Section 9.7, student residence facilities shall be permitted to have their sole means of egress pass through a nonresidential occupancy in the same building, provided that the following criteria are met:

1. The student residence facility shall comply with Chapter 34.
2. The sole means of egress from the student residence facility shall not pass through a high hazard contents area, as defined in 6.2.2.4.

34.1.2.2.2 In buildings that are not protected by an automatic sprinkler system in accordance with Section 9.7, student residence facilities shall be permitted to have their sole means of egress pass through a nonresidential occupancy in the same building, provided that the following criteria are met:

1. The sole means of egress from the student residence facility to the exterior shall be separated from the remainder of the building by fire barriers having a minimum 1-hour fire resistance rating.
2. The student residence facility shall comply with Chapter 28.
3. The sole means of egress from the student residence facility shall not pass through a high hazard contents area, as defined in 6.2.2.4.

34.1.3 Special Definitions. A list of special terms used in this chapter follows:

1. Student Residence Facility (Hall). See 3.3.254A (NEW).
2. Student Room. See 3.3.254B (NEW).
3. Student Suite. See 3.3.254C (NEW).

34.1.4 Classification of Occupancy. See 6.1.8 and 34.1.3.

34.1.5 Classification of Hazard of Contents.
34.1.5.1 The contents of residential occupancies shall be classified as ordinary hazard in accordance with 6.2.2.
34.1.5.2 For the design of automatic sprinkler systems, the classification of contents in NFPA 13, Standard for the Installation of Sprinkler Systems, shall apply.

34.1.6 Minimum Construction Requirements. (No special requirements.)

34.1.7 Occupant Load. The occupant load, in number of persons for whom means of egress and other provisions are required, shall be determined on the basis of the
occupant load factors of Table 7.3.1.2 that are characteristic of the use of the space or shall be determined as the maximum probable population of the space under consideration, whichever is greater.

34.2 Means of Egress Requirements.

34.2.1 General.

34.2.1.1 Means of egress from student rooms or student suites to the outside of the building shall be in accordance with Chapter 7 and this chapter.

34.2.1.2 Means of escape within the student room or student suite shall comply with the provisions of Section 24.2 for one- and two-family dwellings.

34.2.2 Means of Egress Components.

34.2.2.1 General.

34.2.2.1.1 Components of means of egress shall be limited to the types described in 34.2.2.2 through 34.2.2.12.

34.2.2.1.2 In buildings, other than high-rise buildings, that are protected throughout by an approved, supervised automatic sprinkler system in accordance with 34.3.5, exit enclosures shall have a minimum 1-hour fire resistance rating, and doors shall have a minimum 1-hour fire protection rating.

34.2.2.2 Doors.

34.2.2.2.1 Doors complying with 7.2.1 shall be permitted.

34.2.2.2.2 Door-locking arrangements shall comply with 34.2.2.2.2.1, 34.2.2.2.2.2, 34.2.2.2.2.3, or 34.2.2.2.2.4.

34.2.2.2.2.1 No door in any means of egress shall be locked against egress when the building is occupied.

34.2.2.2.2.2 Delayed-egress locks complying with 7.2.1.6.1 shall be permitted, provided that not more than one such device is located in any one egress path.

34.2.2.2.2.3 Access-controlled egress doors complying with 7.2.1.6.2 shall be permitted.

34.2.2.2.2.4 Elevator lobby exit access door locking in accordance with 7.2.1.6.3 shall be permitted.

34.2.2.2.3 Revolving doors complying with 7.2.1.10 shall be permitted.

34.2.2.2.4 Horizontal-sliding doors, as permitted by 7.2.1.14, shall not be used across corridors.

34.2.2.3 Stairs. Stairs complying with 7.2.2 shall be permitted.

34.2.2.4 Smokeproof Enclosures. Smokeproof enclosures complying with 7.2.3 shall be permitted.

34.2.2.5 Horizontal Exits. Horizontal exits complying with 7.2.4 shall be permitted.

34.2.2.6 Ramps. Ramps complying with 7.2.5 shall be permitted.

34.2.2.7 Exit Passageways. Exit passageways complying with 7.2.6 shall be permitted.

34.2.2.8 Reserved.
34.2.2.9 Reserved.

34.2.2.10 Fire Escape Ladders. Fire escape ladders complying with 7.2.9 shall be permitted.

34.2.2.11 Alternating Tread Devices. Alternating tread devices complying with 7.2.11 shall be permitted.

34.2.2.12 Areas of Refuge.

34.2.2.12.1 Areas of refuge complying with 7.2.12 shall be permitted, as modified by 34.2.2.12.2.

34.2.2.12.2* In buildings protected throughout by an approved, supervised automatic sprinkler system in accordance with 34.3.5, the two accessible rooms or spaces separated from each other by smoke-resistive partitions in accordance with the definition of area of refuge in 3.3.20 shall not be required.

34.2.3 Capacity of Means of Egress.

34.2.3.1 The capacity of means of egress shall be in accordance with Section 7.3.

34.2.3.2 Street floor exits shall be sufficient for the occupant load of the street floor plus the required capacity of stairs and ramps discharging onto the street floor.

34.2.3.3* Corridors, other than those within individual student rooms or individual student suites, shall be of sufficient width to accommodate the required occupant load and shall be not less than 44 in. (1120 mm), 60 in. (1527 mm).

34.2.4 Number of Exits.

34.2.4.1 In buildings other than those complying with 34.2.4.2, not less than two separate exits shall be provided on each story. (See also Section 7.4.)

34.2.4.2 A single exit shall be permitted in buildings where the total number of stories does not exceed four, provided that all of the following conditions are met:

(1) There are four or fewer student rooms or student suites per story.

(2) The building is protected throughout by an approved, supervised automatic sprinkler system in accordance with 34.3.5.

(3) The exit stairway does not serve more than one-half of a story below the level of exit discharge.

(4) The travel distance from the entrance door of any student room or student suite to an exit does not exceed 35 ft (10.7 m).

(5) The exit stairway is completely enclosed or separated from the rest of the building by barriers having a minimum 1-hour fire resistance rating.

(6) All openings between the exit stairway enclosure and the building are protected with self-closing door assemblies having a minimum 1-hour fire protection rating.

(7) All corridors serving as access to exits have a minimum 1-hour fire resistance rating.

(8) Horizontal and vertical separation having a minimum 1/4-hour fire resistance rating is provided between student rooms or student suites.

34.2.5 Arrangement of Means of Egress.
34.2.5.1 Access to all required exits shall be in accordance with Section 7.5, as modified by 34.2.5.2.

34.2.5.2 The distance between exits addressed by 7.5.1.3 shall not apply to common nonlooped exit access corridors in buildings that have corridor doors from the student room or student suite that are arranged such that the exits are located in opposite directions from such doors.

34.2.5.3 In buildings not protected throughout by an approved, supervised automatic sprinkler system in accordance with 34.3.5, common paths of travel shall not exceed 35 ft (10.7 m); travel within a student room or student suite shall not be included when calculating common path of travel.

34.2.5.4 In buildings protected throughout by an approved, supervised automatic sprinkler system in accordance with 34.3.5, common path of travel shall not exceed 50 ft (15 m); travel within a student room or student suite shall not be included when determining common path of travel.

34.2.5.5 In buildings not protected throughout by an approved, automatic sprinkler system in accordance with 34.3.5, dead-end corridors shall not exceed 35 ft (10.7 m).

34.2.5.6 In buildings protected throughout by an approved, automatic sprinkler system in accordance with 34.3.5, dead-end corridors shall not exceed 50 ft (15 m).

34.2.5.7 Any student room or any student suite of rooms in excess of 2000 ft² (185 m²) shall be provided with not less than two exit access doors remotely located from each other.

34.2.6 Travel Distance to Exits.

34.2.6.1 Travel distance within a student room or student suite to a corridor door shall not exceed 75 ft (23 m) in buildings not protected by an approved, supervised automatic sprinkler system in accordance with 34.3.5.

34.2.6.2 Travel distance within a student room or student suite to a corridor door shall not exceed 125 ft (38 m) in buildings protected by an approved, supervised automatic sprinkler system in accordance with 34.3.5.

34.2.6.3 Travel distance from the corridor door of any student room or student suite to the nearest exit shall comply with 34.2.6.3.1, 34.2.6.3.2, or 34.2.6.3.3.

34.2.6.3.1 Travel distance from the corridor door of any student room or student suite to the nearest exit, measured in accordance with Section 7.6, shall not exceed 100 ft (30 m).

34.2.6.3.2 Travel distance from the corridor door of any student room or student suite to the nearest exit, measured in accordance with Section 7.6, shall not exceed 200 ft (61 m) for exterior ways of exit access arranged in accordance with 7.5.3.

34.2.6.3.3 Travel distance from the corridor door of any student room or student suite to the nearest exit shall comply with 34.2.6.3.1 and 34.2.6.3.2.

34.2.6.3.3.1 Travel distance from the corridor door of any student room or student suite to the nearest exit shall be measured in accordance with Section 7.6 and shall not exceed 200 ft (61 m) where the exit access and any portion of the building that is
tributary to the exit access are protected throughout by an approved, supervised automatic sprinkler system in accordance with 34.3.5.

34.2.6.3.3.2 Where the building is not protected throughout by an approved, supervised automatic sprinkler system, the 200 ft (61 m) travel distance shall be permitted within any portion of the building that is protected by an approved, supervised automatic sprinkler system, provided that the sprinklered portion of the building is separated from any nonsprinklered portion by fire barriers having a fire resistance rating as follows:
(1) Minimum 1-hour fire resistance rating for buildings three or fewer stories in height
(2) Minimum 2-hour fire resistance rating for buildings four or more stories in height

34.2.7 Discharge from Exits.
34.2.7.1 Exit discharge shall comply with Section 7.7.
34.2.7.2* Any required exit stair that is located so that it is necessary to pass through the lobby or other open space to reach the outside of the building shall be continuously enclosed down to a level of exit discharge or to a mezzanine within a lobby at a level of exit discharge.
34.2.7.3 The distance of travel from the termination of the exit enclosure to an exterior door leading to a public way shall not exceed 100 ft (30 m).

34.2.8 Illumination of Means of Egress. Means of egress shall be illuminated in accordance with Section 7.8.

34.2.9 Emergency Lighting.
34.2.9.1 Emergency lighting in accordance with Section 7.9 shall be provided.
34.2.9.2 The requirement of 34.2.9.1 shall not apply where each student room or student suite has an exit direct to the outside of the building at street or the finished ground level.

34.2.10 Marking of Means of Egress. Means of egress shall have signs in accordance with Section 7.10.

34.2.11 Special Means of Egress Features.
34.2.11.1 Reserved
34.2.11.2 Lockups. Lockups in student residence facilities occupancies shall comply with the requirements of 22.4.5.

34.3 Protection.

34.3.1 Protection of Vertical Openings.
34.3.1.1 Vertical openings shall comply with 34.3.1.1.1 through 34.3.1.2.
34.3.1.1.1 Vertical openings shall be enclosed or protected in accordance with Section 8.6.
34.3.1.1.2 Vertical openings in accordance with 8.6.8.2 shall be permitted.
34.3.1.1.3 In buildings, other than high-rise buildings, that are protected throughout by an approved, supervised automatic sprinkler system in accordance with 34.3.5, the walls enclosing vertical openings shall have a minimum 1-hour fire resistance rating, and doors shall have a minimum 1-hour fire protection rating.
34.3.1.2 No floor below the level of exit discharge used only for storage, heating equipment, or purposes other than residential occupancy shall have unprotected openings to floors used for residential purposes.

34.3.2 Protection from Hazards.

34.3.2.1 General. All rooms containing high-pressure boilers, refrigerating machinery, transformers, or other service equipment subject to possible explosion shall not be located directly under or directly adjacent to exits and shall be effectively cut off from other parts of the building as specified in Section 8.7.

34.3.2.2 Hazardous Areas.

34.3.2.2.1 Any hazardous area shall be protected in accordance with Section 8.7.

34.3.2.2.2 The areas described in Table 34.3.2.2.2 shall be protected as indicated.

<table>
<thead>
<tr>
<th>Hazardous Area Description</th>
<th>Separation/Protection(^a)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boiler and fuel-fired heater rooms serving more than a single student room or student suite</td>
<td>1 hour and sprinklers</td>
</tr>
<tr>
<td>Employee locker rooms</td>
<td>1 hour or sprinklers</td>
</tr>
<tr>
<td>Bulk laundries</td>
<td>1 hour and sprinklers</td>
</tr>
<tr>
<td>Student laundries (\leq 100 \text{ ft}^2 (\leq 9.3 \text{ m}^2)) outside of student rooms or student suites</td>
<td>1 hour or sprinklers(^b)</td>
</tr>
<tr>
<td>Student laundries (&gt;100 \text{ ft}^2 (&gt;9.3 \text{ m}^2)) outside of student rooms or student suites</td>
<td>1 hour and sprinklers</td>
</tr>
<tr>
<td>Maintenance shops</td>
<td>1 hour and sprinklers</td>
</tr>
<tr>
<td>Storage rooms(^c)</td>
<td>1 hour or sprinklers</td>
</tr>
<tr>
<td>Trash collection rooms</td>
<td>1 hour and sprinklers</td>
</tr>
</tbody>
</table>

\(^a\) Minimum fire resistance rating.

\(^b\) Where sprinklers are provided, the separation specified in 8.7.1.2 and 34.3.2.2.3 is not required.

\(^c\) Where storage areas not exceeding 24 ft\(^2\) (2.2 m\(^2\)) are directly accessible from the student room or student suite, no separation or protection is required.
34.3.2.2.3 Where sprinkler protection without fire-rated separation is used, areas shall be separated from other spaces by smoke partitions complying with Section 8.4.

34.3.3 Interior Finish.

34.3.3.1 General. Interior finish shall be in accordance with Section 10.2.

34.3.3.2 Interior Wall and Ceiling Finish. Interior wall and ceiling finish materials complying with Section 10.2 shall be permitted as follows:

(1) Exit enclosures — Class A
(2) Lobbies and corridors — Class A or Class B
(3) Other spaces — Class A, Class B, or Class C

34.3.3.3 Interior Floor Finish.

34.3.3.3.1 Interior floor finish shall comply with Section 10.2.

34.3.3.3.2 Interior floor finish in exit enclosures and exit access corridors and spaces not separated from them by walls complying with 34.3.6.1 shall be not less than Class II.

34.3.3.3.3 Interior floor finish shall comply with 10.2.7.1 or 10.2.7.2, as applicable.

34.3.4 Detection, Alarm, and Communications Systems.

34.3.4.1 General. A fire alarm system in accordance with Section 9.6, except as modified by 34.3.4.2 through 34.3.4.6, shall be provided.

34.3.4.2 Initiation. The required fire alarm system shall be initiated by each of the following:

(1) Manual means in accordance with 9.6.2
(2) Manual fire alarm box located at the student residence facility administrative reception desk or other convenient central control point under continuous supervision by responsible employees
(3) Required automatic sprinkler system
(4) Required automatic detection system other than sleeping room smoke detectors

34.3.4.3 Notification.

34.3.4.3.1 Occupant notification shall be provided automatically in accordance with 9.6.3.

34.3.4.3.2 Positive alarm sequence in accordance with 9.6.3.4 shall be permitted.

34.3.4.3.3* Student rooms and student suites specifically required and equipped to accommodate hearing-impaired individuals shall be provided with a visible notification appliance.

34.3.4.3.4 In occupiable areas, other than student rooms and student suites, visible notification appliances shall be provided.

34.3.4.3.5 Annunciation and annunciation zoning in accordance with 9.6.7 shall be provided in buildings three or more stories in height or having more than 50 student rooms or student suites. Annunciation shall be provided at a location readily accessible from the primary point of entry for emergency response personnel.

34.3.4.3.6 Emergency forces notification shall be provided in accordance with 9.6.4.
34.3.4.4 Detection. A corridor smoke detection system in accordance with Section 9.6 shall be provided in buildings other than those protected throughout by an approved, supervised automatic sprinkler system in accordance with 34.3.5.3.

34.3.4.5* Smoke Alarms. An approved single-station smoke alarm shall be installed in accordance with 9.6.2.10 in every student room and every living area and sleeping room within a student suite.

34.3.4.6* Protection of Fire Alarm System. The provision of 9.6.1.8.1.3 shall not apply to the smoke detection required at each fire alarm control unit by 9.6.1.8.1(1).

34.3.5 Extinguishment Requirements.

34.3.5.1 All buildings, other than those complying with 34.3.5.2, shall be protected throughout by an approved, supervised automatic sprinkler system in accordance with 34.3.5.3.

34.3.5.2 Automatic sprinkler protection shall not be required in buildings where all student sleeping rooms or student suites have a door opening directly to either of the following:

(1) Outside at the street or the finished ground level

(2) Exterior exit access arranged in accordance with 7.5.3 in buildings three or fewer stories in height

34.3.5.3 Where an automatic sprinkler system is installed, either for total or partial building coverage, the system shall be in accordance with Section 9.7, as modified by 34.3.5.4. In buildings four or fewer stories above grade plane, systems in accordance with NFPA 13R, Standard for the Installation of Sprinkler Systems in Residential Occupancies up to and Including Four Stories in Height, shall be permitted.

34.3.5.4 The provisions for draft stops and closely spaced sprinklers in NFPA 13, Standard for the Installation of Sprinkler Systems, shall not be required for openings complying with 8.6.8.2 where the opening is within the student room or student suite.

34.3.5.5 Reserved.

34.3.5.6 Listed quick-response or listed residential sprinklers shall be used throughout student rooms and student room suites.

34.3.5.7 Open parking structures that comply with NFPA 88A, Standard for Parking Structures, and are contiguous with student residence facilities shall be exempt from the sprinkler requirements of 34.3.5.1.

34.3.5.8 In buildings other than those protected throughout with an approved, supervised automatic sprinkler system in accordance with 34.3.5.3, portable fire extinguishers shall be provided as specified in 9.7.4.1 in hazardous areas addressed by 34.3.2.2.

34.3.6 Corridors.

34.3.6.1 Walls.

34.3.6.1.1 Exit access corridor walls shall comply with 34.3.6.1.2 or 34.3.6.1.3.

34.3.6.1.2 In buildings not complying with 34.3.6.1.3, exit access corridor walls shall consist of fire barriers in accordance with Section 8.3 that have not less than a 1-hour fire resistance rating.
34.3.6.1.3 In buildings protected throughout by an approved, supervised automatic sprinkler system in accordance with 34.3.5, corridor walls shall have a minimum 1-hour fire resistance rating.

34.3.6.2 Doors.

34.3.6.2.1 Doors that open onto exit access corridors shall have not less than a 20-minute fire protection rating in accordance with Section 8.3.

34.3.6.2.2 Reserved.

34.3.6.2.3 Doors that open onto exit access corridors shall be self-closing and self-latching.

34.3.6.3 Unprotected Openings.

34.3.6.3.1 Unprotected openings, other than those from spaces complying with 34.3.6.3.2, shall be prohibited in walls or doors of exit access corridors.

34.3.6.3.2 Spaces shall be permitted to be unlimited in area and open to the corridor, provided that the following criteria are met:

(1) The space is not used for student rooms or student suites or hazardous areas.

(2) The building is protected throughout by an approved, supervised automatic sprinkler system in accordance with 34.3.5.

(3) The space does not obstruct access to required exits.

34.3.6.4 Transoms, Louvers, or Transfer Grilles. Transoms, louvers, or transfer grilles shall be prohibited in walls or doors of exit access corridors.

34.3.7 Subdivision of Building Spaces. Buildings shall be subdivided in accordance with 34.3.7.1 or 34.3.7.2.

34.3.7.1 In buildings not protected throughout by an approved, supervised automatic sprinkler system, each student room, including student suites, shall be separated from other student rooms by walls and floors constructed as fire barriers having a minimum 1-hour fire resistance rating.

34.3.7.2 In buildings protected throughout by an approved, supervised automatic sprinkler system, each student room, including student suites, shall be separated from other student rooms by walls and floors constructed as fire barriers having a minimum 1/2-hour fire resistance rating.

34.3.7.3 Doors in the barriers required by 34.3.7.1 and 34.3.7.2 shall have a fire protection rating of not less than 20 minutes and shall not be required to be self-closing.

34.3.8 Special Protection Features. (Reserved)

34.4 Special Provisions.

34.4.1 High-Rise Buildings.

34.4.1.1 High-rise buildings shall comply with Section 11.8.

34.4.1.2* Emergency plans in accordance with Section 4.8 shall be provided and shall include the following:

(1) Egress procedures

(2) Methods
(3) Preferred evacuation routes for each event, including appropriate use of elevators

34.5 Building Services.

34.5.1 Utilities. Utilities shall comply with the provisions of Section 9.1.

34.5.2 Heating, Ventilating, and Air-Conditioning.

34.5.2.1 Heating, ventilating, and air-conditioning equipment shall comply with the provisions of Section 9.2, except as otherwise required in this chapter.

34.5.2.2 Unvented fuel-fired heaters, other than gas space heaters in compliance with NFPA 54, National Fuel Gas Code, shall not be used.

34.5.3 Elevators, Escalators, and Conveyors.

34.5.3.1 Elevators, escalators, and conveyors shall comply with the provisions of Section 9.4.

34.5.3.2* In high-rise buildings, one elevator shall be provided with a protected power supply and shall be available for use by the fire department in case of emergency.

34.5.4 Rubbish Chutes, Incinerators, and Laundry Chutes. Rubbish chutes, incinerators, and laundry chutes shall comply with the provisions of Section 9.5.

34.6 Reserved Windows. Egress windows shall be specified where the use of operable windows are prohibited for interior environmental and energy cost savings.

34.7 Operating Features.

34.7.1 Student Residence Facility Organization.

34.7.1.1* Employees of student residence facilities shall be instructed and drilled in the duties they are to perform in the event of fire, panic, or other emergency.

34.7.1.2* Drills of the emergency organization shall be held at quarterly intervals and shall cover such points as the operation and maintenance of the available first aid fire appliances, the testing of devices to alert students, and a study of instructions for emergency duties.

34.7.2 Emergency Duties. Upon discovery of a fire, employees shall carry out the following duties:

(1) Activation of the facility fire protection signaling system, if provided
(2) Notification of the public fire department
(3) Other action as previously instructed

34.7.3 Drills in Student Residence Facilities. Emergency egress and relocation drills shall be held with sufficient frequency to familiarize occupants with all types of hazards and to establish conduct of the drill as a matter of routine. Drills shall be conducted during peak occupancy periods and shall include suitable procedures to ensure that all persons subject to the drill participate.

34.7.4 Emergency Instructions for Residents or Students.

34.7.4.1* A floor diagram reflecting the actual floor arrangement, exit locations, and room identification shall be posted in a location and manner acceptable to the authority having jurisdiction on, or immediately adjacent to, every student room and in every student suite.
34.7.4.2* Fire safety information shall be provided to allow students to make the decision to evacuate to the outside, to evacuate to an area of refuge, to remain in place, or to employ any combination of the three options.

34.7.5 Emergency Plans. Emergency plans in accordance with Section 4.8 shall be provided.

34.7.6 Contents and Furnishings.

34.7.6.1 New draperies, curtains, and other similar loosely hanging furnishings and decorations shall be flame resistant as demonstrated by testing in accordance with NFPA 701, Standard Methods of Fire Tests for Flame Propagation of Textiles and Films.

34.7.6.2 Upholstered Furniture and Mattresses.

34.7.6.2.1 Newly introduced upholstered furniture shall meet the criteria specified in 10.3.2.1 and 10.3.3.

34.7.6.2.2 Newly introduced mattresses shall meet the criteria specified in 10.3.2.2 and 10.3.4.

34.7.6.3 Furnishings or decorations of an explosive or highly flammable character shall not be used.

34.7.6.4 Fire-retardant coatings shall be maintained to retain the effectiveness of the treatment under service conditions encountered in actual use.
Revise existing annex note: A.24.2.2.3.3 A window with dimensions of 20 in. x 24 in. (510 mm x 610 mm) has an opening of 3.3 ft$^2$ (0.31 m$^2$), which is less than the required 5.7 ft$^2$ (0.53 m$^2$). Therefore, either the height or width needs to exceed the minimum requirement to provide the required clear area. (See Figure A.24.2.2.3.3) The current minimum width and height dimensions, as well as the minimum clear opening became a requirement of this Code in the 1976 edition and were based on tests conducted to determine the minimum size of the wall opening required to permit a firefighter wearing complete turnout gear and a self-contained breathing apparatus entry to the room from the exterior to effect search and rescue. Prior editions of the Code limited the width and/or height to not less than 22 in. (560 mm) and a clear opening of 5 ft$^2$ (0.47 m$^2$). For existing window frames and sash of steel construction, adherence to these dimensional criteria is essential to permit firefighter entry. For existing window frames and sash of wood construction that can easily be removed prior to entry by firefighters to achieve the 5 ft$^2$ (0.47 m$^2$) hole in the wall, the clear opening created by the occupant upon opening the window from the interior room side need only provide an opening measuring no less than 20 in. x 24 in. (510 mm x 610 mm) or 3.3 ft$^2$ (0.31 m$^2$).

The dimensional requirements do not realistically address the windows found in pre-1960 dwellings and apartment units. Additionally, the Code does not offer guidance for acceptable existing means of escape referenced in Section 24.2.2.3.
PROVIDE SPECIAL DEFINITIONS FOR STUDENT RESIDENCE HALLS IN CHAPTER 3 TO ACCOMPANY RELATED PROPOSALS FOR A NEW CHAPTER 24+ AS FOLLOWS:

(NEW) 3.3+(A) Student Residence Facility (Hall). A building or a space in a building intended with combined living and sleeping accommodations are provided for more than 16 persons who are not members of the same family in one room, or a series of closely associated rooms, with or without independent bathroom and cooking facilities, that are managed by a private or college or university student residence facility administration.

(NEW) 3.3+(B) Student Room. An accommodation within in a student residence facility that combines living, sleeping, and optional sanitary, and storage facilities within a compartment.

(NEW) 3.3+(C) Student Suite. An accommodation within a student residence facility that with two or more contiguous rooms comprising a compartment, with or without doors between such rooms, that provides living, sleeping, and optional sanitary, and storage facilities.

Substantiation: Chapter 24 of the current edition of NFPA 5000 treats hotels and dormitories as identical occupancies. Our industry can put NFPA 5000 to work for the education facilities industry if we see ourselves in this, and related NFPA documents. This is one of a series of proposals is intended to establish a platform for a national discussion on whether the life safety objectives of APPA.ORG, various state education agencies, and the NFPA could be more effectively met by de-coupling the life safety requirements of student residence halls from hotels.

This proposal is primarily intended to adjust the existing code to establish a framework for innovation in safety standards for the education facility industry. While this revision may only break apart a familiar chapter, it will highlight the specifics of dormitories on k-12, college and university campuses whose occupants are different than the occupants of hotels. Admittedly, this is a multi-code correlating undertaking that would span across several NFPA documents: 101, 5000, among them.
Add to Section 8.15.1

(4) Private garages attached to a dwelling unit(s) protected in accordance with 8.15.4.

Add Section 8.15.4

8.15.4 A private garage attached to a dwelling unit(s) shall be separated from the dwelling unit in accordance with this section.

8.15.4.1 A private garage adjacent to a dwelling unit shall be separated from the dwelling unit and its attic by a wall that:
1. has not less than ½in. (mm) gypsum board or its equivalent applied to the garage side and
2. is continuous from the garage floor to the underside of the roof deck.

8.15.4.2 A private garage beneath a dwelling unit or a portion of a dwelling unit shall be separated by 5/8 in. Type-X gypsum board or its equivalent applied to the garage side of the floor or ceiling framing members.

8.15.4.3 Openings

8.15.4.3.1 Openings between the garage and a room designated for sleeping purposes shall not be permitted.

8.15.4.3.2 Openings between the garage and the dwelling unit shall be equipped with solid wood doors or solid or honeycomb steel doors not less than 1 3/8 in. (35mm) in thickness and shall be self-closing.

8.15.4.3.3 Ducts penetrating the walls or ceilings separating the dwelling from the garage shall be constructed of a minimum 0.19 inch thick sheet steel and shall have no openings into the garage.

Add new sections to Chapters 22, 23, 24, 25, and 26 as follows:

22.3.2 Private garages shall be separated from dwelling units as required by Section 8.15.4.

23.3.1 Private garages shall be separated from dwelling units as required by Section 8.15.4.

24.3.1 Private garages shall be separated from dwelling units as required by Section 8.15.4.

25.3.2x Private garages shall be separated from dwelling units in accordance with 8.15.4.

26.3.3.2, X Private garages shall be separated from dwelling units in accordance with 8.15.4.

Substantiation: The committee is responding to Proposals 5000-168 and 5000-170. There is sufficient fire data to indicate that certain types of dwelling units need to be separated by appropriate construction from garages attached thereto. This proposal provides the construction criteria in Chapter 8 and requests that the applicable occupancy TC's (BLD-BCF and BLD-RES) insert the scoping text in their Chapters.
22.1.7 Accessibility (No requirements.)

22.1.7.1 All new buildings or portions thereof used as a one- or two-family dwelling shall comply with ICC/ANSI A117.1, section 1006 Type C Units (Visitability) unless:

1. they comply with the requirements in ICC/ANSI A117.1 for Type A or Type B units,
2. they are a dwelling unit located above another dwelling unit or
3. they meet the site impracticability test set out in Section 12.33.3.2.4 or the base flood elevation conditions set out in Section 12.33.3.2.5

Substantiation: Type C, visitable dwelling units have been added to the technical requirements of ICC/ANSI A117.1-2009 because of the widespread need for such dwelling units and the realization that, with the small incremental change coming from typical new dwelling unit construction, many years will pass before the supply of such units meets the demand for the minimal accessibility and usability such units provide. For this and other reasons, Type C is being scoped via this proposal for all new dwelling units unless they comply with requirements for Type A or Type B units or they are exempted for site impracticability reasons. In addition to accessibility and usability justification, there are important safety benefits from the zero-step requirement applying to one of the dwelling unit entrances that bring dwellings into line with all other new buildings regulated by this Code.

Without repeating much of the extensive justification for the minimal package of requirements for visitable dwelling units provided at the authoritative website, www.concretechange.org, the following listing outlines what limited features are actually being required—and why—for visitable dwelling units under the new ICC/ANSI A117.1-2009 requirements.

Regarding the dwelling unit entrance, at least one unit entrance shall be on a circulation path complying with requirements of A117.1 Section 1006.5 from a public street or sidewalk, a dwelling unit driveway, or a garage. In part, compliance with Section 1006.5 means a zero-step entrance, the single most beneficial aspect of visitability. Other requirements are for circulation path components consisting of one or more of the following:

- walking surfaces with slopes not steeper than 1:20 and complying with A117.1 Section 303,
- doorways with clear widths of at least 32 inches and other circulation path widths also complying with A117.1 Section 403.5,
- ramps complying with A117.1 Section 405,
- elevators complying with A117.1 Sections 407 through 409, and
- wheelchair (platform) lifts complying with A117.1 Section 410.

The interior spaces that must be connected in accordance with A117.1 Section 1006.5 are:

- A toilet room or bathroom containing a lavatory and a water closet with reinforcement provided for the future installation of grab bars at water closets. Clearances at the water closet need to comply with A117.1 Section 1004.11.3.1.2.1, 1004.11.3.1.2.2 or 1004.11.3.1.2.3 for Type B Units, Option A bathrooms.
- One habitable space with an area 70 square feet minimum.
- Where a food preparation area is provided on the entrance level, it requires a sink, a cooking appliance, and a refrigerator with clearances between all opposing base cabinets, counter tops, appliances or walls within the food preparation area a minimum of 40 inches minimum (with an exception for spaces that do not provide a cooktop or conventional range a clearance 36 inches wide is permitted).

The final requirement, at A117.1 Section 1006.8 is for receptacle outlets and operable parts of lighting controls to be located 15 inches minimum and 48 inches maximum above the finish floor (with exceptions for receptacle outlets serving a dedicated use, controls mounted on ceiling fans and ceiling lights, floor receptacle outlets, and lighting controls and receptacle outlets over countertops).

The most fundamental reason for the visitability package of minimal requirements, as often stated by the best known proponent of the concept, Eleanor Smith of Atlanta, is “for a wheelchair user to be able to get into a dwelling unit and pee.” While these basic criteria dictate the more difficult aspects of the visitability package (related to the zero-step entrance and the minimally usable toilet room or bathroom), the A117 Committee added a few other features that it considered essential.

More-complex social (public health) justifications for visitability have been set out in recent publications, both of which can be accessed via the website, www.concretechange.org in the Resources page. They are the AARP Research Report, "Increasing home access: Designing for visitability", and a paper in the Journal of the American Planning Association. Among the “unintended social and financial costs of continuing to construct steps at all entrances and narrow interior doors in homes:
The residents can't comfortably entertain friends and relatives who have mobility limitation.

- A non-disabled person who experiences a temporary disability such as broken bones or recuperation from surgery often must find a different place to live while recuperating.
- A resident may need to move permanently to a nursing home, while a lack of barriers would have allowed the person to stay at home for added months or years.
- Non-disabled residents strain their bodies carrying bicycles, baby carriages, heavy furniture, etc., up steps and through narrow doors and passages.
- Resale or renting the home cuts out potential customers who have mobility limitation or who want a home that welcomes disabled visitors.

It must also be noted that many countries are undergoing dramatic changes in demographics with increasing aging of the population, deteriorating fitness of people regardless of age, and obesity with all of its direct and indirect health and mobility implications. All of these changes point to the need to make our homes more accessible and usable generally.

The ConcreteChange website also provides practical information for builders as well as recently confirmed cost estimates (average for new construction: $200, with a range of $100 to $600 depending on slab or basement construction, for a zero-step entrance plus $50 average for interior doors). Also to be stressed, as noted at the website, "visitability does not demand a front entrance if a side or back entrance is the most feasible" and often the easiest and most logical entrance to make step free is from the garage.

Finally, it should be noted that the formal recommendation of the American Public Health Association on this topic appears in a newly updated public policy position being processed for final APHA approval in November 2009. The public policy position is directed specifically to model code organizations such as NFPA and ICC. (During 2009 and 2010, ICC is also processing at least one proposal for scoping visitability, in accordance with the technical requirements of ICC/ANSI A117.1-2009.)

Since the first edition of NFPA 5000, NFPA has taken the lead position, among model building code groups in the US and Canada, in adopting code change proposals that were recommended in current APHA public policy positions adopted in 1999 and 2000. Visitability is as much an important public health feature as are reasonably safe dwelling unit stairways and automatic sprinkler protection, both of which were featured in APHA policies and subsequently adopted by NFPA. With public health being everything a community does to preserve the wellbeing of its members—and with visitability being based on the combination of individual, family and community needs, the time is now right for NFPA to again take the lead with this important package of relatively modest requirements to address important social goals, goals that are becoming ever more important with the public health changes that are listed above. That this is also occurring as the US is undertaking a major reassessment of what it should be doing with health care is also important. The home building and community development fields need to do their share to make our built environment a positive feature rather than a negative feature in the physical and other aspects of our health with the demographic changes now sweeping the world. Even with the nearly 100 percent scoping called for in this proposal, it will take decades for the full benefits of visitability to be achieved and therefore the limited availability of visitable new homes will almost certainly drive efforts for the voluntary upgrading of other homes. With the costs for such upgrading being much greater than is the provision of visitability for new homes, it is imperative that the scoping for new homes be as complete as possible.

(The A117 Committee expects the 2009 edition to be finished by the end of 2009 and this proposal is being submitted in order to place the requirements before the committee with the understanding that the specific requirement may possibly need to be modified at the ROC phase. A correlative proposal has been submitted to change the current Code reference to update this standard, from the 2003 edition, to the 2009 edition, the first edition to include a technical specification for Type C, Visitable, Units.)

Procedurally, it is recommended that, in advance of its ROP meeting in late 2009, the Residential Technical Committee set up a Task Group to assist the entire Technical Committee to process this proposal. Members of the Task Group should include representatives from NFPA’s Disability Access Review and Advisory Committee, DARAC, especially members who were active in the work of the A117 Committee on the visitability package in the ICC/ANSI A117.1-2009 draft. As well as advising on scoping issues, the Task Group should review this proposal justification for technical consistency with the A117.1 Type C requirements.

This is not original material; its reference/source is as follows:
The visitability requirements of ICC/ANSI A117.1-2009 (as released for public comment) are paraphrased in this proposal. Portions of the justification were taken from the most relevant website, www.concretechang.org and, where these are verbatim, quotation marks are used in the justification section of this proposal.
5000-166     Log #7  BLD-RES
(22.3.x (New))

Final Action:

Note: This proposal appeared as Comment 5000-188 (Log #102) which was held from the Annual 2008 ROC on Proposal 5000-162. The Technical Correlating Committee (TCC) directs that this issue be revisited. The committee acknowledges that the separation is within its scope and it should work towards developing criteria in concert with BLD-BLC.

Submitter: Steve Anderson, Campbell County Building Department / Rep. Building Code Development Committee (BCDC)

Recommendation: Comment to Accept in Principle.

Substantiation: Note: this Comment was developed by the proponent as a member of the Building Code Development Committee (BCDC), with the committee’s endorsement.

It is important to protect the occupants of the dwelling from the hazards associated with an attached garage, particularly since the occupants are not always awake and aware.

5000-167     Log #6  BLD-RES
(22.3.x (New))

Final Action:

Note: This proposal appeared as Comment 5000-189 (Log #64a) which was held from the Annual 2008 ROC on Proposal 5000-162. The Technical Correlating Committee (TCC) directs that this issue be revisited. The committee acknowledges that the separation is within its scope and it should work towards developing criteria in concert with BLD-BLC.

Submitter: Jon Nisja, Northcentral Regional Fire Code Development Committee

Recommendation: Add new text as follows:

Attached Garages.

● Provisions shall be made to provide fire separation between the garage and the dwelling unit.

● As a minimum, the garage shall be separated from the dwelling unit and its attic by not less than / in. (mm) gypsum board applied to the garage side and the separation shall be continuous from the bottom of the floor to the underside of the roof deck. The design approval and the manufacturer’s installation instructions shall include provision for equivalent vertical separation between the garage and the space below the dwelling unit’s floor system.

● Openings between the garage directly into a room designated for sleeping purposes shall not be permitted. Other openings between the garage and the manufactured home shall be equipped with solid wood doors not less than in. (5 mm) in thickness, solid or honeycomb steel doors not less than in. (5 mm) in thickness, or 0-minute fire rated doors, and all doors shall be self-closing.

● Ducts penetrating the walls or ceilings separating the dwelling from the garage shall be constructed of a minimum No. gauge steel or other approved material and shall have no openings in the garage.

● Exception: When a sprinkler system is installed.

Substantiation: We have resubmitted to make sure the committee and TCC statement of redirection was done. They suggested that this proposal be submitted to the TC on Structures, Construction, and Materials and BLD-BLC.

Currently there are no provisions for the separation of the garage from the dwelling unit. The text was extracted from NFPA 501. Fire starting in a garage can spread into the dwelling unit with no protection. The proposed text provides text in protecting the dwelling unit from a garage fire and vice versa.
5000-171     Log #143a  BLD-RES
(22.3.4.x, 23.3.4.x, 24.3.4.x, 25.3.4.x, 26.2.3.4.x, and 26.3.3.4.x (New))

Submitter: Ignatius Kapalczynski, CT Office of State Fire Marshal
Recommendation: Add text to read as follows:
Carbon monoxide detectors shall be provided, installed, and maintained in accordance with 55.2.x

Substantiation: Addresses a method to provide early warning to occupants of the presence of harmful amounts of products of incomplete combustion (carbon monoxide).
This is not original material; its reference/source is as follows:
To assist NFPA technical committees correlate/harmonize NFPA 101 and NFPA 5000 content, this proposal is being submitted simultaneously with a related proposal for a dedicated student residence facility chapter in NFPA 101. Our industry believes that there is a business case to be made for a similar, dedicated chapter in NFPA 5000. While we understand the fire protection science implicit in the continuum of hotel, dormitory, rooming house and apartment occupancy types, we believe that dormitories under the purview of colleges and universities are an occupancy type that is a distinct and growing occupancy type. Having a platform in a national consensus document may set the stage for a broader discussion about sprinkler systems in off-campus housing, for example.

The complete draft Chapter 34 that has been submitted to the NFPA 101 technical committees is attached herewith. A functional adaptation of this chapter should appear in NFPA 101 along with related definitions in Chapter 3.

***Include-5000-L100***

**Substantiation:** The following substantiation was submitted by Ted Weidner of the University of Nebraska in the corresponding proposal made to NFPA 101:

*The fire safety requirements for dormitories present unique challenges to architects, engineers, facility operators, and fire safety professionals. They fall into a unique category of facility due to ownership, occupancy (the people), organizational mission, and expectations. In the 35+ years of my involvement in higher education, I have seen dormitories from virtually all sides; they are not the same as any other category of facility.

Dormitories are owned by colleges in and universities to support the mission of educating students. The education comes in several forms: socialization with people of different backgrounds, interaction with fellow students and faculty, and learning to live independently (with supervision). The occupants are familiar with the facility and can walk it in their sleep within a few days or weeks of becoming resident. However, they are often the source of safety problems due to their newfound independence and limited supervision. Some of the accoutrements of home, cigarettes, candles, incense burners, and other heat sources are usually prohibited items that are still found in a dormitory room. Even with automatic shut-off features, curling irons and other appliances can be used carelessly. And young, independent students can also obtain alcohol or other drugs which inhibit their ability to react correctly in an emergency or they become the source of the emergency.

Some colleges and universities have an organizational structure which places the control and operation of dormitories under the student life area where students are to be supported and guided as they mature; not forced into compliance with societal rules other than those of mutual respect. The focus individuals makes dormitory occupants more aware of their surroundings and attentive to things outside the norm.

Despite the social independence, many dormitory occupants are not financially independent and rely on parents for support. Parents have an expectation that the college or university will exercise in loco parentis and protect the student from himself and others. This expectation clashes with the independence-focus on the student and educational efforts of the institution.

So imagine a scenario; a student, age 19, obtains a false ID or goes to a party and gets drunk. The student returns to his dormitory and doesn’t want to wake up his roommate with a bright overhead light so he lights a candle. Maybe he’s careless with the match or maybe the candle is not supported well, the student finally falls into bed and sleeps quite soundly. None of these factors fit within the campus policies; the student doesn’t really care at this point. Whether a fire starts or not relies on a number of other variables. However, parental expectations are that the student is safe, protected, and sheltered from negative influences.

Does this scenario fit the existing residential situations? Probably not, that’s why a separate section for dormitories is needed.*

This is not original material; its reference/source is as follows:

APPAP.ORG Code Advisory Committee
Several facility experts have been consulted in the preparation of this proposal; among them:
Brooks Baker, University of Alabama, Birmingham
Ed Comeau, Campus Firewatch, Belchertown, MA
Richard Davis, The Evergreen State College, Olympia WA
David Handwork, Arkansas State University, Jonesboro AR
Kevin Folsom, Dallas Theological Seminary
Terry Konchesky, West Virginia University
Chapter 24+ Student Residence Facilities

24+.1 General Requirements.
24+.1.1 Application.
24+.1.1.1 The requirements of this chapter shall apply to new buildings or portions thereof used as student residence facility occupancies. (See 1.3.1.)

24+.1.2 Multiple Occupancies.
24+.1.2.1 Multiple occupancies shall be in accordance with 6.1.14.
24+.1.2.2 No student residence facility shall have its sole means of egress pass through any nonresidential occupancy in the same building, unless otherwise permitted by 24+.1.2.2.1 or 24+.1.2.2.2.

24+.1.2.2.1 In buildings that are protected by an automatic sprinkler system in accordance with Section 9.7, student residence facilities shall be permitted to have their sole means of egress pass through a nonresidential occupancy in the same building, provided that the following criteria are met:
   (1) The student residence facility shall comply with Chapter 24+.
   (2) The sole means of egress from the student residence facility shall not pass through a high hazard contents area, as defined in 6.2.2.4.

24+.1.2.2.2 In buildings that are not protected by an automatic sprinkler system in accordance with Section 9.7, student residence facilities shall be permitted to have their sole means of egress pass through a nonresidential occupancy in the same building, provided that the following criteria are met:
   (1) The sole means of egress from the student residence facility to the exterior shall be separated from the remainder of the building by fire barriers having a minimum 1-hour fire resistance rating.
   (2) The student residence facility shall comply with Chapter 28.
   (3) The sole means of egress from the student residence facility shall not pass through a high hazard contents area, as defined in 6.2.2.4.

24+.1.3 Special Definitions. A list of special terms used in this chapter follows:
(1) Student Residence Facility(Hall). See 3.3.254A(NEW).
(2) Student Room. See 3.3.254B (NEW).
(3) Student Suite. See 3.3.254C (NEW).

24+.1.4 Classification of Occupancy. See 6.1.8 and 24+.1.3.
24+.1.5 Classification of Hazard of Contents.
24+.1.5.1 The contents of residential occupancies shall be classified as ordinary hazard in accordance with 6.2.2.
24+.1.5.2 For the design of automatic sprinkler systems, the classification of contents in NFPA 13, Standard for the Installation of Sprinkler Systems, shall apply.
24+.1.6 Minimum Construction Requirements. (No special requirements.)
24+.1.7 Occupant Load. The occupant load, in number of persons for whom means of egress and other provisions are required, shall be determined on the basis of the occupant load factors of Table 7.3.1.2 that are characteristic of the use of the space or shall be determined as the maximum probable population of the space under consideration, whichever is greater.

24+.2 Means of Egress Requirements.
24+.2.1 General.
24+.2.1.1 Means of egress from student rooms or student suites to the outside of the building shall be in accordance with Chapter 7 and this chapter.
24+.2.1.2 Means of escape within the student room or student suite shall comply with the provisions of Section 24.2 for one- and two-family dwellings.

24+.2.2 Means of Egress Components.

24+.2.2.1 General.

24+.2.2.1.1 Components of means of egress shall be limited to the types described in 24+.2.2.2 through 24+.2.2.12.

24+.2.2.1.2 In buildings, other than high-rise buildings, that are protected throughout by an approved, supervised automatic sprinkler system in accordance with 24+.3.5, exit enclosures shall have a minimum 1-hour fire resistance rating, and doors shall have a minimum 1-hour fire protection rating.

24+.2.2.2 Doors.

24+.2.2.2.1 Doors complying with 7.2.1 shall be permitted.

24+.2.2.2.2 Door-locking arrangements shall comply with 24+.2.2.2.2.1, 24+.2.2.2.2.2, 24+.2.2.2.3, or 24+.2.2.2.4.

24+.2.2.2.1.1 No door in any means of egress shall be locked against egress when the building is occupied.

24+.2.2.2.2.2 Delayed-egress locks complying with 7.2.1.6.1 shall be permitted, provided that not more than one such device is located in any one egress path.

24+.2.2.2.2.3 Access-controlled egress doors complying with 7.2.1.6.2 shall be permitted.

24+.2.2.2.2.4 Elevator lobby exit access door locking in accordance with 7.2.1.6.3 shall be permitted.

24+.2.2.2.3 Revolving doors complying with 7.2.1.10 shall be permitted.

24+.2.2.2.4 Horizontal-sliding doors, as permitted by 7.2.1.14, shall not be used across corridors.

24+.2.2.3 Stairs. Stairs complying with 7.2.2 shall be permitted.

24+.2.2.4 Smokeproof Enclosures. Smokeproof enclosures complying with 7.2.3 shall be permitted.

24+.2.2.5 Horizontal Exits. Horizontal exits complying with 7.2.4 shall be permitted.

24+.2.2.6 Ramps. Ramps complying with 7.2.5 shall be permitted.

24+.2.2.7 Exit Passageways. Exit passageways complying with 7.2.6 shall be permitted.

24+.2.2.8 Reserved.

24+.2.2.9 Reserved.

24+.2.2.10 Fire Escape Ladders. Fire escape ladders complying with 7.2.9 shall be permitted.

24+.2.2.11 Alternating Tread Devices. Alternating tread devices complying with 7.2.11 shall be permitted.

24+.2.2.12 Areas of Refuge.

24+.2.2.12.1 Areas of refuge complying with 7.2.12 shall be permitted, as modified by 24+.2.2.12.2.

24+.2.2.12.2* In buildings protected throughout by an approved, supervised automatic sprinkler system in accordance with 24+.3.5, the two accessible rooms or spaces separated from each other by smoke-resistive partitions in accordance with the definition of area of refuge in 3.3.20 shall not be required.

24+.2.3 Capacity of Means of Egress.

24+.2.3.1 The capacity of means of egress shall be in accordance with Section 7.3.
24+.2.3.2 Street floor exits shall be sufficient for the occupant load of the street floor plus the required capacity of stairs and ramps discharging onto the street floor.

24+.2.3.3 Corridors, other than those within individual student rooms or individual student suites, shall be of sufficient width to accommodate the required occupant load and shall be not less than 44 in. (1120 mm), 60 in. (1527 mm).

24+.2.4 Number of Exits.

24+.2.4.1 In buildings other than those complying with 24+.2.4.2, not less than two separate exits shall be provided on each story. (See also Section 7.4.)

24+.2.4.2 A single exit shall be permitted in buildings where the total number of stories does not exceed four, provided that all of the following conditions are met:

1. There are four or fewer student rooms or student suites per story.
2. The building is protected throughout by an approved, supervised automatic sprinkler system in accordance with 24+.3.5.
3. The exit stairway does not serve more than one-half of a story below the level of exit discharge.
4. The travel distance from the entrance door of any student room or student suite to an exit does not exceed 35 ft (10.7 m).
5. The exit stairway is completely enclosed or separated from the rest of the building by barriers having a minimum 1-hour fire resistance rating.
6. All openings between the exit stairway enclosure and the building are protected with self-closing door assemblies having a minimum 1-hour fire protection rating.
7. All corridors serving as access to exits have a minimum 1-hour fire resistance rating.
8. Horizontal and vertical separation having a minimum 1-hour fire resistance rating is provided between student rooms or student suites.

24+.2.5 Arrangement of Means of Egress.

24+.2.5.1 Access to all required exits shall be in accordance with Section 7.5, as modified by 24+.2.5.2.

24+.2.5.2 The distance between exits addressed by 7.5.1.3 shall not apply to common nonlooped exit access corridors in buildings that have corridor doors from the student room or student suite that are arranged such that the exits are located in opposite directions from such doors.

24+.2.5.3 In buildings not protected throughout by an approved, supervised automatic sprinkler system in accordance with 24+.3.5, common paths of travel shall not exceed 35 ft (10.7 m); travel within a student room or student suite shall not be included when calculating common path of travel.

24+.2.5.4 In buildings protected throughout by an approved, supervised automatic sprinkler system in accordance with 24+.3.5, common path of travel shall not exceed 50 ft (15 m); travel within a student room or student suite shall not be included when determining common path of travel.

24+.2.5.5 In buildings not protected throughout by an approved, automatic sprinkler system in accordance with 24+.3.5, dead-end corridors shall not exceed 35 ft (10.7 m).

24+.2.5.6 In buildings protected throughout by an approved, supervised automatic sprinkler system in accordance with 24+.3.5, dead-end corridors shall not exceed 50 ft (15 m).

24+.2.5.7 Any student room or any student suite of rooms in excess of 2000 ft² (185 m²) shall be provided with not less than two exit access doors remotely located from each other.

24+.2.6 Travel Distance to Exits.
24+.2.6.1 Travel distance within a student room or student suite to a corridor door shall not exceed 75 ft (23 m) in buildings not protected by an approved, supervised automatic sprinkler system in accordance with 24+.3.5.

24+.2.6.2 Travel distance within a student room or student suite to a corridor door shall not exceed 125 ft (38 m) in buildings protected by an approved, supervised automatic sprinkler system in accordance with 24+.3.5.

24+.2.6.3 Travel distance from the corridor door of any student room or student suite to the nearest exit shall comply with 24+.2.6.3.1, 24+.2.6.3.2, or 24+.2.6.3.3.

24+.2.6.3.1 Travel distance from the corridor door of any student room or student suite to the nearest exit, measured in accordance with Section 7.6, shall not exceed 100 ft (30 m).

24+.2.6.3.2 Travel distance from the corridor door of any student room or student suite to the nearest exit, measured in accordance with Section 7.6, shall not exceed 200 ft (61 m) for exterior ways of exit access arranged in accordance with 7.5.3.

24+.2.6.3.3 Travel distance from the corridor door of any student room or student suite to the nearest exit shall comply with 24+.2.6.3.3.1 and 24+.2.6.3.3.2.

24+.2.6.3.3.1 Travel distance from the corridor door of any student room or student suite to the nearest exit shall be measured in accordance with Section 7.6 and shall not exceed 200 ft (61 m) where the exit access and any portion of the building that is tributary to the exit access are protected throughout by an approved, supervised automatic sprinkler system in accordance with 24+.3.5.

24+.2.6.3.3.2 Where the building is not protected throughout by an approved, supervised automatic sprinkler system, the 200 ft (61 m) travel distance shall be permitted within any portion of the building that is protected by an approved, supervised automatic sprinkler system, provided that the sprinklered portion of the building is separated from any nonsprinklered portion by fire barriers having a fire resistance rating as follows:

1. Minimum 1-hour fire resistance rating for buildings three or fewer stories in height
2. Minimum 2-hour fire resistance rating for buildings four or more stories in height

24+.2.7 Discharge from Exits.

24+.2.7.1 Exit discharge shall comply with Section 7.7.

24+.2.7.2* Any required exit stair that is located so that it is necessary to pass through the lobby or other open space to reach the outside of the building shall be continuously enclosed down to a level of exit discharge or to a mezzanine within a lobby at a level of exit discharge.

24+.2.7.3 The distance of travel from the termination of the exit enclosure to an exterior door leading to a public way shall not exceed 100 ft (30 m).

24+.2.8 Illumination of Means of Egress. Means of egress shall be illuminated in accordance with Section 7.8.

24+.2.9 Emergency Lighting.

24+.2.9.1 Emergency lighting in accordance with Section 7.9 shall be provided.

24+.2.9.2 The requirement of 24+.2.9.1 shall not apply where each student room or student suite has an exit direct to the outside of the building at street or the finished ground level.

24+.2.10 Marking of Means of Egress. Means of egress shall have signs in accordance with Section 7.10.

24+.2.11 Special Means of Egress Features.

24+.2.11.1 Reserved

24+.2.11.2 Lockups. Lockups in student residence facilities occupancies shall comply with the requirements of 22.4.5.

24+.3 Protection.
24+.3.1 Protection of Vertical Openings.
24+.3.1.1 Vertical openings shall comply with 24+.3.1.1.1 through 24+.3.1.2.
24+.3.1.1.1 Vertical openings shall be enclosed or protected in accordance with Section 8.6.
24+.3.1.1.2 Vertical openings in accordance with 8.6.8.2 shall be permitted.
24+.3.1.1.3 In buildings, other than high-rise buildings, that are protected throughout by an approved, supervised automatic sprinkler system in accordance with 24+.3.5, the walls enclosing vertical openings shall have a minimum 1-hour fire resistance rating, and doors shall have a minimum 1-hour fire protection rating.
24+.3.1.2 No floor below the level of exit discharge used only for storage, heating equipment, or purposes other than residential occupancy shall have unprotected openings to floors used for residential purposes.

24+.3.2 Protection from Hazards.
24+.3.2.1 General. All rooms containing high-pressure boilers, refrigerating machinery, transformers, or other service equipment subject to possible explosion shall not be located directly under or directly adjacent to exits and shall be effectively cut off from other parts of the building as specified in Section 8.7.
24+.3.2.2 Hazardous Areas.
24+.3.2.2.1 Any hazardous area shall be protected in accordance with Section 8.7.
24+.3.2.2.2 The areas described in Table 24+.3.2.2.2 shall be protected as indicated.

<table>
<thead>
<tr>
<th>Hazardous Area Description</th>
<th>Separation/Protection&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boiler and fuel-fired heater rooms serving more than a single student room or student suite</td>
<td>1 hour and sprinklers</td>
</tr>
<tr>
<td>Employee locker rooms</td>
<td>1 hour or sprinklers</td>
</tr>
<tr>
<td>Bulk laundries</td>
<td>1 hour and sprinklers</td>
</tr>
<tr>
<td>Student laundries ≤100 ft&lt;sup&gt;2&lt;/sup&gt; (≤9.3 m&lt;sup&gt;2&lt;/sup&gt;) outside of student rooms or student suites</td>
<td>1 hour or sprinklers&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>Student laundries &gt;100 ft&lt;sup&gt;2&lt;/sup&gt; (&gt;9.3 m&lt;sup&gt;2&lt;/sup&gt;) outside of student rooms or student suites</td>
<td>1 hour and sprinklers</td>
</tr>
<tr>
<td>Maintenance shops</td>
<td>1 hour and sprinklers</td>
</tr>
<tr>
<td>Storage rooms&lt;sup&gt;c&lt;/sup&gt;</td>
<td>1 hour or sprinklers</td>
</tr>
<tr>
<td>Trash collection rooms</td>
<td>1 hour and sprinklers</td>
</tr>
</tbody>
</table>

<sup>a</sup> Minimum fire resistance rating.
<sup>b</sup> Where sprinklers are provided, the separation specified in 8.7.1.2 and 24+.3.2.2.3 is not required.
<sup>c</sup> Where storage areas not exceeding 24 ft<sup>2</sup> (2.2 m<sup>2</sup>) are directly accessible from the student room or student suite, no separation or protection is required.
24+.3.2.2.3 Where sprinkler protection without fire-rated separation is used, areas shall be separated from other spaces by smoke partitions complying with Section 8.4.

24+.3.3 Interior Finish.
24+.3.3.1 General. Interior finish shall be in accordance with Section 10.2.
24+.3.3.2 Interior Wall and Ceiling Finish. Interior wall and ceiling finish materials complying with Section 10.2 shall be permitted as follows:
   (1) Exit enclosures — Class A
   (2) Lobbies and corridors — Class A or Class B
   (3) Other spaces — Class A, Class B, or Class C
24+.3.3.3 Interior Floor Finish.
24+.3.3.3.1 Interior floor finish shall comply with Section 10.2.
24+.3.3.3.2 Interior floor finish in exit enclosures and exit access corridors and spaces not separated from them by walls complying with 24+.3.6.1 shall be not less than Class II.
24+.3.3.3.3 Interior floor finish shall comply with 10.2.7.1 or 10.2.7.2, as applicable.

24+.3.4 Detection, Alarm, and Communications Systems.
24+.3.4.1 General. A fire alarm system in accordance with Section 9.6, except as modified by 24+.3.4.2 through 24+.3.4.6, shall be provided.
24+.3.4.2 Initiation. The required fire alarm system shall be initiated by each of the following:
   (1) Manual means in accordance with 9.6.2
   (2) Manual fire alarm box located at the student residence facility administrative reception desk or other convenient central control point under continuous supervision by responsible employees
   (3) Required automatic sprinkler system
   (4) Required automatic detection system other than sleeping room smoke detectors

24+.3.4.3 Notification.
24+.3.4.3.1* Occupant notification shall be provided automatically in accordance with 9.6.3.
24+.3.4.3.2 Positive alarm sequence in accordance with 9.6.3.4 shall be permitted.
24+.3.4.3.3* Student rooms and student suites specifically required and equipped to accommodate hearing-impaired individuals shall be provided with a visible notification appliance.
24+.3.4.3.4 In occupiable areas, other than student rooms and student suites, visible notification appliances shall be provided.
24+.3.4.3.5 Annunciation and annunciation zoning in accordance with 9.6.7 shall be provided in buildings three or more stories in height or having more than 50 student rooms or student suites. Annunciation shall be provided at a location readily accessible from the primary point of entry for emergency response personnel.
24+.3.4.3.6 Emergency forces notification shall be provided in accordance with 9.6.4.

24+.3.4.4 Detection. A corridor smoke detection system in accordance with Section 9.6 shall be provided in buildings other than those protected throughout by an approved, supervised automatic sprinkler system in accordance with 24+.3.5.3.

24+.3.4.5* Smoke Alarms. An approved single-station smoke alarm shall be installed in accordance with 9.6.2.10 in every student room and every living area and sleeping room within a student suite.
24+.3.4.6* Protection of Fire Alarm System. The provision of 9.6.1.8.1.3 shall not apply to the smoke detection required at each fire alarm control unit by 9.6.1.8.1(1).

24+.3.5 Extinguishment Requirements.

24+.3.5.1 All buildings, other than those complying with 24+.3.5.2, shall be protected throughout by an approved, supervised automatic sprinkler system in accordance with 24+.3.5.3.

24+.3.5.2 Automatic sprinkler protection shall not be required in buildings where all student sleeping rooms or student suites have a door opening directly to either of the following:

(1) Outside at the street or the finished ground level

(2) Exterior exit access arranged in accordance with 7.5.3 in buildings three or fewer stories in height

24+.3.5.3 Where an automatic sprinkler system is installed, either for total or partial building coverage, the system shall be in accordance with Section 9.7, as modified by 24+.3.5.4. In buildings four or fewer stories above grade plane, systems in accordance with NFPA 13R, Standard for the Installation of Sprinkler Systems in Residential Occupancies up to and Including Four Stories in Height, shall be permitted.

24+.3.5.4 The provisions for draft stops and closely spaced sprinklers in NFPA 13, Standard for the Installation of Sprinkler Systems, shall not be required for openings complying with 8.6.8.2 where the opening is within the student room or student suite.

24+.3.5.5 Reserved.

24+.3.5.6 Listed quick-response or listed residential sprinklers shall be used throughout student rooms and student room suites.

24+.3.5.7 Open parking structures that comply with NFPA 88A, Standard for Parking Structures, and are contiguous with student residence facilities shall be exempt from the sprinkler requirements of 24+.3.5.1.

24+.3.5.8 In buildings other than those protected throughout with an approved, supervised automatic sprinkler system in accordance with 24+.3.5.3, portable fire extinguishers shall be provided as specified in 9.7.4.1 in hazardous areas addressed by 24+.3.2.2.

24+.3.6 Corridors.

24+.3.6.1 Walls.

24+.3.6.1.1 Exit access corridor walls shall comply with 24+.3.6.1.2 or 24+.3.6.1.3.

24+.3.6.1.2 In buildings not complying with 24+.3.6.1.3, exit access corridor walls shall consist of fire barriers in accordance with Section 8.3 that have not less than a 1-hour fire resistance rating.

24+.3.6.1.3 In buildings protected throughout by an approved, supervised automatic sprinkler system in accordance with 24+.3.5, corridor walls shall have a minimum ½-hour fire resistance rating.

24+.3.6.2 Doors.

24+.3.6.2.1 Doors that open onto exit access corridors shall have not less than a 20-minute fire protection rating in accordance with Section 8.3.

24+.3.6.2.2 Reserved.

24+.3.6.2.3 Doors that open onto exit access corridors shall be self-closing and self-latching.

24+.3.6.3 Unprotected Openings.

24+.3.6.3.1 Unprotected openings, other than those from spaces complying with 24+.3.6.3.2, shall be prohibited in exit access corridor walls and doors.

24+.3.6.3.2 Spaces shall be permitted to be unlimited in area and open to the corridor, provided that the following criteria are met:
(1) The space is not used for student rooms or student suites or hazardous areas.

(2) The building is protected throughout by an approved, supervised automatic sprinkler system in accordance with 24.3.5.

(3) The space does not obstruct access to required exits.

24.3.6.4 Transoms, Louvers, or Transfer Grilles. Transoms, louvers, or transfer grilles shall be prohibited in walls or doors of exit access corridors.

24.3.7 Subdivision of Building Spaces. Buildings shall be subdivided in accordance with 24.3.7.1 or 24.3.7.2.

24.3.7.1 In buildings not protected throughout by an approved, supervised automatic sprinkler system, each student room, including student suites, shall be separated from other student rooms by walls and floors constructed as fire barriers having a minimum 1-hour fire resistance rating.

24.3.7.2 In buildings protected throughout by an approved, supervised automatic sprinkler system, each student room, including student suites, shall be separated from other student rooms by walls and floors constructed as fire barriers having a minimum \( \frac{1}{2} \)-hour fire resistance rating.

24.3.7.3 Doors in the barriers required by 24.3.7.1 and 24.3.7.2 shall have a fire protection rating of not less than 20 minutes and shall not be required to be self-closing.

24.3.8 Special Protection Features. (Reserved)

24.4 Special Provisions.

24.4.1 High-Rise Buildings.

24.4.1.1 High-rise buildings shall comply with Section 11.8.

24.4.1.2* Emergency plans in accordance with Section 4.8 shall be provided and shall include the following:

(1) Egress procedures
(2) Methods
(3) Preferred evacuation routes for each event, including appropriate use of elevators

24.5 Building Services.

24.5.1 Utilities. Utilities shall comply with the provisions of Section 9.1.

24.5.2 Heating, Ventilating, and Air-Conditioning.

24.5.2.1 Heating, ventilating, and air-conditioning equipment shall comply with the provisions of Section 9.2, except as otherwise required in this chapter.

24.5.2.2 Unvented fuel-fired heaters, other than gas space heaters in compliance with NFPA 54, National Fuel Gas Code, shall not be used.

24.5.3 Elevators, Escalators, and Conveyors.

24.5.3.1 Elevators, escalators, and conveyors shall comply with the provisions of Section 9.4.

24.5.3.2* In high-rise buildings, one elevator shall be provided with a protected power supply and shall be available for use by the fire department in case of emergency.

24.5.4 Rubbish Chutes, Incinerators, and Laundry Chutes. Rubbish chutes, incinerators, and laundry chutes shall comply with the provisions of Section 9.5.

24.6 Reserved Windows. Egress windows shall be specified where the use of operable windows are prohibited for interior environmental and energy cost savings.

24.7 Operating Features.

24.7.1 Student Residence Facility Organization.

24.7.1.1* Employees of student residence facilities shall be instructed and drilled in the duties they are to perform in the event of fire, panic, or other emergency.
24+.7.1.2* Drills of the emergency organization shall be held at quarterly intervals and shall cover such points as the operation and maintenance of the available first aid fire appliances, the testing of devices to alert students, and a study of instructions for emergency duties.

24+.7.2 Emergency Duties. Upon discovery of a fire, employees shall carry out the following duties:

(1) Activation of the facility fire protection signaling system, if provided
(2) Notification of the public fire department
(3) Other action as previously instructed

24+.7.3 Drills in Student Residence Facilities. Emergency egress and relocation drills shall be held with sufficient frequency to familiarize occupants with all types of hazards and to establish conduct of the drill as a matter of routine. Drills shall be conducted during peak occupancy periods and shall include suitable procedures to ensure that all persons subject to the drill participate.

24+.7.4 Emergency Instructions for Residents or Students.

24+.7.4.1* A floor diagram reflecting the actual floor arrangement, exit locations, and room identification shall be posted in a location and manner acceptable to the authority having jurisdiction on, or immediately adjacent to, every student room and in every student suite.

24+.7.4.2* Fire safety information shall be provided to allow students to make the decision to evacuate to the outside, to evacuate to an area of refuge, to remain in place, or to employ any combination of the three options.

24+.7.5 Emergency Plans. Emergency plans in accordance with Section 4.8 shall be provided.

24+.7.6 Contents and Furnishings.

24+.7.6.1 New draperies, curtains, and other similar loosely hanging furnishings and decorations shall be flame resistant as demonstrated by testing in accordance with NFPA 701, *Standard Methods of Fire Tests for Flame Propagation of Textiles and Films*.

24+.7.6.2 Upholstered Furniture and Mattresses.

24+.7.6.2.1 Newly introduced upholstered furniture shall meet the criteria specified in 10.3.2.1 and 10.3.3.

24+.7.6.2.2 Newly introduced mattresses shall meet the criteria specified in 10.3.2.2 and 10.3.4.

24+.7.6.3 Furnishings or decorations of an explosive or highly flammable character shall not be used.

24+.7.6.4 Fire-retardant coatings shall be maintained to retain the effectiveness of the treatment under service conditions encountered in actual use.