2.2 NFPA Publications.
<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>---------------------------------------------------------------</td>
</tr>
</tbody>
</table>


NFPA 2113, Standard on Selection, Care, Use, and Maintenance of Flame-Resistant Garments for Protection of Industrial Personnel Against Flash Fire, 2012 edition.


PYR 1128, Standard Method of Fire Test for Flame Breaks, 2013

PYR 1129, Standard Method of Fire Test for Covered Fuse on Consumer Fireworks, 2013
<table>
<thead>
<tr>
<th>Committee Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Committee Statement:</strong> Editorial - NFPA 1600 reference deleted; NFPA 5000 reference re-inserted (inadvertently deleted); Added ref to NFPA 2113 (40.6.2.2); added PYR 1128 (65.10.3.15.2.2); added PYR 1129 (65.10.3.15.4.1); added ref to NFPA 720 (13.7.1.5); NFPA 2010 (Table 13.8); updated title of NFPA 13R.</td>
</tr>
</tbody>
</table>

| Response Message: |
2.3.6 ASTM Publications.
<table>
<thead>
<tr>
<th>Standard Number</th>
<th>Standard Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASTM E 2074</td>
<td>Standard Test Method for Fire Tests of Door Assemblies, Including Positive</td>
</tr>
<tr>
<td></td>
<td>Pressure Testing of Side-Hinged and Pivoted Swinging Door Assemblies, 2000e1</td>
</tr>
<tr>
<td></td>
<td>(withdrawn 2007).</td>
</tr>
<tr>
<td>ASTM E 2174</td>
<td>Standard Practice for On-Site Inspection of Installed Fire Stops, 2010a e1.</td>
</tr>
<tr>
<td>ASTM E 2393</td>
<td>Standard Practice for On-Site Inspection of Installed Fire Resistive Joint</td>
</tr>
<tr>
<td>ASTM E 2404</td>
<td>Standard Practice for Specimen Preparation and Mounting of Textile, Paper or</td>
</tr>
<tr>
<td></td>
<td>Polymeric (Including Vinyl) Wall or Ceiling Coverings, and of Facings and Wood</td>
</tr>
<tr>
<td></td>
<td>Veneers Intended to be Applied on Site Over a Wood Substrate, to Assess</td>
</tr>
<tr>
<td>ASTM E 2573</td>
<td>Standard Practice for Specimen Preparation and Mounting of Site-Fabricated</td>
</tr>
<tr>
<td>ASTM E 2599</td>
<td>Standard Practice for Specimen Preparation and Mounting of Reflective</td>
</tr>
<tr>
<td></td>
<td>Insulation, Radiant Barrier, and Vinyl Stretch Ceiling Materials for Building</td>
</tr>
<tr>
<td></td>
<td>Applications to Assess Surface Burning Characteristics, 2011.</td>
</tr>
<tr>
<td>ASTM E 2652</td>
<td>Standard Test Method for Behavior of Materials in a Tube Furnace with a Cone-</td>
</tr>
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</table>

**Submitter Information Verification**

- **Submitter Full Name:** Gregory Harrington
- **Organization:** National Fire Protection Assoc
- **Street Address:**
- **City:**
- **State:**
- **Zip:**
- **Submittal Date:** Mon Jul 29 16:27:51 EDT 2013

**Committee Statement**

- **Committee Statement:** Added ref to ASTM E 2404 (12.5.5.1); ASTM E 2599 (12.5.5.9); deleted reference to ASTM D 1998 per PC-37 and PC-38.
- **Response Message:** Public Comment No. 34-NFPA 1-2013 [Section No. 2.3.6]
Second Revision No. 551-NFPA 1-2013 [ Section No. 2.3.7 ]

2.3.7 CGA Publications.
Compressed Gas Association, 4221 Walney Road, 5th Floor, Chantilly, VA 20151-2923.


CGA P-1, Safe Handling of Compressed Gases in Containers, 2008.


CGA P-20, Standard for the Classification of Toxic Gas Mixtures, 2009.


Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assc
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Fri Aug 30 16:10:32 EDT 2013

Committee Statement

Committee Statement: Added ANSI/CGA G-13 (ref'd in 63.3.8.2).
Response Message:
2.3.10 IEC Publication
International Electrotechnical Commission, 3, rue de Varembé, P.O. Box 131, CH-1211 Geneva 20, Switzerland.

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Mon Jul 22 10:59:06 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
Second Revision No. 545-NFPA 1-2013 [Section No. 2.3.9]

2.3.9 FMGR Publications.
FM Global Research, 1301 Atwood Avenue, P.O. Box 7500, Johnston, RI 02919.


Approval Standard for Plastic Plugs for Steel Drums, Class Number 6083, October 2006.


Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Fri Aug 23 17:18:48 EDT 2013

Committee Statement

Committee Statement: Added FM Approval Standard 6921 (20.4.2.5.8).
Response Message:
2.3.11 IIAR Publications.
International Institute of Ammonia Refrigeration, 1001 N. Fairfax Street, Suite 503, Alexandria, VA 22314.


Submitter Information Verification

Submitter Full Name: Kristin Bigda
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Sat Oct 26 17:16:38 EDT 2013

Committee Statement

Committee Statement: Reference was added to Chapter 53.
Response Message:
2.3.17 UL Publications.
Underwriters Laboratories Inc., 333 Pfingsten Road, Northbrook, IL 60062-2096.
UL 2245, Standard for Below-Grade Vaults for Flammable Liquid Storage Tanks, 2006.

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Fri Aug 23 16:53:57 EDT 2013

Committee Statement

Committee Statement: Correction of title of ANSI/UL 9; correction of ANSI/UL 900; added ANSI/UL 2586 (42.5.6.1); correction of ANSI/UL 1313.
Second Revision No. 161-NFPA 1-2013 [Section No. 2.3.19]

2.3.20  U.S. Government Publications.
          Interstate Commerce Commission (ICC), Rules for Construction of Unfired Pressure Vessels,
          U.S. Department of Transportation, Washington, DC.
          Title 16, Code of Federal Regulations, Parts 1500 and 1507, U.S. Consumer Product Safety
          Commission.
          Title 16, Code of Federal Regulations, Part 1632, "Standard for the Flammability of Mattresses and
          Title 18, United States Code, "Importation, Manufacture, Distribution and Storage of Explosive Materials,
          1970."
          Title 21, Code of Federal Regulations, Part 210, "Processing, Packing, or Holding Drugs; General."
          Title 21, Code of Federal Regulations, Part 211, "Current Good Manufacturing Practice for Finished
          Pharmaceuticals."
          Title 27, Code of Federal Regulations, Part 555, Bureau of Alcohol, Tobacco, Firearms, and Explosives,
          U.S. Department of Justice.
          U.S. Department of Labor.
          Title 49, Code of Federal Regulations, Part 100 to end, U.S. Department of Transportation.

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Mon Jul 22 12:11:32 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
2.4 References for Extracts in Mandatory Sections.
|---|

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Fri Jul 19 09:26:09 EDT 2013

Committee Statement

Committee Statement: Editorial - NFPA 1600 extracts deleted.
Response Message:
3.3.14.4 Fire Area.
An area of a building separated from the remainder of the building by construction having a fire resistance of at least 1 hour and having all communicating openings properly protected by an assembly having a fire resistance rating of at least 1 hour. [30,2012 2015]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Mon Jul 22 15:35:17 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
3.3.20.2* Densely Packed Baled Cotton.

Cotton, made into banded bales, with a packing density of at least 22 lb/ft$^3$ (360 kg/m$^2$), and dimensions complying with the following: a length of 55 in. (ca. 1400 mm ± 20 mm), a width of 21 in. (ca. 530 mm ± 20 mm), and a height of 27.6 in. to 35.4 in. (700 mm to 900 mm).

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Fri Aug 23 16:32:15 EDT 2013

Committee Statement

Committee Statement: Editorial correction.
Response Message:
3.3.30.9 Satellite.
A structure that can be adjacent to but separated from the airport terminal building, accessible aboveground or through subway passages, and used to provide flight service operations, such as passenger check-in, waiting rooms, food service, enplaning or deplaning, etc. [415, 2013]
3.3.47 Classification of Occupancy Hazards for Portable Fire Extinguishers.

3.3.47.1 Extra Hazards.
Extra hazard occupancies shall be classified as locations where the quantity and combustibility of Class A combustible material are high or where high amounts of Class B flammables are present and rapidly developing fires with high rates of heat release are expected. These occupancies consist of fire hazards involved with the storage, packaging, handling, or manufacture of Class A combustibles, and/or the total quantity of Class B flammables expected to be present is more than 5 gal (18.9 L) in any room or area. \[10, 2013\]

3.3.47.2 Light Hazards.
Light hazard occupancies shall be classified as locations where the quantity and combustibility of Class A combustibles and Class B flammables are low and fires with relatively low rates of heat release are expected. These occupancies consist of fire hazards having normally expected quantities of Class A combustible furnishings, and/or the total quantity of Class B flammables typically expected to be present is less than 1 gal (3.8 L) in any room or area. \[10, 2013\]

3.3.47.3 Ordinary Hazards.
Ordinary hazard occupancies shall be classified as locations where the quantity and combustibility of Class A combustible materials and Class B flammables are moderate and fires with moderate rates of heat release are expected. These occupancies consist of fire hazards that only occasionally contain Class A combustible materials beyond normal anticipated furnishings, and/or the total quantity of Class B flammables typically expected to be present is from 1 gal to 5 gal (3.8 L to 18.9 L) in any room or area. \[10, 2013\]
Second Revision No. 597-NFPA 1-2013 [ New Section after 3.3.48 ]

3.3.47* Cleaning Media.
Materials used to clean piping systems. [55, 2013]

Supplemental Information

<table>
<thead>
<tr>
<th>File Name</th>
<th>Description</th>
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<tr>
<td>SR-597_A.3.3.49_Cleaning_Media_102813.1382968101100_1_.doc</td>
<td>Annex A text for new definition of &quot;Cleaning Media.&quot;</td>
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Submitter Information Verification

Submitter Full Name: Kristin Bigda
Organization: National Fire Protection Assoc
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Fri Oct 25 14:43:04 EDT 2013

Committee Statement

A.3.3.XX Cleaning Media.
Cleaning methods that incorporate chemical washing techniques can include the use of chemical substances, usually liquid, capable of dissolving or dispersing a foreign substance or contaminants and can include techniques such as rinsing, heating, steaming, or vacuum with such techniques applied either individually or in combination with others. Air, inert gas, steam and water are acceptable cleaning media. [55: A.3.3.21]
## Section No. 3.3.74.2

**Closed Container.**

A container as herein defined, so sealed by means of a lid or other device that neither liquid nor vapor will escape from it at ordinary temperatures.  

<table>
<thead>
<tr>
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<td>2012-03-30</td>
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### Submitter Information Verification

- **Submitter Full Name:** Gregory Harrington
- **Organization:** National Fire Protection Assoc
- **Street Address:**
- **City:**
- **State:**
- **Zip:**
- **Submittal Date:** Thu Sep 26 14:08:37 EDT 2013

### Committee Statement

- **Committee Statement:** Extract update.
- **Response Message:**
A material, or mixture of materials, that (1) is a gas at 68°F (20°C) or less at 14.7 psia (101.3 kPa) of pressure, and (2) has a boiling point of 68°F (20°C) or less at 14.7 psia (101.3 kPa) that is either liquefied, nonliquefied, or in solution, except those gases that have no other health or physical hazard properties are not considered to be compressed until the pressure in the packaging exceeds 41 psia (282.5 kPa) at 68°F (20°C). an absolute pressure of 40.6 psi (280 kPa) at 68°F (20°C). [55, 2013]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Mon Jul 15 08:44:45 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
3.3.191.2* Apartment Building.
A building or portion thereof containing three or more dwelling units with independent cooking and
bathroom facilities. [5000 101, 2015]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Thu Aug 22 12:53:41 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
3.3.191.4 Bulk Merchandising Retail Building.
A building in which the sales area includes the storage of combustible materials on pallets, in solid piles, or in racks in excess of 12 ft (3660 mm) in storage height. [5000 101, 2015]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Thu Aug 22 12:58:08 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
Second Revision No. 484-NFPA 1-2013 [Section No. 3.3.191.5]

3.3.191.5* Business Occupancy.
An occupancy used for the transaction of business other than mercantile. [5000 101, 2015]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Thu Aug 22 12:59:04 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
3.3.191.7* Day-Care Occupancy.
An occupancy in which four or more clients receive care, maintenance, and supervision, by other than their relatives or legal guardians, for less than 24 hours per day. [5000 101, 2015]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Thu Aug 22 13:00:02 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
An occupancy used to house one or more persons under varied degrees of restraint or security where such occupants are mostly incapable of self-preservation because of security measures not under the occupants' control. [5000 701, 2015]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Thu Aug 22 13:01:44 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
3.3.191.8.1 Detention and Correctional Use Condition.

For application of the life safety requirements in Section 20.7, the resident user category is divided into the five use conditions.

3.3.191.8.1.1 Use Condition I — Free Egress.

Free movement is allowed from sleeping areas and other spaces where access or occupancy is permitted to the exterior via means of egress that meet the requirements of NFPA 101, Life Safety Code. \[101:22.1.2.1.1\]

3.3.191.8.1.2 Use Condition II — Zoned Egress.

Free movement is allowed from sleeping areas and any other occupied smoke compartment to one or more other smoke compartments. \[101:22.1.2.1.2\]

3.3.191.8.1.3 Use Condition III — Zoned Impeded Egress.

Free movement is allowed within individual smoke compartments, such as within a residential unit comprised of individual sleeping rooms and a group activity space, with egress impeded by remote-controlled release of means of egress from such a smoke compartment to another smoke compartment. \[101:22.1.2.1.3\]

3.3.191.8.1.4 Use Condition IV — Impeded Egress.

Free movement is restricted from an occupied space, and remote-controlled release is provided to allow movement from all sleeping rooms, activity spaces, and other occupied areas within the smoke compartment to another smoke compartment. \[101:22.1.2.1.4\]

3.3.191.8.1.5 Use Condition V — Contained.

Free movement is restricted from an occupied space, and staff-controlled manual release at each door is provided to allow movement from all sleeping rooms, activity spaces, and other occupied areas within the smoke compartment to another smoke compartment. \[101:22.1.2.1.5\]
3.3.191.10* Educational Occupancy.
An occupancy used for educational purposes through the twelfth grade by six or more persons for 4 or more hours per day or more than 12 hours per week. [5000 101, 2015]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Thu Aug 22 13:02:44 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
3.3.191.11* Health Care Occupancy.
An occupancy used to provide medical or other treatment or care simultaneously to four or more patients on an inpatient basis, where such patients are mostly incapable of self-preservation due to age, physical or mental disability, or because of security measures not under the occupants' control. [5001.101, 2015]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Thu Aug 22 13:03:26 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
3.3.191.14*  Industrial Occupancy.
An occupancy in which products are manufactured or in which processing, assembling, mixing, packaging, finishing, decorating, or repair operations are conducted. [5000 101, 2015]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submital Date: Thu Aug 22 13:04:48 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
An occupancy used for the display and sale of merchandise. [5000 101, 2015]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Thu Aug 22 13:06:12 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
That portion of a property where motor fuels are stored and dispensed from fixed equipment into the fuel tanks of motor vehicles or marine craft or into approved containers, including all equipment used in connection therewith. [30A,2012 2015 ]
3.3.191.19.1 Fleet Vehicle Motor Fuel Dispensing Facility.
A motor fuel dispensing facility at a commercial, industrial, governmental, or manufacturing property
where motor fuels are dispensed into the fuel tanks of motor vehicles that are used in connection with the
business or operation of that property by persons within the employ of such business or operation.

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Thu Sep 26 14:14:03 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
3.3.191.19.2 Marine Motor Fuel Dispensing Facility.
A motor fuel dispensing facility at or adjacent to shore, a pier, a wharf, or a floating dock where motor fuels are dispensed into the fuel tanks of marine craft. [30A, 2012 2015]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Thu Sep 26 14:15:19 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
3.3.191.19.3*  Motor Fuel Dispensing Facility Located Inside a Building.
That portion of a motor fuel dispensing facility located within the perimeter of a building or building structure that also contains other occupancies.  [30A,2012 2015]

Submitter Information Verification

Submitter Full Name:  Gregory Harrington
Organization:  National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date:  Thu Sep 26 14:16:06 EDT 2013

Committee Statement

Committee Statement:  Extract update.
Response Message:
3.3.191.21 Nursing Home.
A building or portion of a building used on a 24-hour basis for the housing and nursing care of four or more persons who, because of mental or physical incapacity, might be unable to provide for their own needs and safety without the assistance of another person. [5000 101, 2015]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Thu Aug 22 13:08:17 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
3.3.191.22.1 One- and Two-Family Dwelling Unit.
A building that contains not more than two dwelling units with independent cooking and bathroom facilities. [5000 101, 2015]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Thu Aug 22 13:11:00 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
### Second Revision No. 577-NFPA 1-2013 [ Section No. 3.3.191.23.3 ]

<table>
<thead>
<tr>
<th>3.3.191.23.3 Open Parking Structure.</th>
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</thead>
<tbody>
<tr>
<td>A parking structure that meets the requirements of 30.8.1.3 of Section 5.5 of NFPA 5000 88A.</td>
</tr>
<tr>
<td>[5000 88A, 2015]</td>
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</table>

#### Submitter Information Verification

- **Submitter Full Name:** Gregory Harrington
- **Organization:** National Fire Protection Assoc
- **Street Address:**
- **City:**
- **State:**
- **Zip:**
- **Submittal Date:** Fri Sep 27 09:19:24 EDT 2013

#### Committee Statement

- **Committee Statement:** Extract update.
- **Response Message:**
3.3.191.25* Residential Board and Care Occupancy.
An occupancy used for lodging and boarding of four or more residents, not related by blood or marriage to the owners or operators, for the purpose of providing personal care services. [5000 101, 2015]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Thu Aug 22 13:37:55 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
An occupancy used primarily for the storage or sheltering of goods, merchandise, products, or vehicles.

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Thu Aug 22 13:39:04 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
3.3.192 Occupant Load.
The total number of persons that might occupy a building or portion thereof at any one time. [5000 101
2015]

Submitter Information Verification
Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Thu Aug 22 13:40:02 EDT 2013

Committee Statement
Committee Statement: Extract update.
Response Message:
Second Revision No. 598-NFPA 1-2013 [ New Section after 3.3.219 ]

3.3.220  Purging.
A method used to free the internal volume of a piping system of unwanted contents that results in the existing contents being removed or replaced. [55, 2013]

Submitter Information Verification

Submitter Full Name: Kristin Bigda
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Fri Oct 25 14:49:01 EDT 2013

Committee Statement

Response Message:
3.3.231* Safety Can.
A listed container of not more than 5.3 gal (20 L) capacity having a screen or strainer in each fill and pour opening, and having a spring-closing lid and spout cover, and so designed that it will safely relieve internal pressure when subjected to fire exposure. [30, 2015]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submit Date: Mon Jul 22 15:48:40 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
3.3.264.4* Bulk Oxygen System.

An assembly of equipment, such as oxygen storage containers, pressure regulators, pressure relief devices, vaporizers, manifolds, and interconnecting piping, that has a storage capacity of more than 20,000 scf (566 Nm$^3$) of oxygen and that terminates at the source valve. [55, 2013]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Mon Jul 15 08:57:43 EDT 2013

Committee Statement

Committee Statement: Editorial corrections.
Response Message:
3.3.265.1 Aboveground Storage Tank.
A horizontal or vertical tank that is listed and intended for fixed installation, without backfill, above or below grade and is used within the scope of its approval or listing. [30A, 2012 2015]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Thu Sep 26 14:17:26 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
3.3.265.4* Portable Tank.

Any vessel having a liquid capacity over 60 gal (230 L) intended for storing liquids and not intended for fixed installation. [30, 22.2.3 2015]
3.3.265.5 Secondary Containment Tank.
A tank that has an inner and outer wall with an interstitial space (annulus) between the walls and that has
a means for monitoring the interstitial space for a leak. [30, 2012 2015]
3.3.265.7 Storage Tank.
Any vessel having a liquid capacity that exceeds 60 gal (230 L), is intended for fixed installation, and is not used for processing. [30, 2012 2015]
Second Revision No. 496-NFPA 1-2013 [ Section No. 4.5.9 ]

4.5.9 Noncombustible Material.
A material that complies with any one of the following shall be considered a noncombustible material:

1. The material, 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.

The material is reported as passing ASTM E 136, Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750 Degrees C.

The material 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. [ 5000: 7.1.4.1.1]

4.5.9.1 A material that complies with any one of the following shall be considered a noncombustible material:

(1) The material, 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.

(2) The material is reported as passing ASTM E 136, Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750 Degrees C.

(3) The material 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. [ 5000: 7.1.4.1.1]

4.5.9.2 Where the term, limited-combustible, is used in this Code, it shall also include the term noncombustible. [ 5000: 7.1.4.1.2]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address: City: State: Zip:
Submittal Date: Thu Aug 22 13:48:33 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
10.4 Maintenance, Inspection, and Testing.

Also see 4.5.8.

10.4.1 Whenever or wherever any device, equipment, system, condition, arrangement, level of protection, fire-resistive construction, or any other feature is required for compliance with the provisions of this Code, such device, equipment, system, condition, arrangement, level of protection, fire-resistive construction, or other feature shall thereafter be continuously maintained. Maintenance shall be provided in accordance with applicable NFPA requirements or requirements developed as part of a performance-based design, or as directed by the AHJ. [101 4.6.12.1]

10.4.2 No existing life safety feature shall be removed or reduced where such feature is a requirement for new construction. [101 4.6.12.2]

10.4.3 Existing life safety features obvious to the public, if not required by the Code, shall be either maintained or removed. [101 4.6.12.3]

10.4.4 Any device, equipment, system, condition, arrangement, level of protection, fire-resistive construction, or any other feature requiring periodic testing, inspection, or operation to ensure its maintenance shall be tested, inspected, or operated as specified elsewhere in this Code or as directed by the AHJ. [101 4.6.12.4]

10.4.5 Maintenance, inspection, and testing shall be performed under the supervision of a responsible person who shall ensure that testing, inspection, and maintenance are made at specified intervals in accordance with applicable NFPA standards or as directed by the AHJ. [101 4.6.12.5]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Fri Jul 26 14:57:03 EDT 2013

Committee Statement

Committee Statement: Editorial - duplicate text already extracted in 4.5.8.
Response Message:
10.14.3.5.2 Facility Management and Operational Plans.
Facility management and operational plans shall address the following:

1. Best practices adopted or recognized
2. Emergency plans
3. Evacuation plans
4. Shelter-in-place plans, including capacities and protection considerations
5. Crowd management training plans
6. Safety plans, which include the following:
   a. Training plans
   b. Safety equipment plans
7. Fire alarm, smoke system protocol and testing plans
8. First aid or medical treatment plans, which include the following:
   a. Defined levels of service
   b. Standing orders adopted
   c. Supply and equipment plan
9. Housekeeping plans – biological, medical, hazardous materials cleaning
10. Emergency communication plans, which include the following:
    a. Chain of authority and incident command system employed
    b. Contact information for the following:
      i. Venue personnel
      ii. Emergency management and response organizations (e.g., fire, police, medical, utility, transportation, key stakeholders)
    c. Communication systems
    d. Standard announcement for incidents or emergency situations
11. Risk and threat assessment for venue and surrounding area for the following:
    a. Severe weather
    b. Hazardous materials
    c. Terrorism
    d. Hostile intruder
12. Operating procedures and protocols for risks, such as the following:
    a. Severe weather preparedness and monitoring plans
    b. Hazardous materials incidence response plans
    c. Terrorism response plans
    d. Hostile intruder response plans
13. First responder response/arrival routes plans
14. Alcohol management plans
15. Food safety plans
16. Rigging and temporary performance structure, which includes the following:
    a. Design and safety review plans
    b. Emergency action plans
17. Chemical and hazardous materials information and data
Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submital Date: Fri Jul 26 15:09:21 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
Section No. 10.19.3.2.1

10.19.3.2.1
The clearance between the deflector and the top of storage shall be permitted to be less than 18 in. (457 mm) where permitted by NFPA 13.

10.19.3.3
The 18 in. (457 mm) dimension shall not limit the height of shelving on a wall or shelving against a wall in accordance with 10.19.3, and 8.7.6, 8.8.6, and Section 8.9 of NFPA 13. [13: 8.6.6.2]

10.19.3.3.1
Where shelving is installed on a wall and is not directly below sprinklers, the shelves, including storage thereon, shall extend above the level of a plane located 18 in. (457 mm) below ceiling sprinkler deflectors. [13: 8.6.6.2.1]

10.19.3.3.2
Shelving, and any storage thereon, directly below the sprinklers shall not extend above a plane located 18 in. (457 mm) below the ceiling sprinkler deflectors. [13: 8.6.6.2.2]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Fri Jul 12 15:50:28 EDT 2013

Committee Statement

Committee Statement: Extract update. Renumber existing 10.19.3.3 as 10.19.3.4.
Response Message:
11.1.6.3.3 Emergencies and Tests.
Temporary electrical power and lighting installations shall be permitted during emergencies and for tests, experiments, and developmental work. [70:590.3(C)]
11.3.2 Number of Cars.
The number of elevator cars permitted in a hoistway shall be in accordance with 8.6.8.3 8.6.9.4 of NFPA 101. [101: 9.4.4]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submit Date: Fri Jul 26 15:34:26 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
11.3.3* Elevator Machine Rooms.

Elevator machine rooms that contain solid-state equipment for elevators, other than existing elevators, having a travel distance exceeding 50 ft (15 m) above the level of exit discharge or exceeding 30 ft (9150 mm 9.1 m) below the level of exit discharge shall be provided with independent ventilation or air-conditioning systems to maintain temperature during fire fighters’ emergency operations for elevator operation (see 11.3.1). The operating temperature shall be established by the elevator equipment manufacturer's specifications. When standby power is connected to the elevator, the machine room ventilation or air-conditioning shall be connected to standby power. [101: 9.4.5]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Fri Jul 26 15:36:38 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
11.12.1 Photovoltaic systems shall be in accordance with Section 11.10, Section 11.12 and NFPA 70.

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Wed Sep 04 15:40:31 EDT 2013

Committee Statement

Committee Statement: Editorial correction.
Response Message:
12.3.2.1 Inspection of firestop systems of the types tested in accordance with ASTM E 814, Standard Test Method for Fire Tests of Through-Penetration Fire Stops, or ANSI/UL 1479, Standard for Fire Tests of Through-Penetration Firestops, shall be conducted in accordance with ASTM E 2174, Standard Practice for On-Site Inspection of Installed Fire Stops. [5000:40.9.1]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Thu Aug 22 14:03:10 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
12.3.2.2

12.4.6.3 Replacement.
Where it is necessary to replace fire doors, shutters, windows or their frames, glazing materials, hardware, and closing mechanisms, replacements shall meet the requirements for fire protection and shall be installed and tested as required by this section for new installations. [80:5.1.4.3]
12.4.6.6.2.4
A record of all inspections and testing shall be provided that includes, but is not limited to, the following information:

1. Date of inspection
2. Name of facility
3. Address of facility
4. Name of person(s) performing inspections and testing
5. Company name and address of inspecting company
6. Signature of inspector of record
7. Individual record of each inspected and tested fire door assembly
8. Opening identifier and location of each inspected and tested fire door assembly
9. Type and description of each inspected and tested fire door assembly
10. Verification of visual inspection and functional operation
11. Listing of deficiencies in accordance with Sections 5.2.3, 5.3, and 5.4 of NFPA 80: 12.4.6.3, 12.4.6.7, and 12.4.6.8.

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Mon Jul 15 15:42:44 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
Acceptance testing of fire door and window assemblies shall be performed by a qualified person with knowledge and understanding of the operating components of the type of assembly being subject to testing. [80: 5.2.3.1]
### Second Revision No. 95-NFPA 1-2013 [ Section No. 12.4.6.6.4.2 ]

<table>
<thead>
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<th>12.4.6.6.4.2</th>
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<tr>
<td>As a minimum, the provisions of 5.2.3 12.4.6.6.3 shall be included in the periodic inspection and testing procedure. [80:5.2.4.2]</td>
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</table>

#### Submitter Information Verification

<table>
<thead>
<tr>
<th>Submitter Full Name:</th>
<th>Gregory Harrington</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organization:</td>
<td>National Fire Protection Assoc</td>
</tr>
<tr>
<td>Street Address:</td>
<td></td>
</tr>
<tr>
<td>City:</td>
<td></td>
</tr>
<tr>
<td>State:</td>
<td></td>
</tr>
<tr>
<td>Zip:</td>
<td></td>
</tr>
<tr>
<td>Submittal Date:</td>
<td>Mon Jul 15 15:50:00 EDT 2013</td>
</tr>
</tbody>
</table>

#### Committee Statement

<table>
<thead>
<tr>
<th>Committee Statement:</th>
<th>Extract update.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Response Message:</td>
<td></td>
</tr>
</tbody>
</table>
12.5.2.1  
Classification of interior finish materials shall be in accordance with tests made under conditions simulating actual installations, provided that the AHJ shall be permitted to establish the classification of any material on which classification by a rating by a standard test is not available, unless otherwise provided in 12.5.2.2 or 12.5.2.4 [101:10.2.1.1]

Submitter Information Verification

Submitter Full Name: Gregory Harrington  
Organization: National Fire Protection Assoc  
Street Address:  
City:  
State:  
Zip:  
Submittal Date: Mon Jul 29 16:03:50 EDT 2013

Committee Statement

Committee Statement: Extract update.  
Response Message:
12.5.2.3

If a material having a total thickness of less than \( \frac{1}{28} \) in. (0.9 mm) is being introduced on, applied to a surface that is not noncombustible or not limited-combustible, the provisions of 12.5.2.1 shall apply. \( [101 : 10.2.1.3] \)

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Mon Jul 29 16:07:50 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
Section No. 12.5.2.4

Approved existing installations of materials applied directly to the surface of walls and ceilings in a total thickness of less than $\frac{1}{28}$ in. (0.9 mm) shall be permitted to remain in use, and the provisions of 10.2.2, 12.5.3 through 12.5.4.7.2 of NFPA 101 shall not apply. [101: 10.2.1.4]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Mon Jul 29 16:11:16 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
12.5.3.1
Requirements for interior wall and ceiling finish shall apply as follows:

(1) Where specified elsewhere in this Code for specific occupancies in Chapter 20 and NFPA 101 (see Chapter 7 and Chapter 11 through Chapter 43 of NFPA 101)

(2) As specified in 10.2.3 through 10.2.6 of NFPA 101 12.5.7.

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Mon Jul 29 16:14:41 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
12.5.5.1* 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 Class A when 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, using the specimen preparation and mounting method of ASTM E 2404, Standard Practice for Specimen Preparation and Mounting of Textile, Paper or Polymeric (Including Vinyl) Wall or Ceiling Coverings, and of Facings and Wood Veneers Intended to be Applied on Site Over a Wood Substrate, to Assess Surface Burning Characteristics (see 10.2.3.4 of NFPA 101 12.5.4.4), 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 Class A when tested in accordance with ASTM E 84 or ANSI/UL 723, using the specimen preparation and mounting method of ASTM E 2404 (see 10.2.3.4 of NFPA 101 12.5.4.4), 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 Class A when tested in accordance with ASTM E 84 or ANSI/UL 723, using the specimen preparation and mounting method of ASTM E 2404 (see 10.2.3.4 of NFPA 101 12.5.4.4), 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 material meeting the requirements of Class A when tested in accordance with ASTM E 84 or ANSI/UL 723 (see 10.2.3.4 of NFPA 101 see 12.5.4.4), 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 or Expanded Vinyl Wall Coverings on Full Height Panels and Walls. (See 12.5.4.7.)

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 12.5.4.7.)
12.5.5.2* 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 Class A when 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, using the specimen preparation and mounting method of ASTM E 2404, Standard Practice for Specimen Preparation and Mounting of Textile, Paper, or Polymeric (Including Vinyl) Wall or Ceiling Coverings, and of Facings and Wood Veneers Intended to be Applied on Site Over a Wood Substrate, to Assess Surface Burning Characteristics (see 10.2.3.4 of NFPA 101 12.5.4.4), 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 Class A when tested in accordance with ASTM E 84 or ANSI/UL 723, using the specimen preparation and mounting method of ASTM E 2404 (see 10.2.3.4 of NFPA 101 12.5.4.4), 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 Class A when tested in accordance with ASTM E 84 or ANSI/UL 723, using the specimen preparation and mounting method of ASTM E 2404 (see 10.2.3.4 of NFPA 101 12.5.4.4), 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, when tested in accordance with ASTM E 84 or ANSI/UL 723 (see 10.2.3.4 of NFPA 101 12.5.4.4), 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 or Expanded Vinyl Wall Coverings on Full Height Panels and Walls. (See 12.5.4.7.)

6. 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 12.5.4.7.)

[101 : 10.2.4.2]
12.5.5.3.1.1
One of the following 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 of NFPA 101 12.5.4.7.2.

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. ANSI/FM 4880, Approval Standard for Class 1 American National Standard for Evaluating 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

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address: 
City: 
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Submittal Date: Mon Jul 29 16:35:21 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
12.5.5.3.1.2
The tests shall be performed on a finished foamed plastic assembly related to the actual end-use configuration, including any cover or facing, and at the maximum thickness intended for use. [101:10.2.4.3.1.2]

12.5.5.3.1.3
New installations of cellular or foamed plastic materials tested in accordance with ANSI/UL 1040, Standard for Fire Test of Insulated Wall Construction, or ANSI/FM 4880, Approval Standard for Class 1 American National Standard for Evaluating 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 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) of NFPA 101. [101:10.2.4.3.1.2.3]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jul 30 10:03:57 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
Second Revision No. 216-NFPA 1-2013 [ Section No. 12.5.5.6 ]

12.5.5.6 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, *Standard Test Method for Surface Burning Characteristics of Building Materials*, or ANSI/UL 723, *Standard for Test for Surface Burning Characteristics of Building Materials* (see 12.5.4.4) 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 $\frac{1}{28}$ in. (0.9 mm). \[101: 10.2.4.6]\n
Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Mon Jul 29 16:48:09 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
12.5.5.7 Polypropylene (PP) and High-Density Polyethylene (HDPE).
Polypropylene and high-density polyethylene materials shall not be permitted as interior wall or ceiling
finish unless the material complies with the requirements of 10.2.3.7.2 of NFPA 101 - 12.5.4.7.2. The
tests shall be performed on a finished assembly and on the maximum thickness intended for use. [101:
10.2.4.7]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
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Zip:
Submittal Date: Mon Jul 29 16:50:19 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
12.5.5.8 Site-Fabricated Stretch Systems.

For new installations, site-fabricated stretch systems containing all three components described in the definition in Chapter 3 of NFPA 101 shall be tested in the manner intended for use and shall comply with the requirements of 10.2.3 or 10.2.3.2 of NFPA 101. If the materials are 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, specimen preparation and mounting shall be in accordance with ASTM E 2573, Standard Practice for Specimen Preparation and Mounting of Site-Fabricated Stretch Systems to Assess Surface Burning Characteristics. [101: 10.2.4.8]
12.5.5.9 Reflective Insulation Materials.
Reflective insulation materials shall be tested in the manner intended for use and shall comply with the requirements of 10.2.3 of NFPA 101. If the materials are 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, specimen preparation and mounting shall be in accordance with ASTM E 2599, Standard Practice for Specimen Preparation and Mounting of Reflective Insulation Materials and Radiant Barrier, and Vinyl Stretch Ceiling Materials for Building Applications to Assess Surface Burning Characteristics. [101: 10.2.4.9]
In new construction, surfaces of walls, partitions, columns, and ceilings shall be permitted to be finished with factory-applied fire-retardant coated assemblies products that have been listed and labeled to demonstrate compliance with the requirements of ASTM E 2768, Standard Test Method for Extended Duration Surface Burning Characteristics of Building Materials, on the coated surface. [101: 10.2.6.2]
### Second Revision No. 221-NFPA 1-2013 [ Section No. 12.5.9 ]

12.5.9  Automatic Sprinklers.

12.5.9.1  Unless specifically prohibited elsewhere in this Code, Other than as required in 12.5.5, where an approved automatic sprinkler system is installed in accordance with Section 13.3, 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. [101: 10.2.8.1]

12.5.9.2  Unless specifically prohibited elsewhere in this Code, Where an approved automatic sprinkler system is installed in accordance with Section 13.3, throughout the fire compartment or smoke compartment containing the interior floor finish, 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 12.5.8.2 shall apply. [101: 10.2.8.2]

### Submitter Information Verification

**Submitter Full Name:** Gregory Harrington  
**Organization:** National Fire Protection Assoc  
**Street Address:**  
**City:**  
**State:**  
**Zip:**  
**Submittal Date:** Mon Jul 29 17:00:46 EDT 2013

### Committee Statement

**Committee Statement:** Extract update.  
**Response Message:**
12.6.7.2 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 of NFPA 101 12.5.4. [101: 10.3.8.2]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Mon Jul 29 17:06:46 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jul 30 08:37:25 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
12.7.3.4

Floor fire door assemblies, shall be tested in accordance with NFPA 288, *Standard Methods of Fire Tests of Floor Fire Door Assemblies Installed Horizontally in Fire Resistance–Rated Floor Systems* [Horizontal Fire Door Assemblies Installed in Horizontal Fire Resistance–Rated Assemblies], and shall achieve a fire resistance rating not less than the assembly being penetrated. Floor fire doors assemblies shall be listed and labeled. [101: 8.3.3.4]

**Submitter Information Verification**

- **Submitter Full Name:** Gregory Harrington
- **Organization:** National Fire Protection Assoc
- **Street Address:**
- **City:**
- **State:**
- **Zip:**
- **Submittal Date:** Mon Oct 21 10:05:37 EDT 2013

**Committee Statement**

- **Committee Statement:** Extract update.
- **Response Message:**
The fire protection rating for opening protectives in fire barriers, fire-rated smoke barriers, and fire-rated smoke partitions shall be in accordance with Table 12.7.4.2, except as otherwise permitted in 12.4.7.3 or 12.4.7.4.

<table>
<thead>
<tr>
<th>Component</th>
<th>Walls and Partitions (hr)</th>
<th>Fire Door Assembly Maximum Size (in². a. b. c. d. e. f.)</th>
<th>Fire-Rated Glazing Marking Door Vision Panel</th>
<th>Minimum Side Light/Transom Assembly Rating (hr)</th>
<th>Fire-Rated Glazing Marking Side Light/Transom Panel</th>
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</thead>
<tbody>
<tr>
<td>Elevator hoistways</td>
<td>2</td>
<td>1 1 1/2 155 in² d</td>
<td>D-H-90 or D-H-W-90</td>
<td>NP</td>
<td>2</td>
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<td>1 1 1/2 155 in² d</td>
<td>D-H-60 or D-H-W-60</td>
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<td>1/4 1/3 85 in² e</td>
<td>D-W-20 or D-W-20</td>
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<td>D-H-20</td>
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<td>1 1 100 in² b</td>
<td>D-H-90 or D-H-T-90 or D-H-W-60</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>NP</td>
<td>D-H-W-120</td>
</tr>
<tr>
<td>Vertical shafts, including stairways, exits, and refuse chutes</td>
<td>2</td>
<td>1 1 1/2 Maximum size tested</td>
<td>D-H-90 or D-H-W-90</td>
<td>NP</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>NP</td>
<td>D-H-W-60</td>
</tr>
<tr>
<td>Replacement panels in existing vertical shafts</td>
<td>1/4</td>
<td>1/3 1/3 Maximum size tested</td>
<td>D-W-20 or D-W-20</td>
<td>1/3 1/3</td>
<td>D-H-20</td>
</tr>
<tr>
<td>Fire barriers</td>
<td>3</td>
<td>3 100 in² b</td>
<td>≤100 in²</td>
<td>NP</td>
<td>3</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>NP</td>
<td>D-H-W-180</td>
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</tbody>
</table>

Table 12.7.4.2 Minimum Fire Protection Ratings for Opening Protectives in Fire Resistance–Rated Assemblies and Fire-Rated Glazing Markings
<table>
<thead>
<tr>
<th>Component</th>
<th>Walls and Partitions (hr)</th>
<th>Fire Door Assemblies (hr)</th>
<th>Door Vision Panel Maximum Size (in.²)</th>
<th>Fire-Rated Glazing Marking Door Vision Panel</th>
<th>Minimum Side Light/Transom Assembly Rating (hr)</th>
<th>Fire-Rated Glazing Marking Side Light/Transom Panel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elevator hoistways</td>
<td>2</td>
<td>1 1/4</td>
<td>155 in. 2 1/2</td>
<td>D-H-90 or D-H-W-90</td>
<td>NP</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>D-H-W-120</td>
</tr>
<tr>
<td>Elevator lobby (per 7.2.13.4 of NFPA 101)</td>
<td>1/2</td>
<td>1/2</td>
<td>85 in. 2 1/2</td>
<td>D-H-20 or D-W-20</td>
<td>1/2</td>
<td>1/2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>D-H-20</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>D-W-20</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NP: Not permitted.

a: Note: 1 inch ² = 0.00064516 m ².


c: Fire-rated glazing in exterior windows shall be marked in accordance with Table 12.7.3.11.

d: See ASME A17.1, Safety Code for Elevators and Escalators, for additional information.

e: See ASTM A17.3, Safety Code for Existing Elevators and Escalators, for additional information.

f: Maximum area of individual exposed lights shall be 1296 in. ² (0.84 m ²) with no dimension exceeding 54 in. (1.37 m) unless otherwise tested. [80]: Table 4.4.5, Note b, and 80:4.4.5.1]


h: For residential board and care, see 32.2.3.1 and 33.2.3.1 of NFPA 101.

Table 12.7.4.2 Minimum Fire Protection Ratings for Opening Protectives in Fire Resistance–Rated Assemblies and Fire-Rated Glazing Markings
<table>
<thead>
<tr>
<th>Component</th>
<th>Walls and Partitions (hr)</th>
<th>Fire Door Assemblies (hr)</th>
<th>Fire Rated Glazing Marking Door Vision Panel</th>
<th>Minimum Side Light/Transom Assembly Rating (hr)</th>
<th>Fire-Rated Glazing Marking Side Light/Transom Panel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vertical shafts, including stairways, exits, and refuse chutes</td>
<td>2</td>
<td>1 1⁄2</td>
<td>Maximum size tested</td>
<td>D-H-90 or D-H-W-90</td>
<td>NP</td>
</tr>
<tr>
<td>Replacement panels in existing vertical shafts</td>
<td>1⁄2</td>
<td>1⁄2</td>
<td>Maximum size tested</td>
<td>D-20 or D-W-20</td>
<td>1⁄2</td>
</tr>
<tr>
<td>Fire barriers</td>
<td>3</td>
<td>3</td>
<td>100 in.²</td>
<td>≤ 100 in.²</td>
<td>NP</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>1 1⁄2</td>
<td>Maximum size tested</td>
<td>D-H-90 or D-H-W-90</td>
<td>NP</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>1⁄4</td>
<td>Maximum size tested</td>
<td>D-H-45 or D-H-W-45</td>
<td>1⁄4</td>
</tr>
<tr>
<td></td>
<td>1⁄2</td>
<td>1⁄3</td>
<td>Maximum size tested</td>
<td>D-20 or D-W-20</td>
<td>1⁄3</td>
</tr>
<tr>
<td>Horizontal exits</td>
<td>2</td>
<td>1 1⁄4</td>
<td>Maximum size tested</td>
<td>D-H-90 or D-H-W-90</td>
<td>NP</td>
</tr>
<tr>
<td>Horizontal exits served by bridges between buildings</td>
<td>2</td>
<td>1⁄2</td>
<td>Maximum size tested</td>
<td>D-H-45 or D-H-W-45</td>
<td>1⁄4</td>
</tr>
<tr>
<td>Exit access corridors</td>
<td>1</td>
<td>1⁄2</td>
<td>Maximum size tested</td>
<td>D-20 or D-W-20</td>
<td>1⁄4</td>
</tr>
<tr>
<td>Smoke barriers</td>
<td>1</td>
<td>1⁄2</td>
<td>Maximum size tested</td>
<td>D-20 or D-W-20</td>
<td>1⁄4</td>
</tr>
<tr>
<td>Smoke partitions</td>
<td>1⁄2</td>
<td>1⁄2</td>
<td>Maximum size tested</td>
<td>D-20 or D-W-20</td>
<td>1⁄2</td>
</tr>
</tbody>
</table>

For SI units, 1 in.² = 0.00064516 m².
NP: Not permitted.


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Materials, shall be permitted in the maximum size tested. *(See 12.7.3.7.)*

b. Fire-rated glazing in exterior windows shall be marked in accordance with Table 12.7.3.11.


e. Maximum area of individual exposed lights shall be 1296 in. $^2$ (0.84 m $^2$) with no dimension exceeding 54 in. (1.37 m) unless otherwise tested. *(80: Table 4.4.5, Note b, and 80: 4.4.5.1)*


h. For residential board and care, see 32.2.3.1 and 33.2.3.1 of NFPA 101.

*(101: Table 8.3.4.2)*

Supplemental Information

<table>
<thead>
<tr>
<th>File Name</th>
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<tr>
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</table>

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jul 30 08:55:19 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Elevator hoistways</td>
<td>2 1½</td>
<td>155 in.²</td>
<td>D-H-90 or D-H-W-90</td>
<td>NP</td>
<td>2</td>
<td>NP</td>
<td>D-H-W-120</td>
<td>NP*</td>
</tr>
<tr>
<td>1 1</td>
<td>155 in.²</td>
<td>D-H-90 or D-H-W-60</td>
<td>NP</td>
<td>1</td>
<td>NP</td>
<td>D-H-W-60</td>
<td>NP*</td>
<td>1</td>
</tr>
<tr>
<td>½ 1/3</td>
<td>85 in.²</td>
<td>D-20 or D-W-20</td>
<td>1/3</td>
<td>1/3</td>
<td>D-H-20</td>
<td>D-W-20</td>
<td>1/3</td>
<td>1/3</td>
</tr>
<tr>
<td>Elevator lobby (per 7.2.13.4 of NFPA 101)</td>
<td>1 1</td>
<td>100 in.²</td>
<td>≤100 in.²</td>
<td>D-H-T-60 or D-H-W-60</td>
<td>NP</td>
<td>1</td>
<td>NP</td>
<td>D-H-W-60</td>
</tr>
<tr>
<td>Vertical shafts (including stairways, exits, and refuse chutes)</td>
<td>2 1½</td>
<td>Maximum size tested</td>
<td>D-H-90 or D-H-W-90</td>
<td>NP</td>
<td>2</td>
<td>NP</td>
<td>D-H-W-120</td>
<td>NP*</td>
</tr>
<tr>
<td>1 1</td>
<td>Maximum size tested</td>
<td>D-H-60 or D-H-W-60</td>
<td>NP</td>
<td>1</td>
<td>NP</td>
<td>D-H-W-60</td>
<td>NP*</td>
<td>1</td>
</tr>
<tr>
<td>Replacemen t panels in existing vertical shafts</td>
<td>½ 1/3</td>
<td>Maximum size tested</td>
<td>D-20 or D-W-20</td>
<td>≤100 in.²</td>
<td>D-H-W-90</td>
<td>NP</td>
<td>1</td>
<td>NP</td>
</tr>
<tr>
<td>Fire barriers</td>
<td>3 3</td>
<td>100 in.²</td>
<td>≤100 in.²</td>
<td>D-H-180 or D-H-W-180</td>
<td>NP</td>
<td>3</td>
<td>NP</td>
<td>D-H-W-180</td>
</tr>
<tr>
<td>2 1½</td>
<td>Maximum size tested</td>
<td>D-H-90 or D-H-W-90</td>
<td>NP</td>
<td>2</td>
<td>NP</td>
<td>D-H-W-120</td>
<td>NP*</td>
<td>2</td>
</tr>
<tr>
<td>½ 1/3</td>
<td>Maximum size tested</td>
<td>D-20 or D-W-20</td>
<td>1/3</td>
<td>1/3</td>
<td>D-H-20</td>
<td>D-W-20</td>
<td>1/3</td>
<td>1/3</td>
</tr>
<tr>
<td>Horizontal exits</td>
<td>2 1½</td>
<td>Maximum size tested</td>
<td>D-H-90 or D-H-W-90</td>
<td>NP</td>
<td>2</td>
<td>NP</td>
<td>D-H-W-120</td>
<td>NP*</td>
</tr>
<tr>
<td>-----------------------------------------------------</td>
<td>---</td>
<td>-----</td>
<td>----------------------</td>
<td>---------------------</td>
<td>------</td>
<td>------</td>
<td>--------</td>
<td>--------</td>
</tr>
<tr>
<td>Exit access corridors(^a)</td>
<td>1</td>
<td>1/3</td>
<td>Maximum size tested</td>
<td>D-20 or D-W:20</td>
<td>3/4</td>
<td>3/4</td>
<td>D-H:45</td>
<td>D-H-W:20</td>
</tr>
<tr>
<td></td>
<td>¼</td>
<td>1/3</td>
<td>Maximum size tested</td>
<td>D-20 or D-W:20</td>
<td>1/3</td>
<td>1/3</td>
<td>D-H:20</td>
<td>D-H-W:20</td>
</tr>
<tr>
<td>Smoke barriers(^b)</td>
<td>1</td>
<td>1/3</td>
<td>Maximum size tested</td>
<td>D-20 or D-W:20</td>
<td>3/4</td>
<td>3/4</td>
<td>D-H:45</td>
<td>D-H-W:20</td>
</tr>
<tr>
<td>Smoke partitions(^c)</td>
<td>¼</td>
<td>1/3</td>
<td>Maximum size tested</td>
<td>D-20 or D-W:20</td>
<td>1/3</td>
<td>1/3</td>
<td>D-H:20</td>
<td>D-H-W:20</td>
</tr>
</tbody>
</table>

For SI units, 1 in. \(^2\) = 0.0064516 m\(^2\).

NP: Not permitted.


\(^b\) Fire-rated glazing in exterior windows shall be marked in accordance with Table 12.7.3.12.

\(^c\) See ASME A17.3, Safety Code for Existing Elevators and Escalators, for additional information.

\(^d\) Fire doors are not required to have a hose stream test per ANSI/UL 10B, Standard for Fire Tests of Door Assemblies; or ANSI/UL 10C, Standard for Positive Pressure Fire Tests of Door Assemblies.

\(^e\) For residential board and care, see 32.2.3.1 and 33.2.3.1 of NFPA 101.

\[^{101}\]: Table 8.3.4.2
Penetrations for cables, cable trays, conduits, pipes, tubes, combustion vents and exhaust vents, wires, and similar items to accommodate electrical, mechanical, plumbing, and communications systems that pass through a wall, floor, or floor/ceiling assembly constructed as a fire barrier shall be protected by a firestop system or device. The firestop system or device shall be tested in accordance with ASTM E 814, Standard Test Method for Fire Tests of Through Penetration Fire Stops, or ANSI/UL 1479, Standard for Fire Tests of Through-Penetration Firestops, at a minimum positive pressure differential of 0.01 in. water column (2.5 N/m²) between the exposed and the unexposed surface of the test assembly. [101: 8.3.5.1]

### Submitter Information Verification

- **Submitter Full Name:** Gregory Harrington
- **Organization:** National Fire Protection Assoc
- **Street Address:**
- **City:**
- **State:**
- **Zip:**
- **Submittal Date:** Tue Jul 30 09:56:35 EDT 2013

### Committee Statement

- **Committee Statement:** Editorial.
- **Response Message:**

---

**Page 101 of 866**
12.7.5.1.4 T Ratings.
Penetrations in fire resistance-rated horizontal assemblies shall be required to have a T rating of at least 1 hour, but not less than the fire resistance rating of the horizontal assembly, and 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 [101: 8.3.5.1.4]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
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State:
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Submittal Date: Tue Jul 30 09:59:03 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
12.8.3.6  Where a fire protection rating is specified for a smoke partition elsewhere in this Code, openings shall be protected as follows:

1. Door opening protectives shall have a fire protection rating of not less than 20 minutes where tested in accordance with NFPA 252 without hose stream test, unless otherwise specified by Chapters 11 through 42 of NFPA 101.

2. Fire windows shall comply with 8.3.3 of NFPA 101.

3. Glazing used in sidelights and transoms adjacent to 20-minute doors in 1/2-hour fire resistance-rated smoke partitions shall be tested in accordance with 8.7.6 of NFPA 101 and shall attain a minimum 20-minute fire protection rating, including hose stream. [101 : 8.4.3.6]
12.9.4.3
Latching hardware shall not be required on doors in smoke barriers unless specifically exempted by Chapters 11 through 43 of NFPA 101. [101: 8.5.4.3]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Fri Aug 23 16:56:29 EDT 2013

Committee Statement

Committee Statement: Editorial correction per source document (NFPA 101).
Response Message:
12.9.5.4.1
Air-conditioning, heating, ventilating ductwork, and related equipment, including smoke dampers and combination fire and smoke dampers, shall be installed in accordance with NFPA 90A, Standard for the Installation of Air-Conditioning and Ventilating Systems; and NFPA 90B, Standard for the Installation of Warm Air Heating and Air-Conditioning Systems; NFPA 105, Standard for Smoke Door Assemblies and Other Opening Protectives; or NFPA 80, Standard for Fire Doors and Other Opening Protectives, as applicable. [101: 8.5.5.4.1]
12.9.5.5 Access and Identification.

12.9.5.5.1 Access to the dampers shall be provided for inspection, testing, and maintenance. The access openings shall not reduce the fire resistance rating of the fire barrier assembly. [101: 8.5.5.5.1]

12.9.5.5.2 Smoke and combination fire and smoke dampers in new construction shall be provided with an approved means of access, as follows:

1. The means of access shall be large enough to allow inspection and maintenance of the damper and its operating parts.
2. The access shall not affect the integrity of fire resistance–rated assemblies or smoke barrier continuity.
3. The access openings shall not reduce the fire resistance rating of the assembly.
4. Access doors in ducts shall be tight-fitting and suitable for the required duct construction.
5. Access and maintenance shall comply with the requirements of the mechanical code. [101: 8.5.5.5.2]

12.9.5.5.3 Identification.

Access points to fire and smoke dampers in new construction shall be permanently identified by one of the following:

1. A label having letters not less than \( \frac{1}{2} \) in. (13 mm) in height and reading as follows in 12.9.5.5.3(a), (b), or (c) one of the following:
   
   
   (a) FIRE/SMOKE DAMPER
   (b) SMOKE DAMPER
   (c) FIRE DAMPER

2. Symbols as approved by the AHJ [101: 8.5.5.5.3]
In new assembly occupancies, regular stages over 1000 ft\(^2\) (93 m\(^2\)) in area and all legitimate stages shall be equipped with 1 1/2 in. (38 mm) hose lines for first aid fire fighting at each side of the stage. [\(101:12.4.5.6.12.1\)]

In existing assembly occupancies, stages over 1000 ft\(^2\) (93 m\(^2\)) in area shall be equipped with 1 1/2 in. (38 mm) hose lines for first aid fire fighting at each side of the stage. [\(101:13.4.5.6.12.1\)]

Hose connections shall be in accordance with NFPA 13, Standard for the Installation of Sprinkler Systems, unless Class II or Class III standpipes in accordance with NFPA 14 are used. [\(101:12.4.5.6.12.2; 101:13.4.5.6.12.2\)]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jul 30 14:05:15 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
13.3.1.2
Installations shall be in accordance with NFPA 13, Standard for the Installation of Sprinkler Systems; NFPA 13R, Standard for the Installation of Sprinkler Systems in Low-Rise Residential Occupancies up to and including Four Stories in Height; or NFPA 13D, Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes, as appropriate.

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Mon Oct 21 10:12:54 EDT 2013

Committee Statement

Committee Statement: Updates the title of NFPA 13R to that of the current edition.
Response Message:
13.3.1.5
Sprinkler piping serving hazardous areas as described in 13.3.1.4 shall be provided with an indicating shutoff valve, supervised in accordance with 13.3.1.8 or NFPA 13, *Standard for the Installation of Sprinkler Systems*, and installed in an accessible, visible location between the sprinklers and the connection to the domestic water supply. [101:9.7.1.3]
13.3.1.6*
In areas protected by automatic sprinklers, or an automatic water mist system, automatic heat-detection devices required by other sections of this Code shall not be required. [101:9.7.1.4]
The following practices shall be observed to provide sprinklers of other than ordinary-temperature classification unless other temperatures are determined or unless high-temperature sprinklers are used throughout, and temperature selection shall be in accordance with Table 13.3.1.9(a), Table 13.3.1.9(b), and Figure 13.3.1.9:

1. Sprinklers in the high-temperature zone shall be of the high-temperature classification, and sprinklers in the intermediate-temperature zone shall be of the intermediate-temperature classification.

2. Sprinklers located within 12 in. (305 mm) to one side or 30 in. (762 mm) above an uncovered steam main, heating coil, or radiator shall be of the intermediate-temperature classification.

3. Sprinklers within 7 ft (2.1 m) of a low-pressure blowoff valve that discharges free in a large room shall be of the high-temperature classification.

4. Sprinklers under glass or plastic skylights exposed to the direct rays of the sun shall be of the intermediate-temperature classification.

5. Sprinklers in an unventilated, concealed space, under an uninsulated roof, or in an unventilated attic shall be of the intermediate-temperature classification.

6. Sprinklers in unventilated show windows having high-powered electric lights near the ceiling shall be of the intermediate-temperature classification.

7. Sprinklers protecting commercial-type cooking equipment and ventilation systems shall be of the high- or extra high-temperature classification as determined by use of a temperature-measuring device. (See 7.10.6 of NFPA 13.)

8. Sprinklers protecting residential areas installed near specific heat sources identified in Table 13.3.1.9(c) shall be installed in accordance with Table 13.3.1.9(c).

9. Ordinary-temperature sprinklers located adjacent to a heating duct that discharges air that is less than 100°F (38°C) are not required to be separated in accordance with Table 13.3.1.9(a).

10. Sprinklers in walk-in type coolers and freezers with automatic defrosting shall be of the intermediate-temperature classification or higher. [13: 8.3.2.5]

Figure 13.3.1.9 High-Temperature and Intermediate-Temperature Zones at Unit Heaters. [13:Figure 8.3.2.5]

Table 13.3.1.9(a) Temperature Ratings of Sprinklers Based on Distance from Heat Sources

<table>
<thead>
<tr>
<th>Type of Heat Condition</th>
<th>Ordinary-Temperature Rating</th>
<th>Intermediate-Temperature Rating</th>
<th>High-Temperature Rating</th>
</tr>
</thead>
</table>
| SI units: 1 in. = 25.4 mm; 1 ft = 0.31 m.
<table>
<thead>
<tr>
<th>Type of Heat Condition</th>
<th>Ordinary-Temperature Rating</th>
<th>Intermediate-Temperature Rating</th>
<th>High-Temperature Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Heating ducts</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>(a) Above</td>
<td>More than 2 ft 6 in.</td>
<td>2 ft 6 in. or less</td>
<td></td>
</tr>
<tr>
<td>(b) Side and below</td>
<td>More than 1 ft 0 in.</td>
<td>1 ft 0 in. or less</td>
<td></td>
</tr>
<tr>
<td>(c) Diffuser</td>
<td>Any distance except as shown under Intermediate-Temperature Rating column</td>
<td>Downward discharge: Cylinder with 1 ft 0 in. radius from edge extending 1 ft 0 in. below and 2 ft 6 in. above</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Horizontal discharge: Semicylinder or cylinder with 2 ft 6 in. radius in direction of flow extending 1 ft 0 in. below and 2 ft 6 in. above</td>
<td></td>
</tr>
<tr>
<td>(2) Unit heater</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) Horizontal discharge</td>
<td>Discharge side: 7 ft 0 in. to 20 ft 0 in. radius pie-shaped cylinder (see Figure 13.3.1.8) extending 7 ft 0 in. above and 2 ft 0 in. below heater; also 7 ft 0 in. radius cylinder more than 7 ft 0 in. above unit heater</td>
<td>7 ft 0 in. radius cylinder extending 7 ft 0 in. above and 2 ft 0 in. below unit heater</td>
<td></td>
</tr>
<tr>
<td>(b) Vertical downward discharge (for sprinklers below unit heater, see Figure 13.3.1.8)</td>
<td>7 ft 0 in. radius cylinder extending upward from an elevation 7 ft 0 in. above unit heater</td>
<td>7 ft 0 in. radius cylinder extending from the top of the unit heater to an elevation 7 ft 0 in. above unit heater</td>
<td></td>
</tr>
<tr>
<td>(3) Steam mains (uncovered)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) Above</td>
<td>More than 2 ft 6 in.</td>
<td>2 ft 6 in. or less</td>
<td></td>
</tr>
<tr>
<td>(b) Side and below</td>
<td>More than 1 ft 0 in.</td>
<td>1 ft 0 in. or less</td>
<td></td>
</tr>
<tr>
<td>(c) Blowoff valve</td>
<td>More than 7 ft 0 in.</td>
<td>7 ft 0 in. or less</td>
<td></td>
</tr>
</tbody>
</table>

For SI units, 1 in. = 25.4 mm; 1 ft = 0.3048 m.

[13: Table 8.3.2.5(a)]

Table 13.3.1.9(b) Temperature Ratings of Sprinklers in Specified Locations

<table>
<thead>
<tr>
<th>Location</th>
<th>Ordinary-Temperature Rating</th>
<th>Intermediate-Temperature Rating</th>
<th>High-Temperature Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skylights</td>
<td>Glass or plastic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attics</td>
<td>Do not use</td>
<td>Ventilated or unventilated</td>
<td></td>
</tr>
<tr>
<td>Peaked roof: metal or thin boards, concealed or not concealed, insulated or uninsulated</td>
<td>Ventilated</td>
<td>Unventilated</td>
<td></td>
</tr>
<tr>
<td>Flat roof: metal, not concealed</td>
<td>Ventilated or unventilated</td>
<td>Note: For uninsulated roof, climate and insulated or uninsulated occupancy can necessitate intermediate sprinklers. Check on job.</td>
<td></td>
</tr>
<tr>
<td>Location</td>
<td>Ordinary-Temperature Rating</td>
<td>Intermediate-Temperature Rating</td>
<td>High-Temperature Rating</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>-----------------------------</td>
<td>---------------------------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>Flat roof: metal, concealed, insulated, or uninsulated</td>
<td>Ventilated</td>
<td>Unventilated</td>
<td></td>
</tr>
<tr>
<td>Show windows</td>
<td>Ventilated</td>
<td>Unventilated</td>
<td></td>
</tr>
</tbody>
</table>

Note: A check of job condition by means of thermometers might be necessary.

[13: Table 8.3.2.5(b)]

Table 13.3.1.9(c) Ratings of Sprinklers in Specified Residential Areas

<table>
<thead>
<tr>
<th>Heat Source</th>
<th>Minimum Distance from Edge of Source to Ordinary-Temperature Sprinkler</th>
<th>Minimum Distance from Edge of Source to Intermediate-Temperature Sprinkler</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>in.</td>
<td>mm</td>
</tr>
<tr>
<td>Side of open or recessed fireplace</td>
<td>36</td>
<td>914</td>
</tr>
<tr>
<td>Front of recessed fireplace</td>
<td>60</td>
<td>1524</td>
</tr>
<tr>
<td>Coal- or wood-burning stove</td>
<td>42</td>
<td>1067</td>
</tr>
<tr>
<td>Kitchen range</td>
<td>18</td>
<td>457</td>
</tr>
<tr>
<td>Wall oven</td>
<td>18</td>
<td>457</td>
</tr>
<tr>
<td>Hot air flues</td>
<td>18</td>
<td>457</td>
</tr>
<tr>
<td>Uninsulated heat ducts</td>
<td>18</td>
<td>457</td>
</tr>
<tr>
<td>Uninsulated hot water pipes</td>
<td>12</td>
<td>305</td>
</tr>
<tr>
<td>Side of ceiling- or wall-mounted hot air diffusers</td>
<td>24</td>
<td>607</td>
</tr>
<tr>
<td>Front of wall-mounted hot air diffusers</td>
<td>36</td>
<td>914</td>
</tr>
<tr>
<td>Hot water heater or furnace</td>
<td>6</td>
<td>152</td>
</tr>
<tr>
<td>Light fixture:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 W–250 W</td>
<td>6</td>
<td>152</td>
</tr>
<tr>
<td>250 W–499 W</td>
<td>12</td>
<td>305</td>
</tr>
</tbody>
</table>

[13: Table 8.3.2.5(c)]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Fri Jul 12 16:02:24 EDT 2013

Committee Statement

Committee Statement: Extract update. (Only change is addition of "Temperature" to title of Table 13.3.1.9(b).
Response Message:
13.3.2.7.5 Stages.
Every stage shall be protected by an approved, supervised automatic sprinkler system in compliance with Section 13.3. [101:12.4.5.10 12.4.6.10]

13.3.2.7.5.1 Protection shall be provided throughout the stage and in storerooms, workshops, permanent dressing rooms, and other accessory spaces contiguous to stages. [101:12.4.5.6.10.1]

13.3.2.7.5.2 Sprinklers shall not be required for stages 1000 ft² (93 m²) or less in area and 50 ft (15 m) or less in height where the following criteria are met:

(1) Curtains, scenery, or other combustible hangings are not retractable vertically.

(2) Combustible hangings are limited to borders, legs, a single main curtain, and a single backdrop. [101:12.4.5.10.2]

13.3.2.7.5.3 Sprinklers shall not be required under stage areas less than 48 in. (1220 mm) in clear height that are used exclusively for chair or table storage and lined on the inside with 5/8 in. (16 mm) Type X gypsum wallboard or the approved equivalent. [101:12.4.5.6.10.3]
13.3.2.8.5 Stages.
Every stage shall be protected by an approved automatic sprinkler system in compliance with Section 13.3. [101:13.4.5.6.10]

13.3.2.8.5.1
Protection shall be provided throughout the stage and in storerooms, workshops, permanent dressing rooms, and other accessory spaces contiguous to such stages. [101:13.4.5.6.10.1]

13.3.2.8.5.2
Sprinklers shall not be required for stages 1000 ft\(^2\) (93 m\(^2\)) or less in area where the following criteria are met:

1. Curtains, scenery, or other combustible hangings are not retractable vertically.
2. Combustible hangings are limited to borders, legs, a single main curtain, and a single backdrop. [101:13.4.6.10.2]

13.3.2.8.5.3
Sprinklers shall not be required under stage areas less than 48 in. (1220 mm) in clear height that are used exclusively for chair or table storage and lined on the inside with \(\frac{5}{8}\) in. (16 mm) Type X gypsum wallboard or the approved equivalent. [101:13.4.5.6.10.3]
Second Revision No. 238-NFPA 1-2013 [Sections 13.3.2.12.2, 13.3.2.12.3]

13.3.2.12.2
All high-rise buildings containing health care occupancies shall be protected throughout by an approved, supervised automatic sprinkler system installed in accordance with Section 13.3 within 12 years of the adoption of this Code, except as otherwise provided in 13.3.2.12.3 or 13.3.2.12.4. [101:19.4.2.1]

13.3.2.12.3
Where a jurisdiction adopts this edition of the Code and previously adopted the 2009 edition, the sprinklering required by 13.3.2.12.2 shall be installed within 9 years of the adoption of this Code. [101:19.4.2.2]

13.3.2.12.4
Where a jurisdiction adopts this edition of the Code and previously adopted the 2009 edition, the sprinklering required by 13.3.2.12.2 shall be installed within 6 years of the adoption of this Code. [101:19.4.2.3]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Tue Jul 30 15:33:05 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
13.3.2.15.1
All buildings shall be protected throughout by an approved, supervised automatic sprinkler system in accordance with 13.3.2.15.2. [101:28.3.5.1]
13.3.2.15.2
Where an automatic sprinkler system is installed, either for total or partial building coverage, the system shall be in accordance with Section 13.3, as modified by 13.3.2.15.3. In buildings four or fewer stories above grade plane, systems in accordance with NFPA 13R shall be permitted. [101:28.3.5.2]

13.3.2.15.3
The provisions for draft stops and closely spaced sprinklers in NFPA 13 shall not be required for openings complying with 8.6.9.1 of NFPA 101 where the opening is within the guest room or guest suite. [101:28.3.5.3.4]

Submitter Information Verification
Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Mon Oct 21 09:58:19 EDT 2013

Committee Statement
Committee Statement: Extract update.
Response Message:
Second Revision No. 240-NFPA 1-2013 [ Section No. 13.3.2.19.2 ]

13.3.2.19.2
Where an automatic sprinkler system is required or is used as an alternative method of protection, either for total or partial building coverage, the system shall be in accordance with Section 13.3 and 13.3.2.19.2.1 through 13.3.2.19.2.6. [101:26.3.6.3 2]

13.3.2.19.2.1
Activation of the automatic sprinkler system shall actuate the fire alarm system in accordance with Section 13.7. [101:26.3.6.3 2.1]

13.3.2.19.2.2
In buildings four or fewer stories above grade plane, systems in accordance with NFPA 13R shall be permitted. [101:26.3.6.3 2.2]

13.3.2.19.2.3*
Systems in accordance with NFPA 13D shall be permitted where all of the following requirements are met:

1. The lodging or rooming house shall not be part of a mixed occupancy.
2. Entrance foyers shall be sprinklered.
3. Lodging or rooming houses with sleeping accommodations for more than eight occupants shall be treated as two-family dwellings with regard to the water supply. [101: 26.3.6.3 3]

13.3.2.19.2.4
In buildings sprinklered in accordance with NFPA 13, closets less than 12 ft² (1.1 m²) in area in individual dwelling units shall not be required to be sprinklered. [101:26.3.6.3 2.4]

13.3.2.19.2.5
In buildings sprinklered in accordance with NFPA 13, closets that contain equipment such as washers, dryers, furnaces, or water heaters shall be sprinklered, regardless of size. [101:26.3.6.3 2.5]

13.3.2.19.2.6
In existing lodging or rooming houses, sprinkler installations shall not be required in closets not exceeding 24 ft² (2.2 m²) and in bathrooms not exceeding 55 ft² (5.1 m²). [101:26.3.6.3 2.6]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Wed Jul 31 12:29:32 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
Where an automatic sprinkler system is required by 13.3.2.21.2, attics not used for living purposes, storage, or fuel-fired equipment shall meet one of the following criteria:

1. Attics shall be protected throughout by a heat detection system arranged to activate the building fire alarm system in accordance with Section 13.7.

2. Attics shall be protected with automatic sprinklers that are part of the required, approved automatic sprinkler system in accordance with 13.3.1.2.

3. Attics shall be of noncombustible or limited-combustible construction.

4. Attics shall be constructed of fire-retardant-treated wood in accordance with NFPA703, Standard for Fire Retardant-Treated Wood and Fire Retardant Coatings for Building Materials. [101: 32.2.3.5.7.2]

    Attics shall be protected by heat alarms arranged to provide occupant notification in accordance with 33.2.3.4.2

[101: 32.2.3.5.7.2]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Wed Jul 31 12:48:01 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
13.3.23.3 Extinguishing Requirements.

Bulk merchandising retail buildings shall be protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 13.3 and the applicable provisions of the following:

1) The fire code (see 3.3.94 of NFPA 101). This Code
2) NFPA 13, Standard for the Installation of Sprinkler Systems
3) NFPA 30, Flammable and Combustible Liquids Code
4) NFPA 30B, Code for the Manufacture and Storage of Aerosol Products

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Wed Jul 31 13:25:52 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
## Section 13.3.2.23.4.1

### Automatic Extinguishing Systems

13.3.2.23.4.1.1 The mall building and all anchor buildings shall be protected throughout by an approved, supervised automatic sprinkler system in accordance with [NFPA 13](#).

13.3.2.23.4.1.2 The system shall be installed in such a manner that any portion of the system serving tenant spaces can be taken out of service without affecting the operating of the portion of the system serving the mall. [101:36.4.10.2 4.4.13.2 ]

### Submitter Information Verification

- **Submitter Full Name:** Gregory Harrington
- **Organization:** National Fire Protection Assoc
- **Street Address:**
- **City:**
- **State:**
- **Zip:**
- **Submittal Date:** Wed Jul 31 13:28:43 EDT 2013

### Committee Statement

- **Committee Statement:** Extract update.
- **Response Message:**

---

[101:36.4.10.2 4.4.13.2 ]
13.3.2.24.1
Mercantile occupancies, other than one-story buildings that meet the requirements of a street floor, as defined in 3.3.259 3.3.191.17, shall be protected by an approved automatic sprinkler system in accordance with NFPA 13 in any of the following specified locations:

(1) Throughout all mercantile occupancies with a story over 15,000 ft\(^2\) (1400 m\(^2\)) in area

(2) Throughout all mercantile occupancies exceeding 30,000 ft\(^2\) (2800 m\(^2\)) in gross area

(3) Throughout stories below the level of exit discharge where such stories have an area exceeding 2500 ft\(^2\) (232 m\(^2\)) and are used for the sale, storage, or handling of combustible goods and merchandise

(4) Throughout multiple occupancies protected as mixed occupancies in accordance with 6.1.14 where the conditions of 13.3.2.24.1(1), (2), or (3) apply to the mercantile occupancy [101:37.3.5.1]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Wed Jul 31 13:36:23 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
13.3.2.24.2
Bulk merchandising retail buildings shall be protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 13.3 and the applicable provisions of the following:

1. The fire code. (see 3.3.94 of NFPA 101). This Code
2. NFPA 13, Standard for the Installation of Sprinkler Systems
3. NFPA 30, Flammable and Combustible Liquids Code
4. NFPA 30B, Code for the Manufacture and Storage of Aerosol Products

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Wed Jul 31 13:39:19 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
13.3.2.25 Underground and Windowless Limited Access Structures.

Underground and limited access structures, and all areas and floor levels traversed in traveling to the exit discharge, shall be protected by an approved, supervised automatic sprinkler system in accordance with Section 13.3, unless such structures meet one of the following criteria:

1. They have an occupant load of 50 or fewer persons in new underground or limited access portions of the structure.

2. They have an occupant load of 100 or fewer persons in existing underground or limited access portions of the structure.

3. The structure is a one-story underground or limited access structure that is permitted to have a single exit, per Chapters 12 through Chapter 43 of NFPA 101, with a common path of travel not greater than 50 ft (15 m). [101:11.7.3.4]
13.3.27.4 Mini-Storage Building.
An automatic sprinkler system shall be installed throughout all mini-storage buildings greater than 2500 ft
² (232 m²) and where any of the individual storage units are separated by less than a 1-hour fire
resistance–rated barrier. [5000: 30.3.5.3]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Thu Aug 22 15:25:09 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
13.3.2.28 Woodworking Operations.
An approved automatic fire sprinkler system shall be installed in buildings containing woodworking
operations exceeding 2500 ft$^2$ (232 m$^2$) that use equipment, machinery, or appliances; that generate
finely divided combustible waste; or that use finely divided combustible materials. [5000:29.3.5.1.2]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Thu Aug 22 15:27:57 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
13.3.2.30 New Industrial Occupancies.
New industrial occupancies, other than low-hazard industrial occupancies, shall be protected by an approved automatic sprinkler system in accordance with NFPA 13 as follows in any of the following locations:

1. Throughout all industrial occupancies three or more stories in height
2. Throughout all industrial occupancies exceeding 12,000 ft² (1115 m²) in fire area
3. Where the total area of all floors, including mezzanines, exceeds 24,000 ft² (2230 m²)

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Thu Aug 22 15:30:18 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
13.3.3.4.1.4 Notification of System Shutdown or Testing
The property owner or designated representative shall notify the AHJ, the fire department, if required, and the alarm-receiving facility before testing or shutting down a system or its supply. [25:4.1.4]

13.3.3.4.1.4.1 The notification of system shutdown or test shall include the purpose for the shutdown, the system or component involved, and the estimated time of shutdown or test, and the expected duration of the shutdown or test. [25:4.1.4.1]

13.3.3.4.1.4.2 The AHJ, the fire department, and the alarm-receiving facility shall be notified when the system, supply, or component is returned to service or when the test is complete. [25:4.1.4.2]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Wed Aug 21 11:28:37 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
13.3.3.4.1.9 Hydraulic Design. Information Sign.

13.3.3.4.1.9.1
A permanently marked metal or rigid hydraulic plastic information sign shall be placed at the system riser supplying the corresponding hydraulically designed area control riser supplying an antifreeze loop, dry system, preaction system, or auxiliary system control valve. [25:4.1.9.1]

13.3.3.4.1.9.2
Each sign shall include be secured with a corrosion-resistant wire, chain, or other approved means and shall indicate at least the following information:

(1) Location of the design area or areas
(2) Discharge densities over the design area or areas
(3) Required flow and residual pressure demand at the base of riser
(4) Occupancy classification or commodity classification and maximum permitted storage height and configuration
(5) Hose stream allowance included in addition to the sprinkler demand
(6) The name of the installing contractor or person providing the information [25: 4.1.9.2]

13.3.3.4.1.9.3
Where system design approach utilizes the pipe schedule method a permanently marked metal or rigid information sign shall be placed at the system riser supplying the pipe scheduled area. [25: 4.1.9.3]

13.3.3.4.1.9.4
The sign shall include the following information:

(1) Location of the pipe scheduled design area
(2) The occupancy classification
(3) The name of the installing contractor or person providing the information. [25: 4.1.9.4]
13.3.3.4.1.10 Information Sign

13.3.3.4.1.10.1 A permanently marked metal or rigid plastic information sign shall be placed at the system control riser supplying an antifreeze loop, dry system, preaction system, or auxiliary system control valve.

13.3.3.4.1.10.2 Each sign shall be secured with a corrosion-resistant wire, chain, or other approved means and shall indicate at least the following information:

1. Location of the area served by the system
2. Location of auxiliary drains and low-point drains for dry pipe and preaction systems
3. The presence and location of antifreeze or other auxiliary systems
4. The presence and location(s) of heat tape

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Wed Aug 21 16:01:27 EDT 2013

Committee Statement

Committee Statement: Extract update. (Information Sign is now 13.3.3.4.1.9.)
Response Message:
13.3.3.4.1.10 Impairments.

13.3.3.4.1.10.1 Where an impairment to a water-based fire protection system occurs or is identified during inspection, testing, or maintenance activities, the procedures outlined in Chapter 15 of NFPA 25 shall be followed, including the attachment of a tag to the impaired system. [25:4.1.11 10.1]

13.3.3.4.1.10.2 Where a water-based fire protection system is returned to service following an impairment, the system shall be verified to be working properly by means of an appropriate inspection or test as described in the table, “Summary of Component Replacement [Action] Requirements” in the applicable chapters of NFPA 25. [25:4.1.11 10.2]
Second Revision No. 471-NFPA 1-2013 [Section No. 13.3.3.5.1.5.5.1]

*13.3.3.5.1.5.5.1*
A list of the sprinklers installed in the property shall be posted in the sprinkler cabinet. [25: 5.4.1.5.6]

(A) The list shall include the following:

1. Sprinkler Identification Number (SIN) if equipped; or the manufacturer, model, orifice, deflector type, thermal sensitivity, and pressure rating
2. General description
3. Quantity of each type to be contained in the cabinet
4. Issue or revision date of the list [25: 5.4.1.5.6.1]

*13.3.3.5.1.5.6*
A list of the sprinklers installed in the property shall be posted in the sprinkler cabinet. [25: 5.4.1.5.6]

*13.3.3.5.1.5.6.1*
The list shall include the following:

1. Sprinkler Identification Number (SIN) if equipped; or the manufacturer, model, orifice, deflector type, thermal sensitivity, and pressure rating
2. General description
3. Quantity of each type to be contained in the cabinet
4. Issue or revision date of the list [25: 5.4.1.5.6.1]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Wed Aug 21 16:11:57 EDT 2013

Committee Statement

Committee Statement: Extract update. (Also renumber A.13.3.3.5.1.5.5.1 as A.13.3.3.5.1.5.6.1.)
Response Message:
When emergency impairments occur, emergency action shall be taken to minimize potential injury and damage shall include, but are not limited to, interruption of water supply, frozen or ruptured piping, and equipment failure, and includes impairments found during inspection, testing, or maintenance activities.

[25: 15.6.1]
### Second Revision No. 52-NFPA 1-2013 [ Section No. 13.4.5.1.5.1 ]

<table>
<thead>
<tr>
<th>13.4.5.1.5.1</th>
</tr>
</thead>
<tbody>
<tr>
<td>The switch or valve shall allow the audible device to be silenced for up to 4 hours and then re-sound repeatedly for the conditions in 13.4.5.1.3, 13.4.5.1.4 [20:12.4.1.5 1 ]</td>
</tr>
</tbody>
</table>

### Submitter Information Verification

- **Submitter Full Name:** Gregory Harrington
- **Organization:** National Fire Protection Assoc
- **Street Address:**
- **City:**
- **State:**
- **Zip:**
- **Submittal Date:** Fri Jul 12 16:41:28 EDT 2013

### Committee Statement

- **Committee Statement:** Editorial correction.
- **Response Message:**
13.4.6.2
The date, time, and location of the field acceptance test shall be coordinated with the AHJ. [20:14.2.2]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Fri Jul 12 16:46:09 EDT 2013

Committee Statement

Committee Statement: Editorial correction.
Response Message: 

Page 138 of 866
Second Revision No. 54-NFPA 1-2013 [ Section No. 13.4.6.4.2 [Excluding any Sub-Sections] ]

At all flow conditions, including those required to be tested in 14.2.6.2 of NFPA 20, the fire pump as installed shall equal the performance as indicated on the manufacturer’s certified shop test characteristic curve within the accuracy limits of the test equipment. [20:14.2.4.2]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Fri Jul 12 16:47:25 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
13.4.6.4.2.2
For water mist positive displacement pumping units, the pump unit as installed shall equal the performance as indicated on the fire pump unit manufacturer’s certified shop test data, with variable speed features activated within the accuracy limits of the test equipment. [20:14.2.4.2.2]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Fri Jul 12 16:48:41 EDT 2013

Committee Statement

Committee Statement: Editorial correction.
Response Message:
Second Revision No. 583-NFPA 1-2013 [Section No. 13.5.3 [Excluding any Sub-Sections]]

The installation of devices to protect the public water supply from contamination shall comply with the provisions of NFPA 13, Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes; NFPA 13R, Standard for the Installation of Sprinkler Systems in Low-Rise Residential Occupancies up to and Including Four Stories in Height; NFPA 24, Standard for the Installation of Private Fire Service Mains and Their Appurtenances; and the plumbing code.

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
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Submittal Date: Mon Oct 21 10:15:21 EDT 2013

Committee Statement

Committee Statement: Updates the title of NFPA 13R to that of the current edition.
Response Message:
Second Revision No. 2-NFPA 1-2013 [ Section No. 13.6.1.3.1 ]

13.6.1.3.1*
Portable fire extinguishers used to comply with Section 13.6 shall be listed and labeled and shall meet or exceed all the requirements of one of the following fire test standards and one of the following applicable performance standards:


(2) Performance Standards standards:
(a) Carbon dioxide types: ANSI/UL 154, Standard for Carbon-Dioxide Fire Extinguishers; CAN/ULC-S503, Standard for Carbon-Dioxide Fire Extinguishers
(b) Dry chemical types: ANSI/UL 299, Standard for Dry Chemical Extinguishers; CAN/ULC-S504, Standard for Dry Chemical Fire Extinguishers
(c) Water types: ANSI/UL 626, Standard for Water Fire Extinguishers; CAN/ULC-S507, Standard for Water Fire Extinguishers
(d) Halon types: CAN/ULC-S512, Standard for Halogenated Agent Hand and Wheeled Fire Extinguishers
(e) Film-forming foam types: ANSI/UL 8, Water Based Agent Fire Extinguishers; CAN/ULC-S554, Standard for Water Based Agent Fire Extinguishers
(f) Halocarbon types: ANSI/UL 2129, Standard for Halocarbon Clean Agent Fire Extinguishers; CAN/ULC-S556, Standard for Halocarbon Clean Agent Fire Extinguishers

[10: 4.1.1]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Thu Jul 11 12:03:07 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
Second Revision No. 3-NFPA 1-2013 [ Section No. 13.6.1.3.4.3 ]

<table>
<thead>
<tr>
<th>13.6.1.3.4.3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Subsections</strong> Paragraphs 13.6.1.3.4.1 and 13.6.1.3.4.2 shall apply only to water-based extinguishers manufactured after August 15, 2002. [10:4.1.4.3]</td>
</tr>
</tbody>
</table>

Submitter Information Verification

<table>
<thead>
<tr>
<th>Submitter Full Name:</th>
<th>Gregory Harrington</th>
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<tbody>
<tr>
<td>Organization:</td>
<td>National Fire Protection Assoc</td>
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<td>Street Address:</td>
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<td>Submittal Date:</td>
<td>Thu Jul 11 13:00:36 EDT 2013</td>
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</tbody>
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Committee Statement

<table>
<thead>
<tr>
<th>Committee Statement:</th>
<th>Extract update.</th>
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<tbody>
<tr>
<td>Response Message:</td>
<td></td>
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</table>
13.6.2.4.1 Classifying Occupancy Hazard.
Rooms or areas shall be classified as being light hazard, ordinary hazard, or extra hazard. [10:5.4.1]

13.6.2.4.1.1* Light Hazard.
Light hazard occupancies shall be classified as locations where the quantity and combustibility of Class A combustibles and Class B flammables are low and fires with relatively low rates of heat release are expected. These occupancies consist of fire hazards having normally expected quantities of Class A combustible furnishings, and/or the total quantity of Class B flammables typically expected to be present is less than 1 gal (3.8 L) in any room or area. [10: 5.4.1.1]

13.6.2.4.1.2* Ordinary Hazard.
Ordinary hazard occupancies shall be classified as locations where the quantity and combustibility of Class A combustible materials and Class B flammables are moderate and fires with moderate rates of heat release are expected. These occupancies consist of fire hazards that only occasionally contain Class A combustible materials beyond normal anticipated furnishings, and/or the total quantity of Class B flammables typically expected to be present is from 1 gal to 5 gal (3.8 L to 18.9 L) in any room or area. [10: 5.4.1.2]

13.6.2.4.1.3* Extra Hazard.
Extra hazard occupancies shall be classified as locations where the quantity and combustibility of Class A combustible material are high or where high amounts of Class B flammables are present and rapidly developing fires with high rates of heat release are expected. These occupancies consist of fire hazards involved with the storage, packaging, handling, or manufacture of Class A combustibles, and/or the total quantity of Class B flammables expected to be present is more than 5 gal (18.9 L) in any room or area. [10: 5.4.1.3]

13.6.2.4.1.4 Limited areas of greater or lesser hazard shall be protected as required. [10:5.4.1.4]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Thu Jul 11 13:16:30 EDT 2013

Committee Statement

Committee Statement: Extract update - relocates hazard classification definitions to the body of the Code, as was done in NFPA 10.

Response Message:
When *Where* signs are used to indicate fire extinguisher location, the signs shall comply with the following:

1. They shall be located in close proximity to the extinguisher.
2. They shall be visible from the normal path of travel. [10:6.1.3.3.3]

**Submitter Information Verification**

- **Submitter Full Name:** Gregory Harrington
- **Organization:** National Fire Protection Assoc

**Committee Statement**

- **Committee Statement:** Extract update.
13.6.3.1.3.10.5
Cabinets or wall recesses for fire extinguishers shall be installed such that the extinguisher mounting heights specified in 13.6.3.1.3.8.1 and 13.6.3.1.3.8.2 are met. [10: 6.1.3.10.5]

Submitter Information Verification
Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Thu Jul 11 15:00:36 EDT 2013

Committee Statement
Committee Statement: Extract update.
Response Message:
The minimum number of fire extinguishers for Class A hazards shall be sufficient to meet the requirements of 13.6.3.2.1 through 13.6.3.2.1.2.3. [10:6.2.1.2]

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<tr>
<th>Committee Statement</th>
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Submitter Information Verification

**Submitter Full Name:** Gregory Harrington  
**Organization:** National Fire Protection Assoc  
**Street Address:**  
**City:**  
**State:**  
**Zip:**  
**Submittal Date:** Thu Jul 11 15:16:38 EDT 2013
13.6.3.2.1.2.2
Fire extinguishers shall be located so that the maximum travel distances shall not exceed 75 ft, (22.9 m), except as modified by 13.6.3.2.1.4. [10:6.2.1.2.2]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Thu Jul 11 15:18:36 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
13.6.3.2.1.3
Smaller fire extinguishers that are rated on Class B and Class C fires but do not have a minimum 1-A rating shall not be used to meet the requirements of 13.6.3.2.1. [10:6.2.1.3]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Thu Jul 11 15:21:20 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
13.6.3.3 Obstacle, Gravity/Three-Dimensional, and Pressure Fire Hazards.

13.6.3.3.1 Where hand portable fire extinguishers are installed or positioned for obstacle, gravity/three-dimensional, or pressure fire hazards, the actual travel distance to hazard shall not exceed 30 feet (9.14 m) unless otherwise specified (see Section 5.6.1 of NFPA 10). [10:6.3.3.1]

13.6.3.3.2 Where wheeled fire extinguishers of 125 lb (56.7 kg) agent capacity or larger are installed or positioned for obstacle, gravity/three-dimensional, or pressure fire hazards, the actual travel distance to hazard shall not exceed 100 feet (30.5 m) unless otherwise specified. (see Section 5.6.1 of NFPA 10). [10:6.3.3.2]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address: City:
State:
Zip:
Submittal Date: Thu Jul 11 15:56:18 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
Second Revision No. 11-NFPA 1-2013 [ Section No. 13.6.4.1.4.1 ]

13.6.4.1.4.1
Tags or labels intended for recording inspections, maintenance, or recharging shall be affixed so as not to obstruct the fire extinguisher use, fire extinguisher classification, or manufacturer's labels. [10:7.1.4.1]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Thu Jul 11 16:04:36 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
### Second Revision No. 12-NFPA 1-2013 [ Section No. 13.6.4.2.1.4 ]

<table>
<thead>
<tr>
<th>13.6.4.2.1.4</th>
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<tbody>
<tr>
<td>Extinguishers that are electronically monitored for location only, such as those monitored by means of a switch to indicate when the extinguisher is removed from its bracket or cabinet, shall be manually inspected in accordance with 13.6.4.2.2. [10:7.2.1.4]</td>
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### Submitter Information Verification

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<td>Submittal Date:</td>
<td>Thu Jul 11 16:07:16 EDT 2013</td>
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### Committee Statement

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<th>Extract update.</th>
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<tr>
<td>Response Message:</td>
<td></td>
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</table>
13.6.4.2.2.2
Where required by 13.6.4.2.2.1, the following inspection procedures shall be in addition to those addressed in 13.6.4.2.2:

1. Verifying Verify that operating instructions on nameplates are legible and face outward
2. Checking Check for broken or missing safety seals and tamper indicators
3. Examination Examine for obvious physical damage, corrosion, leakage, or clogged nozzle

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Thu Jul 11 16:10:04 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
13.6.4.2.2.3 Inspection Procedure for Containers of Class D Extinguishing Agent.

Periodic inspection of containers of Class D extinguishing agent used to protect Class D hazards shall include a check verification of at least the following:

1. Located in designated place
2. No obstruction to access or visibility
3. Lid is sealed
4. Fullness by hefting or weighing
5. No obvious physical damage to container [10: 7.2.2.3]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Thu Jul 11 16:11:44 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
When an inspection of any fire extinguisher reveals a deficiency in any of the conditions listed in 13.6.4.2.2 or 13.6.4.2.2.2, immediate corrective action shall be taken. [10:7.2.3]
13.6.4.2.3.1 Rechargeable Fire Extinguishers.
When an inspection of any rechargeable fire extinguisher reveals a deficiency in any of the conditions listed in 13.6.4.2.2(3), 13.6.4.2.2(4), 13.6.4.2.2(d)(5), or 13.6.4.2.2(1) through 13.6.4.2.2(3), the extinguisher shall be subjected to applicable maintenance procedures. [10:7.2.3.1]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Thu Jul 11 16:15:02 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
13.6.4.2.3.2 Nonrechargeable Dry Chemical Fire Extinguisher.

When an inspection of any nonrechargeable dry chemical fire extinguisher reveals a deficiency in any of the conditions listed in 13.6.4.2.2(3), 13.6.4.2.2(4), 13.6.4.2.2(6), or 13.6.4.2.2.2(1) through 13.6.4.2.2.2(3), the extinguisher shall be removed from further use, discharged, and destroyed at the direction of the owner or returned to the manufacturer. [10:7.2.3.2]
13.6.4.2.3.3 Nonrechargeable Halon Agent Fire Extinguisher.
When an inspection of any nonrechargeable fire extinguisher containing a halon agent reveals a
deficiency in any of the conditions listed in 13.6.4.2.2(3), 13.6.4.2.2(4), 13.6.4.2.2(6), or 13.6.4.2.2(1)
through 13.6.4.2.2(3), the extinguisher shall be removed from service, shall not be discharged, and
shall be returned to the manufacturer, a fire equipment dealer, or a distributor to permit recovery of the
halon. [10:7.2.3.3]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Thu Jul 11 16:23:22 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
13.6.4.3.1* Maintenance Procedures.
Where required by another section of this Code or NFPA 10, maintenance procedures shall include the procedures detailed in the manufacturer’s service manual and a thorough examination of the basic elements of the fire extinguisher, including the following:

1. Mechanical parts of all fire extinguishers
2. Extinguishing agent
3. Expelling means
4. Physical appearance condition [10: 7.3.1]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Fri Jul 12 10:22:41 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
13.6.4.3.2.1 Physical Condition.

An annual external visual examination of all fire extinguishers shall be made to detect obvious physical
damage, corrosion, or nozzle blockage, to verify that the operating instructions are present, legible, and
facing forward, and that the HMIS information is present and legible, and to determine if a 6-year
interval examination or hydrostatic test is due. [10:7.3.2.1]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Fri Jul 12 10:25:03 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
Fire extinguishers that pass the applicable 6-year requirement of 13.6.4.3.6 shall have the maintenance information recorded on a durable weatherproof label that is a minimum size of 2 in. × 3½ in. (51 mm × 89 mm). [10:7.3.6.5]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
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Zip:
Submittal Date: Fri Jul 12 10:35:17 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
Carbon dioxide hose assemblies that pass a conductivity test shall have the test information recorded on a durable weatherproof label that has a minimum size of $\frac{1}{2}$ in. × 3 in. (13 mm × 76 mm). [10:7.4.2.1]
Second Revision No. 23-NFPA 1-2013 [ Section No. 13.6.4.5.1 [Excluding any Sub-Sections] ]

The components of the monitoring device/system shall be tested and maintained annually in accordance with the manufacturer’s listed maintenance manual, with the following items as a minimum:

(1) Power supply inspection/battery change
(2) Obstruction sensor inspection
(3) Location sensor inspection
(4) Pressure indication inspection
(5) Connection continuity inspection (see 13.6.4.5.1.1, 13.6.4.5.1.2, 13.6.4.5.1.1, 13.6.4.5.1.2, 13.6.4.5.1.1, 13.6.4.5.1.2, and 13.6.4.5.1.2).

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address: 
City: 
State: 
Zip: 
Submital Date: Fri Jul 12 10:44:42 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
13.6.4.7.3.5.1

Pails or drums containing dry powder agents for scoop or shovel application for use on metal fires shall be kept full and sealed with the lid provided with the container. [10:7.7.3.5.1]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Fri Jul 12 11:11:26 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
### Second Revision No. 25-NFPA 1-2013 [ Section No. 13.6.4.7.3.5.2 ]

<table>
<thead>
<tr>
<th>13.6.4.7.3.5.2</th>
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<tbody>
<tr>
<td>The dry powder shall be replaced if found damp. <em>(See A.13.6.4.7.3)</em> [10:7.7.3.5.2]</td>
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</tbody>
</table>

### Submitter Information Verification

- **Submitter Full Name:** Gregory Harrington
- **Organization:** National Fire Protection Assoc
- **Street Address:**
- **City:**
- **State:**
- **Zip:**
- **Submittal Date:** Fri Jul 12 11:13:52 EDT 2013

### Committee Statement

- **Committee Statement:** Extract update.
- **Response Message:**

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Page 165 of 866
13.6.4.7.4.1
Only standard industrial-grade nitrogen with a maximum dew point of −60°F (−51°C) or lower (CGA nitrogen specification in accordance with CGA G10.1), Commodity Specification for Nitrogen, shall be used to pressurize stored-pressure dry chemical and halogenated-type fire extinguishers that use nitrogen as a propellant. [10:7.7.4.1]
Each extinguisher that has undergone maintenance that includes internal examination or that has been recharged which required the removal of the valve assembly shall have a verification-of-service collar located around the neck of the container. [10:7.10]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Fri Jul 12 11:42:26 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
13.6.4.10.4.1
New extinguishers requiring an initial charge in the field (such as pressurized water extinguishers, AFFF, FFFP, or wet chemical extinguishers) shall not be required to have a verification-of-service collar installed.

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Fri Jul 12 11:45:09 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
13.7.1.7.3
A manual fire alarm box shall be provided as follows, unless modified by another section of this Code:

(1) For new alarm system installations, the manual fire alarm box shall be located within 5 ft (1.5 m 60 in. (1525 mm) of exit doorways.

(2) For existing alarm system installations, the manual fire alarm box either shall be provided in the natural exit access path near each required exit or within 5 ft (1.5 m 60 in. (1525 mm) of exit doorways. [101 : 9.6.2.3]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Wed Jul 31 15:53:28 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
13.7.1.7.4
Manual fire alarm boxes shall be mounted on both sides of grouped openings over 40 ft (12.2 m) in width, and within 5 ft (1.5 m) 60 in. (1525 mm) of each side of the opening. [101:9.6.2.4]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Wed Jul 31 15:54:58 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
13.7.1.7.5*
Additional manual fire alarm boxes shall be located so that, on any given floor in any part of the building, no horizontal distance on that floor exceeding 200 ft (60.61 m) shall need to be traversed to reach a manual fire alarm box. [101:9.6.2.5]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Wed Jul 31 15:57:20 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
Second Revision No. 88-NFPA 1-2013 [ Section No. 13.7.1.8.4 ]

13.7.1.8.4
Smoke alarms and smoke detectors shall not be installed within an area of exclusion determined by a 10 ft (3.0 m) radial distance along a horizontal flow path from a stationary or fixed cooking appliance, unless listed for installation in close proximity to cooking appliances. Smoke alarms and smoke detectors installed between 10 ft (3.0 m) and 20 ft (6.1 m) along a horizontal flow path from a stationary or fixed cooking appliance shall be equipped with an alarm-silencing means or use photoelectric detection.

Smoke alarms or smoke detectors that use photoelectric detection shall be permitted for installation at a radial distance greater than 6 ft (1.8 m) from any stationary or fixed cooking appliance when the following conditions are met:

- The kitchen or cooking area and adjacent spaces have no clear interior partitions or headers and
- The 10 ft (3.0 m) area of exclusion would prohibit the placement of a smoke alarm or smoke detector required by other sections of this NFPA 72. \[72 : 29.8.3.4(4)\]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Mon Jul 15 14:24:33 EDT 2013

Committee Statement

Committee Statement: Editorial correction.
Response Message:
Smoke alarms and smoke detectors shall not be installed within a 36 in. (910 mm) horizontal path from a door to a bathroom containing a shower or tub unless listed for installation in close proximity to such locations. [72:29.8.3.4(5 6)]
Second Revision No. 250-NFPA 1-2013 [Section No. 13.7.1.8.6]

13.7.1.8.6 System smoke detectors in accordance with NFPA 72 and arranged to function in the same manner as single-station or multiple-station smoke alarms shall be permitted in lieu of smoke alarms.

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Wed Jul 31 16:10:31 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
Second Revision No. 251-NFPA 1-2013 [ Section No. 13.7.1.9.1 ]

13.7.1.9.1
Occupant notification shall be provided to alert occupants of a fire or other emergency where required by other sections of this Code. [101:9.6.3.1]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submit Date: Wed Jul 31 16:13:01 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
Where total evacuation of occupants is impractical due to building configuration, only the occupants in the affected zones shall be initially notified, and provisions shall be made to selectively notify occupants in other zones to afford orderly evacuation of the entire building, when provided that such arrangement is approved by the AHJ. [101:9.6.3.6.2]
13.7.1.10.4
Where For other than existing installations, where fire alarm systems are required to provide emergency forces notification, supervisory signals and trouble signals shall sound and be visibly displayed either at an approved, remotely located receiving facility or at a location within the protected building that is constantly attended by qualified personnel. [101: 9.6.4.4]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Wed Jul 31 16:20:18 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
### Section 13.7.1.11.2

Where required by another section of this Code, the following functions shall be actuated:

1. Release of hold-open devices for doors or other opening protectives
2. Stairwell or elevator shaft pressurization
3. Smoke management or smoke control systems
4. Unlocking of doors
5. Elevator recall and shutdown \[101:9.6.5.2]\n6. HVAC shutdown \[101:9.6.5.2]\n
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#### Submitter Information Verification

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#### Committee Statement

Committee Statement: Editorial.

Response Message:
13.7.2  Where Required

13.7.2.1  New Assembly Occupancies.

Assembly occupancies with occupant loads of more than 300 and all theaters with more than one
audience-viewing room shall be provided with an approved fire alarm system in accordance with
Section 13.7 of this Code and NFPA 101, unless otherwise permitted by 13.7.2.1.2. [101: 12.3.4.1.1]

13.7.2.1.2  Assembly occupancies that are a part of a multiple occupancy protected as a mixed occupancy. (see
6.1.14 of NFPA 101) shall be permitted to be served by a common fire alarm system, provided that the individual
requirements of each occupancy are met. [101: 12.3.4.1.2]

13.7.2.2  Existing Assembly Occupancies.

13.7.2.2.1  Assembly occupancies with occupant loads of more than 300 and all theaters with more than one
audience-viewing room shall be provided with an approved fire alarm system in accordance with
Section 13.7 of this Code and NFPA 101, unless otherwise permitted by 13.7.2.2.2, 13.7.2.2.3,
or 13.7.2.2.4. [101: 13.3.4.1.1]

13.7.2.2.2  Assembly occupancies that are a part of a multiple occupancy protected as a mixed occupancy. (see
6.1.14 of NFPA 101) shall be permitted to be served by a common fire alarm system, provided that
the individual requirements of each occupancy are met. [101: 13.3.4.1.2]

13.7.2.2.3  Voice communication or public address systems complying with 13.3.4.3.6 of NFPA 101 shall not be
required to comply with Section 13.7 of this Code. [101: 13.3.4.1.3]

13.7.2.2.4  The requirement of 13.7.2.2.1 shall not apply to assembly occupancies where, in the judgment of the
AHJ, adequate alternative provisions exist or are provided for the discovery of a fire and for alerting the
occupants promptly. [101: 13.3.4.1.4]

13.7.2.3  New Educational Occupancies.

13.7.2.3.1  Educational occupancies shall be provided with a fire alarm system in accordance with Section 13.7
and NFPA 101. [101: 14.3.4.1.1]

13.7.2.3.2  The requirement of 13.7.2.3.1 shall not apply to buildings meeting all of the following criteria:

(1) Buildings having an area not exceeding 1000 ft² (93 m²)

(2) Buildings containing a single classroom

(3) Buildings located not less than 30 ft (9.2 m) from another building [101: 14.3.4.1.2]

13.7.2.3.3  Emergency Forces Notification.

Fire department notification shall be accomplished in accordance with 13.7.1.10. [101: 14.3.4.3.2]

13.7.2.4  Existing Educational Occupancies.

13.7.2.4.1  Educational occupancies shall be provided with a fire alarm system in accordance with Section 13.7
and NFPA 101. [101: 15.3.4.1.1]
The requirement of 13.7.2.4.1 shall not apply to buildings meeting all of the following criteria:

1. Buildings having an area not exceeding 1000 ft\(^2\) (93 m\(^2\))
2. Buildings containing a single classroom
3. Buildings located not less than 30 ft (9.2 m) from another building

Emergency Forces Notification.

Wherever any of the school authorities determine that an actual fire exists, they shall immediately call the local fire department using the public fire alarm system or other available facilities.

Emergency forces notification shall be accomplished in accordance with 9.6.4 of NFPA 101 - where the existing fire alarm system is replaced.

New Health Care Occupancies.

General.

Health care occupancies shall be provided with a fire alarm system in accordance with Section 13.7 and NFPA 101.

Detection in Spaces Open to Corridors.

Detectors shall be installed in spaces open to the corridor in accordance with 18.3.6.1 of NFPA 101.

Nursing Homes.

An approved automatic smoke detection system shall be installed in corridors throughout smoke compartments containing patient sleeping rooms and in spaces open to corridors as permitted in nursing homes by 18.3.6.1 of NFPA 101, unless otherwise permitted by the following:

1. Corridor systems shall not be required where each patient sleeping room is protected by an approved smoke detection system.
2. Corridor systems shall not be required where patient room doors are equipped with automatic door-closing devices with integral smoke detectors on the room side installed in accordance with their listing, provided that the integral detectors provide occupant notification.

Emergency Forces Notification.

Emergency forces notification shall be accomplished in accordance with 13.7.1.10, except that the provision of 18.3.5.3(13)(d) of NFPA 101 shall be permitted to be used.

Existing Health Care Occupancies.

General.

Health care occupancies shall be provided with a fire alarm system in accordance with Section 13.7 and NFPA 101.

Corridors.

An approved automatic smoke detection system in accordance with 13.7.1 shall be installed in all corridors of limited care facilities, unless otherwise permitted by the following:

1. Where each patient sleeping room is protected by an approved smoke detection system, and a smoke detector is provided at smoke barriers and horizontal exits in accordance with 13.7.1 of this Code, the corridor smoke detection system shall not be required in the patient sleeping room floors.
2. Smoke compartments protected throughout by an approved, supervised automatic sprinkler system in accordance with 19.3.5.7 of NFPA 101 shall be permitted.

Detection in Spaces Open to Corridors.

Detectors shall be installed in spaces open to the corridor in accordance with 19.3.6.1 of NFPA 101.
13.7.2.6.4.1
Emergency forces notification shall be accomplished in accordance with 13.7.1.10, except that the provision of 19.3.2.5.3(13)(d) of NFPA 101 shall be permitted to be used. [ NFPA 101 : 19.3.4.3.2.1 ]

13.7.2.6.4.2
Smoke detection devices or smoke detection systems equipped with reconfirmation features shall not be required to automatically notify the fire department, unless the alarm condition is reconfirmed after a period not exceeding 120 seconds. [ NFPA 101 : 19.3.4.3.2.2 ]

13.7.2.7 New Detention and Correctional Occupancies.

13.7.2.7.1
Detention and correctional occupancies shall be provided with a fire alarm system in accordance with 13.7.1 and NFPA 101, except as modified by 22.3.4.2 through 22.3.4.4.3 of NFPA 101. [ NFPA 101 : 22.3.4.1 ]

13.7.2.7.2 Detection.
An approved automatic smoke detection system shall be in accordance with 13.7.1.4, as modified by 13.7.2.7.2.1 through 13.7.2.7.2.3, throughout all resident sleeping areas and adjacent day rooms, activity rooms, or contiguous common spaces. [ NFPA 101 : 22.3.4.4 ]

13.7.2.7.2.1
Smoke detectors shall not be required in sleeping rooms with four or fewer occupants. [ NFPA 101 : 22.3.4.4.1 ]

13.7.2.7.2.2 Other arrangements and positioning of smoke detectors shall be permitted to prevent damage or tampering, or for other purposes. [ NFPA 101 : 22.3.4.4.2 ]

13.7.2.7.2.2.1 Other arrangements, as specified in 13.7.2.7.2.2, shall be capable of detecting any fire, and the placement of detectors shall be such that the speed of detection is equivalent to that provided by the spacing and arrangements required by the installation standards referenced in 13.7.1.1. [ NFPA 101 : 22.3.4.4.2.1 ]

13.7.2.7.2.2.2 Detectors shall be permitted to be located in exhaust ducts from cells, behind grilles, or in other locations. [ NFPA 101 : 22.3.4.4.2.2 ]

13.7.2.7.2.2.3 The equivalent performance of the design permitted by 13.7.2.7.2.2.2 shall be acceptable to the AHJ in accordance with the equivalency concepts specified in Section 1.4. [ NFPA 101 : 22.3.4.4.2.3 ]

13.7.2.7.2.3 Smoke detectors shall not be required in Use Condition II open dormitories where staff is present within the dormitory whenever the dormitory is occupied. [ NFPA 101 : 22.3.4.4.3 ]

13.7.2.7.3 Emergency Forces Notification.

13.7.2.7.3.1 Fire department notification shall be accomplished in accordance with 13.7.1.10, unless otherwise permitted by the following:

1. A positive alarm sequence shall be permitted in accordance with 13.7.1.9.4.

2. Any smoke detectors required by Chapter 22 of NFPA 101 shall not be required to transmit an alarm to the fire department.

3. This requirement shall not apply where staff is provided at a constantly attended location that meets one of the following criteria:

   a. It has the capability to promptly notify the fire department.

   b. It has direct communication with a control room having direct access to the fire department. [ NFPA 101 : 22.3.4.3.2.1 ]

13.7.2.7.3.2 Where the provision of 13.7.2.7.3.1 is utilized, the fire plan, as required by 22.7.1.3 of NFPA 101, shall include procedures for logging of alarms and immediate notification of the fire department. [ NFPA 101 : 22.3.4.3.2.2 ]

13.7.2.8 Existing Detention and Correctional Occupancies.
13.7.2.8.1  General.

Detention and correctional occupancies shall be provided with a fire alarm system in accordance with 13.7.1 and NFPA 101, except as modified by 23.3.4.2 through 23.3.4.4.4 of NFPA 101. [101 : 23.3.4.1]

13.7.2.8.2  Detection.

An approved automatic smoke detection system shall be in accordance with Section 13.7, as modified by 13.7.2.8.2.1 through 13.7.2.8.2.4, throughout all resident housing areas. [101 : 23.3.4.4]

13.7.2.8.2.1

Smoke detectors shall not be required in sleeping rooms with four or fewer occupants in Use Condition II or Use Condition III. [101 : 23.3.4.4.1]

13.7.2.8.2.2

Other arrangements and positioning of smoke detectors shall be permitted to prevent damage or tampering, or for other purposes. [101 : 23.3.4.4.2]

13.7.2.8.2.2.1

Other arrangements, as specified in 13.7.2.8.2.2, shall be capable of detecting any fire, and the placement of detectors shall be such that the speed of detection is equivalent to that provided by the spacing and arrangements required by the installation standards referenced in Section 13.7. [101 : 23.3.4.4.2.1]

13.7.2.8.2.2.2

Detectors shall be permitted to be located in exhaust ducts from cells, behind grilles, or in other locations. [101 : 23.3.4.4.2.2]

13.7.2.8.2.2.3

The equivalent performance of the design permitted by 13.7.2.8.2.2.2 shall be acceptable to the AHJ in accordance with the equivalency concepts specified in Section 1.4. [101 : 23.3.4.4.2.3]

13.7.2.8.2.4

Smoke detectors shall not be required in Use Condition II open dormitories where staff is present within the dormitory whenever the dormitory is occupied, and the building is protected throughout by an approved, supervised automatic sprinkler system in accordance with 13.3.2.14. [101 : 23.3.4.4.3]

13.7.2.8.3

Emergency Forces Notification.

13.7.2.8.3.1

Fire department notification shall be accomplished in accordance with 13.7.1.10, unless otherwise permitted by the following:

(1) A positive alarm sequence shall be permitted in accordance with 13.7.1.9.4.

(2) Any smoke detectors required by Chapter 23 of NFPA 101 shall not be required to transmit an alarm to the fire department.

(3) This requirement shall not apply where staff is provided at a constantly attended location that meets one of the following criteria:

(a) It has the capability to promptly notify the fire department.

(b) It has direct communication with a control room having direct access to the fire department. [101 : 23.3.4.3.2.1]

13.7.2.8.3.2

Where the provision of 13.7.2.8.3.1 (3) is utilized, the fire plan, as required by 23.7.1.3 of NFPA 101, shall include procedures for logging of alarms and immediate notification of the fire department. [101 : 23.3.4.3.2.2]

13.7.2.8.4

New Hotels and Dormitories.

13.7.2.8.4.1  General.

A fire alarm system in accordance with 13.7.1 and NFPA 101, except as modified by 28.3.4.2 through 28.3.4.6 of NFPA 101, shall be provided. [101 : 28.3.4.1]
13.7.2.9.2 Detection.
A corridor smoke detection system in accordance with Section 13.7.2 shall be provided in buildings other than those protected throughout by an approved, supervised automatic sprinkler system in accordance with 13.3.2.15. [101: 28.3.4.4]

13.7.2.9.3 Smoke Alarms.
Smoke alarms shall be installed in accordance with 13.7.1.8 in every guest room and every living area and sleeping room within a guest suite. [101: 28.3.4.5]

13.7.2.9.4 Carbon Monoxide Alarms or Detection Systems.
Carbon monoxide alarms or carbon monoxide detectors in accordance with 13.7.1.14 and 13.7.2.9.4 shall be provided in new hotels and dormitories where either of the following conditions exists:

1. Guest rooms or guest suites with communicating attached garages, unless otherwise exempted by 13.7.2.9.4.2
2. Guest rooms or guest suites containing a permanently installed fuel-burning appliance or fuel-burning fireplace. [101: 28.3.4.6.1]

13.7.2.9.4.1 Where required by 13.7.2.9.4, carbon monoxide alarms or carbon monoxide detectors shall be installed in the following locations:

1. Outside of each separate guest room or guest suite sleeping area in the immediate vicinity of the sleeping rooms
2. On every occupiable level of a guest room and guest suite [101: 28.3.4.6.2]

13.7.2.9.4.2 Carbon monoxide alarms and carbon monoxide detectors as specified in 13.7.2.9.4 (1) shall not be required in the following locations:

1. In garages
2. Within guest rooms or guest suites with communicating attached garages that are open parking structures as defined by the building code
3. Within guest rooms or guest suites with communicating attached garages that are mechanically ventilated in accordance with the mechanical code [101: 28.3.4.6.3]

13.7.2.9.4.3 Where fuel-burning appliances or fuel-burning fireplaces are installed outside guest rooms or guest suites, carbon monoxide alarms or carbon monoxide detectors shall be installed in accordance with the manufacturer’s published instructions in the locations specified as follows:

1. On the ceilings of rooms containing permanently installed fuel-burning appliances or fuel-burning fireplaces
2. Centrally located within occupiable spaces served by the first supply air register from a permanently installed, fuel-burning HVAC system
3. Centrally located within occupiable spaces adjacent to a communicating attached garage. [101: 28.3.4.6.5]

13.7.2.9.5 Emergency forces notification shall be provided in accordance with 13.7.1.10. [101: 28.3.4.3.6]

13.7.2.10 Existing Hotels and Dormitories.
13.7.2.10.1 General.
A fire alarm system in accordance with 13.7.1 and NFPA 101, except as modified by 29.3.4.2 through 29.3.4.5 of NFPA 101, shall be provided in buildings, other than those where each guest room has exterior exit access in accordance with 14.10.3 and the building is three or fewer stories in height. [101: 28.3.4.4]

13.7.2.10.2 Smoke Alarms.
An approved single-station smoke alarm shall be installed in accordance with 13.7.1.8 in every guest room and every living area and sleeping room within a guest suite. [101 : 29.3.4.5]

13.7.2.10.2.1
The smoke alarms shall not be required to be interconnected. [101 : 29.3.4.5.1]

13.7.2.10.2.2
Single-station smoke alarms without a secondary (standby) power source shall be permitted. [101 : 29.3.4.5.2]

13.7.2.10.3*
Where the existing fire alarm system does not provide for automatic emergency forces notification in accordance with 13.7.1.10, provisions shall be made for the immediate notification of the public fire department by telephone or other means in case of fire, and where there is no public fire department, notification shall be made to the private fire brigade. [101 : 29.3.4.3.6]

13.7.2.10.4
Where a new fire alarm system is installed or the existing fire alarm system is replaced, emergency forces notification shall be provided in accordance with 13.7.1.10. [101 : 29.3.4.3.7]

13.7.2.11 New Apartment Buildings.
13.7.2.11.1
Apartment buildings four or more stories in height or with more than 11 dwelling units, other than those meeting the requirements of 13.7.2.11.2, shall be provided with a fire alarm system in accordance with Section 13.7 and NFPA 101, except as modified by 30.3.4.2 through 30.3.4.5 of NFPA 101.

13.7.2.11.2
A fire alarm system shall not be required in buildings where each dwelling unit is separated from other contiguous dwelling units by fire barriers (see Section 12.7) having a minimum 1-hour fire resistance rating and where each dwelling unit has either its own independent exit or its own independent stairway or ramp discharging at the finished ground level.

13.7.2.11.3
Smoke Alarms.
Smoke alarms shall be installed in accordance with 13.7.1.8 in every sleeping area, outside every sleeping area in the immediate vicinity of the bedrooms, and on all levels of the dwelling unit, including basements.

13.7.2.11.4
Carbon Monoxide Alarms or Detection Systems.
Carbon monoxide alarms or carbon monoxide detectors in accordance with 13.7.1.14 and 13.7.2.11.4 shall be provided in new apartment buildings where either of the following conditions exists:

1. Dwelling units with communicating attached garages unless otherwise exempted by 13.7.2.11.4.2
2. Dwelling units containing a permanently installed fuel burning appliance or fuel burning fireplaces.

13.7.2.11.4.1
Where required by 13.7.2.11.4, carbon monoxide alarms or carbon monoxide detectors shall be installed in the following locations:

1. Outside of each separate dwelling unit sleeping area in the immediate vicinity of the sleeping rooms
2. On every occupiable level of a dwelling unit.

13.7.2.11.4.2
Carbon monoxide alarms and carbon monoxide detectors as specified in 13.7.2.11.4 (1) shall not be required in the following locations:

1. In garages
2. Within dwelling units with communicating attached garages that are open parking structures as defined by the building code
3. Within dwelling units with communicating attached garages that are mechanically ventilated in accordance with the mechanical code.

13.7.2.11.4.3
Where fuel-burning appliances or fuel burning fireplaces are installed outside dwelling units, carbon monoxide alarms or carbon monoxide detectors shall be installed in accordance with the manufacturer's published instructions in the locations specified as follows:

1. On the ceilings of rooms containing permanently installed fuel-burning appliances or fuel burning fireplaces
2. Centrally located within occupiable spaces served by the first supply air register from a permanently installed, fuel burning HVAC system
3. Centrally located within occupiable spaces adjacent to a communicating attached garage.
Emergency forces notification shall be accomplished in accordance with 13.7.1.10. [101]

13.7.2.12 Existing Apartment Buildings.
13.7.2.12.1
Apartment buildings four or more stories in height or with more than 11 dwelling units, other than those meeting the requirements of 13.7.2.12.2, shall be provided with a fire alarm system in accordance with Section 13.7 and NFPA 101, except as modified by 31.3.4.2 through 31.3.4.5 of NFPA 101. [101: 31.3.4.1.1]

13.7.2.12.2
A fire alarm system shall not be required where each dwelling unit is separated from other contiguous dwelling units by fire barriers (see Section 12.7) having a minimum 1/2-hour fire resistance rating and where each dwelling unit has either its own independent exit or its own independent stairway or ramp discharging at the finished ground level. [101: 31.3.4.1.2]

13.7.2.12.3
Smoke Alarms.

13.7.2.12.3.1
In buildings other than those equipped throughout with an existing, complete automatic smoke detection system, smoke alarms shall be installed in accordance with 13.7.1.8, as modified by 13.7.2.12.3.2, outside every sleeping area in the immediate vicinity of the bedrooms and on all levels of the dwelling unit, including basements. [101: 31.3.4.5.1]

13.7.2.12.3.2
Smoke alarms required by 13.7.2.12.3.1 shall not be required to be provided with a secondary (standby) power source. [101: 31.3.4.5.2]

13.7.2.12.3.3
In buildings other than those equipped throughout with an existing, complete automatic smoke detection system or a complete, supervised automatic sprinkler system in accordance with 13.3.2.18, smoke alarms shall be installed in every sleeping area in accordance with 13.7.1.8, as modified by 13.7.2.12.3.4. [101: 31.3.4.5.3]

13.7.2.12.3.4
Smoke alarms required by 13.7.2.12.3.3 shall be permitted to be battery-powered. [101: 31.3.4.5.4]

13.7.2.12.4
Emergency forces notification shall be accomplished in accordance with 13.7.1.10. [101: 31.3.4.5.5]

13.7.2.13
Lodging and Rooming Houses.

Lodging and rooming houses, other than those meeting 13.7.2.13.1, shall be provided with a fire alarm system in accordance with Section 13.7 and NFPA 101. [101: 26.3.4.1.1]

13.7.2.13.1
A fire alarm system in accordance with Section 13.7 shall not be required in existing lodging and rooming houses that have an existing smoke detection system meeting or exceeding the requirements of 13.7.2.13.2.1 where that detection system includes not less than one manual fire alarm box per floor arranged to initiate the smoke detection alarm. [101: 26.3.4.1.2]

13.7.2.13.2
Smoke Alarms.

13.7.2.13.2.1
Approved smoke alarms, other than existing smoke alarms meeting the requirements of 13.7.2.13.2.3, shall be installed in accordance with 13.7.1.8 in every sleeping room. [101: 26.3.4.5.1]

13.7.2.13.2.2
In other than existing buildings, the smoke alarms required by 13.7.2.13.2.1 shall be interconnected in accordance with 13.7.1.8. [101: 26.3.4.5.2]

13.7.2.13.2.3
Existing battery-powered smoke alarms, rather than house electric-powered smoke alarms, shall be permitted where the facility has demonstrated to the AHJ that the testing, maintenance, and battery replacement programs will ensure reliability of power to the smoke alarms. [101: 26.3.4.5.3]

13.7.2.13.3
Carbon monoxide alarms or carbon monoxide detectors in accordance with 13.7.1.14 and 13.7.2.13.3 shall be provided in new lodging or rooming houses where either of the following conditions exists:

1. Lodging or rooming houses with communicating attached garages unless otherwise exempted by 13.7.2.13.3.
2. Lodging or rooming houses containing fuel burning appliances or fuel-burning fireplaces.

Where required by 13.7.2.13.3, carbon monoxide alarms or carbon monoxide detectors shall be installed in the following locations:

1. Outside of each separate sleeping area in the immediate vicinity of the sleeping rooms.
2. On every occupiable level including basements, and excluding attics and crawl spaces.

Carbon monoxide alarms and carbon monoxide detectors as specified in 13.7.2.13.3.1 shall not be required in the following locations:

1. In garages.
2. Within lodging or rooming houses with communicating attached garages that are open parking structures as defined by the building code.
3. Within lodging or rooming houses with communicating attached garages that are mechanically ventilated in accordance with the mechanical code.

Smoke alarms or a smoke detection system shall be provided in accordance with either 13.7.2.14.2 or 13.7.2.14.3, and NFPA 101, as modified by 13.7.2.14.4.

Smoke alarms shall be installed in accordance with 13.7.1.8 in the following locations:

1. All sleeping rooms.
2. Outside of each separate sleeping area, in the immediate vicinity of the sleeping rooms.
3. On each level of the dwelling unit, including basements.

Dwelling units shall be protected by an approved smoke detection system in accordance with Section 13.7. and equipped with an approved means of occupant notification.
13.7.2.14.5
Carbon monoxide alarms or carbon monoxide detectors in accordance with 13.7.1.14 and 13.7.2.14.5 shall be provided in new one- and two-family dwellings where either of the following conditions exists:

(1) Dwelling units with communicating attached garages unless otherwise exempted by 13.7.2.14.7

(2) Dwelling units containing fuel burning appliances or fuel-burning fireplaces

13.7.2.14.6
Where required by 13.7.2.14.5, carbon monoxide alarms or carbon monoxide detectors shall be installed in the following locations:

(1) Outside of each separate dwelling unit sleeping area in the immediate vicinity of the sleeping rooms

(2) On every occupiable level of the dwelling unit, including basements, and excluding attics and crawl spaces

13.7.2.14.7
Carbon monoxide alarms and carbon monoxide detectors as specified in 13.7.2.14.5 (1) shall not be required in the following locations:

(1) In garages

(2) Within dwelling units with communicating attached garages that are open parking structures as defined by the building code

(3) Within dwelling units with communicating attached garages that are mechanically ventilated in accordance with the mechanical code

13.7.2.15 New Residential Board and Care Occupancies
13.7.2.15.1 Small Facilities with Sleeping Accommodations for Not More Than 16 Residents
13.7.2.15.1.1 General
A manual fire alarm system shall be provided in accordance with Section 13.7 and NFPA 101.

13.7.2.15.1.2 Smoke Alarms
Approved smoke alarms shall be provided in accordance with 13.7.1.8. [101 : 32.2.3.4.3.1]

Smoke alarms shall be installed on all levels, including basements but excluding crawl spaces and unfinished attics. [101 : 32.2.3.4.3.2]

Additional smoke alarms shall be installed in all living areas, as defined in 3.3.21.5 in NFPA. [101 : 32.2.3.4.3.3]

Each sleeping room shall be provided with an approved smoke alarm in accordance with 13.7.1.8. [101 : 32.2.3.4.3.4]

Large Facilities.

A fire alarm system shall be provided in accordance with Section 13.7. and NFPA. [101 : 32.3.3.4.1]

Approved smoke alarms shall be installed in accordance with 13.7.1.8 inside every sleeping room, outside every sleeping area in the immediate vicinity of the bedrooms, and on all levels within a resident unit. [101 : 32.3.3.4.7]

Smoke Detection Systems.
13.7.2.15.2.3.1 —
Corridors and spaces open to the corridors, other than those meeting 13.7.2.15.2.3.2, shall be provided with smoke detectors that comply with NFPA 72 and are arranged to initiate an alarm that is audible in all sleeping areas. [101: 32.3.3.4.8.1]

13.7.2.15.2.3.2 —
Smoke detection systems shall not be required in unenclosed corridors, passageways, balconies, colonnades, or other arrangements with one or more sides along the long dimension fully or extensively open to the exterior at all times. [101: 32.3.3.4.8.3]

13.7.2.15.2.4 — Emergency Forces Notification.
Emergency forces notification shall meet the following requirements:

1. Emergency forces notification shall be accomplished with 13.7.1.10.

2. Smoke detection devices or smoke detection systems shall be permitted to initiate a positive alarm sequence in accordance with 13.7.1.9.4 for not more than 120 seconds. [101: 32.3.3.4.6]

13.7.2.16 — Existing Residential Board and Care Occupancies.
13.7.2.16.1 — Small Facilities with Sleeping Accommodations for Not More Than 16 Residents.
13.7.2.16.1.1 — Fire Alarm Systems.
A manual fire alarm system shall be provided in accordance with Section 13.7 and NFPA 101, unless the provisions of 13.7.2.16.1.2 or 13.7.2.16.1.3 are met. [101: 33.2.3.4.1]

13.7.2.16.1.2 —
A fire alarm system shall not be required where interconnected smoke alarms complying with 13.7.2.16.1.4 and not less than one manual fire alarm box per floor arranged to continuously sound the smoke detector alarms are provided. [101: 33.2.3.4.1.1]

13.7.2.16.1.3 —
Other manually activated continuously sounding alarms acceptable to the AHJ shall be permitted in lieu of a fire alarm system. [101: 33.2.3.4.1.2]

13.7.2.16.1.4* — Smoke Alarms.
Approved smoke alarms shall be provided in accordance with 13.7.1.8, unless otherwise indicated in 13.7.2.16.1.4.1.

Smoke alarms shall be installed on all levels, including basements but excluding crawl spaces and unfinished attics.

Additional smoke alarms shall be installed for living rooms, dens, day rooms, and similar spaces.

Smoke alarms shall be powered from the building electrical system and, when activated, shall initiate an alarm that is audible in all sleeping areas.

Smoke alarms in accordance with 13.7.2.16.1.4.1 shall not be required where buildings are protected throughout by an approved automatic sprinkler system, in accordance with 13.3.2.22.2, that uses quick-response or residential sprinklers, and are protected with approved smoke alarms installed in each sleeping room, in accordance with 13.7.1.8, that are powered by the building electrical system.

Smoke alarms in accordance with 13.7.2.16.1.4.1 shall not be required where buildings are protected throughout by an approved automatic sprinkler system, in accordance with 13.3.2.22.2, that uses quick-response or residential sprinklers, with existing battery-powered smoke alarms in each sleeping room, and where, in the opinion of the AHJ, the facility has demonstrated that testing, maintenance, and a battery replacement program ensure the reliability of power to the smoke alarms.

A fire alarm system in accordance with Section 9.6 of NFPA 101 shall be provided, unless all of the following conditions are met:

1. The facility has an evacuation capability of prompt or slow.
2. Each sleeping room has exterior exit access in accordance with 7.5.3 of NFPA 101.
3. The building does not exceed three stories in height.

Smoke alarms shall be provided in accordance with 13.7.2.16.2.2.1, 13.7.2.16.2.2.2, or 13.7.2.16.2.2.3.

Each sleeping room shall be provided with an approved smoke alarm in accordance with 13.7.1.8 that is powered from the building electrical system.

Existing battery-powered smoke alarms, rather than building electrical service–powered smoke alarms, shall be accepted where, in the opinion of the AHJ, the facility has demonstrated that testing, maintenance, and battery replacement programs ensure the reliability of power to the smoke alarms.

Sleeping room smoke alarms shall not be required in facilities having an existing corridor smoke detection system that complies with Section 13.7 and is connected to the building fire alarm system.

Smoke Detection Systems.
13.7.2.16.2.3.1

All living areas, as defined in 3.3.21.5 of NFPA 101, and all corridors shall be provided with smoke detectors that comply with NFPA 72, and are arranged to initiate an alarm that is audible in all sleeping areas, as modified by 13.7.2.16.2.3.2 and 13.7.2.16.2.3.3. [101: 33.3.4.8.1]

13.7.2.16.2.3.2

Smoke detection systems shall not be required in living areas of buildings having a prompt or slow evacuation capability protected throughout by an approved automatic sprinkler system installed in accordance with 33.3.3.5 of NFPA 101. [101: 33.3.3.4.8.2]

13.7.2.16.2.3.3

Smoke detection systems shall not be required in unenclosed corridors, passageways, balconies, colonnades, or other arrangements with one or more sides along the long dimension fully or extensively open to the exterior at all times. [101: 33.3.3.4.8.3]

13.7.2.16.2.4 — Emergency Forces Notification.

13.7.2.16.2.4.1*

Where the existing fire alarm system does not provide for automatic emergency forces notification in accordance with 13.7.1.10, provisions shall be made for the immediate notification of the public fire department by either telephone or other means, or, where there is no public fire department, notification shall be made to the private fire brigade. [101: 33.3.3.4.6.1]

13.7.2.16.2.4.2

Where a new fire alarm system is installed, or the existing fire alarm system is replaced, emergency forces notification shall be provided in accordance with 13.7.1.10. [101: 33.3.3.4.6.2]

43.7.2.47 — New Mercantile Occupancies.
13.7.2.17.1 - 
Class A mercantile occupancies shall be provided with a fire alarm system in accordance with Section 13.7. and NFPA 101. [101: : 36.3.4.1]

13.7.2.17.2 - 
Malls shall be provided with a fire alarm system in accordance with Section 13.7. [101: : 36.4.4.4.1]

13.7.2.17.3 - 
Bulk merchandising retail buildings shall be provided with a fire alarm system in accordance with Section 13.7. [101: : 36.4.5.4.1]

13.7.2.17.4 - 
Emergency forces notification shall be provided in Class A mercantile occupancies, malls, and bulk merchandising retail buildings, and shall include notifying both of the following:

1. Fire department in accordance with 13.7.1.10
2. Local emergency organization, if provided [101: : 36.3.4.3.2] [101: : 36.4.4.4.3.3] [101: : 36.4.5.4.4]

13.7.2.18 - Existing Mercantile Occupancies.

13.7.2.18.1 - 
Class A mercantile occupancies shall be provided with a fire alarm system in accordance with Section 13.7. and NFPA 101. [101: : 37.3.4.1]

13.7.2.18.2 - 
Malls shall be provided with a fire alarm system in accordance with Section 13.7. [101: : 37.4.4.4.1]

13.7.2.18.3 - 
Bulk merchandising retail buildings shall be provided with a fire alarm system in accordance with Section 13.7. [101: : 37.4.5.4.1]

13.7.2.18.4 - Emergency Forces Notification.

Emergency forces notification shall be provided and shall include notifying both of the following:

1. Fire department in accordance with 13.7.1.10
2. Local emergency organization, if provided

13.7.2.19 - New Business Occupancies.

A fire alarm system in accordance with Section 13.7. and NFPA 101. shall be provided in all business occupancies where any one of the following conditions exists:

1. The building is three or more stories in height.
2. The occupancy is subject to 50 or more occupants above or below the level of exit discharge.
3. The occupancy is subject to 300 or more total occupants. [101: : 38.3.4.1]

13.7.2.20 - Existing Business Occupancies.

A fire alarm system in accordance with Section 13.7. and NFPA 101. shall be provided in all business occupancies where any one of the following conditions exists:

1. The building is three or more stories in height.
2. The occupancy is subject to 100 or more occupants above or below the level of exit discharge.
3. The occupancy is subject to 1000 or more total occupants. [101: : 39.3.4.1]
13.7.2.21 - Industrial Occupancies.
A fire alarm system shall be required in accordance with Section 13.7 and NFPA 101 for industrial occupancies, unless the total occupant load of the building is under 100 persons and unless, of these, fewer than 25 persons are above or below the level of exit discharge. [101: 40.3.4.1]

13.7.2.22 - Storage Occupancies.
13.7.2.22.1 - General.
A fire alarm system shall be required in accordance with Section 13.7 and NFPA 101 for storage occupancies, except as modified by 13.7.2.22.1.1, 13.7.2.22.1.2, and 13.7.2.22.1.3. [101: 42.3.4.1]

13.7.2.22.1.1 - Storage occupancies limited to low hazard contents shall not be required to have a fire alarm system. [101: 42.3.4.1.1]

13.7.2.22.1.2 - Storage occupancies with ordinary or high hazard contents not exceeding an aggregate floor area of 100,000 ft² (9300 m²) shall not be required to have a fire alarm system. [101: 42.3.4.1.2]

13.7.2.22.1.3 - Storage occupancies protected throughout by an approved automatic sprinkler system in accordance with Section 13.3 shall not be required to have a fire alarm system. [101: 42.3.4.1.3]

13.7.2.22.2 - A fire alarm system shall be required in accordance with Section 13.7 for parking structures, except as modified by 13.7.2.22.2.1, 13.7.2.22.2.2, and 13.7.2.22.2.3. [101: 42.3.4.4]

13.7.2.22.2.1 - Parking structures not exceeding an aggregate floor area of 100,000 ft² (9300 m²) shall not be required to have a fire alarm system. [101: 42.3.4.1.1]

13.7.2.22.2.2 - Open parking structures shall not be required to have a fire alarm system. [101: 42.3.4.1.2]

13.7.2.22.2.3 - Parking structures protected throughout by an approved automatic sprinkler system in accordance with Section 13.3 shall not be required to have a fire alarm system. [101: 42.3.4.1.3]

13.7.2.23 - New Day-Care Occupancies.
13.7.2.23.1 - Day-care occupancies, other than day-care occupancies housed in one room having at least one door opening directly to the outside at grade plane or to an exterior exit access balcony in accordance with 14.10.3, shall be provided with a fire alarm system in accordance with Section 13.7 and NFPA 101. [101: 46.3.4.1]

13.7.2.23.2 - Detection.
A smoke detection system in accordance with Section 13.7 and NFPA 101 shall be installed in day-care occupancies, other than those housed in one room having at least one door opening directly to the outside at grade plane or to an exterior exit access balcony in accordance with 14.10.3, and such system shall comply with both of the following:

1. Detectors shall be installed on each story in front of the doors to the stairways and in the corridors of all floors occupied by the day-care occupancy.

2. Detectors shall be installed in lounges, recreation areas, and sleeping rooms in the day-care occupancy. [101: 46.3.4.6]

13.7.2.23.3 - Emergency Forces Notification.
Emergency forces notification shall be accomplished in accordance with 13.7.1.10. [101: 16.3.4.4]

13.7.2.23.4 - Day-Care Homes.
13.7.2.23.4.1
Smoke alarms shall be installed within day-care homes in accordance with 13.7.1.8 and NFPA 101. [1211 : : 16.6.3.4.1]

13.7.2.23.4.2
Where a day-care home is located within a building of another occupancy, such as in an apartment building or office building, any corridors serving the day-care home shall be provided with a smoke detection system in accordance with Section 13.7. [1211 : : 16.6.3.4.2]

13.7.2.23.4.3
Single-station or multiple-station smoke alarms or smoke detectors shall be provided in all rooms used for sleeping in accordance with 13.7.1.8. [1211 : : 16.6.3.4.3]

13.7.2.23.4.4
Single station or multiple station carbon monoxide alarms or detectors shall be provided in accordance with 13.7.1.14 in day-care homes where client sleeping occurs and one or both of the following conditions exists:

1. Fuel-fired equipment is present
2. An enclosed parking structure is attached to the day-care home. [1211 : : 16.6.3.4.5]

13.7.2.24 — Existing Day-Care Occupancies.

13.7.2.24.1
Day-care occupancies, other than day-care occupancies housed in one room, shall be provided with a fire alarm system in accordance with 13.7.1 and NFPA 101. [1211 : : 17.3.4.1]

13.7.2.24.2 — Detection.
A smoke detection system in accordance with Section 13.7 shall be installed in day-care occupancies, other than those housed in one room or those housing clients capable of self-preservation where no sleeping facilities are provided, and such system shall comply with both of the following:

1. Detectors shall be installed on each story in front of the doors to the stairways and in the corridors of all floors occupied by the day-care occupancy.
2. Detectors shall be installed in lounges, recreation areas, and sleeping rooms in the day-care occupancy. [1211 : : 17.3.4.5]

13.7.2.24.3 — Emergency Forces Notification.

13.7.2.24.3.1
Emergency forces notification, other than for day-care occupancies with not more than 100 clients, shall be accomplished in accordance with 13.7.1.10. [1211 : : 17.3.4.4.1]

13.7.2.24.3.2
Emergency forces notification shall be accomplished in accordance with 13.7.1.10 where the existing fire alarm system is replaced. [1211 : : 17.3.4.4.2]

13.7.2.24.4 — Day-Care Homes.

13.7.2.24.4.1
Smoke alarms shall be installed within day-care homes in accordance with 13.7.1.8 and NFPA 101. [1211 : : 17.6.3.4.1]

13.7.2.24.4.2
Where a day-care home is located within a building of another occupancy, such as in an apartment building or office building, any corridors serving the day-care home shall be provided with a smoke detection system in accordance with Section 13.7. [1211 : : 17.6.3.4.2]

13.7.2.24.4.3
Single-station or multiple-station smoke alarms or smoke detectors shall be provided in all rooms used for sleeping in accordance with 13.7.1.8, other than as permitted by 13.7.2.24.4.4. [1211 : : 17.6.3.4.3]
Approved existing battery-powered smoke alarms, rather than house electrical service–powered smoke alarms required by 13.7.2.24.4.3, shall be permitted where the facility has testing, maintenance, and battery replacement programs that ensure reliability of power to the smoke alarms. [101: 17.6.3.4.4]

13.7.2.25 New Ambulatory Health Care Occupancies.

Ambulatory health care facilities shall be provided with fire alarm systems in accordance with Section 13.7 and NFPA 101, except as modified by 20.3.4.2 through 20.3.4.4 of NFPA 101. [101: 20.3.4.1]

13.7.2.26 Emergency forces notification shall be accomplished in accordance with 13.7.1.10. [101: 20.3.4.3.2.1]

13.7.2.27 Existing Ambulatory Health Care Occupancies.

Ambulatory health care facilities shall be provided with fire alarm systems in accordance with Section 13.7 and NFPA 101, except as modified by 21.3.4.2 through 21.3.4.4 of NFPA 101. [101: 21.3.4.1]

Emergency forces notification shall be accomplished in accordance with 13.7.1.10. [101: 21.3.4.3.2.1]

Smoke detection devices or smoke detection systems equipped with reconfirmation features shall not be required to automatically notify the fire department, unless the alarm condition is reconfirmed after a period not exceeding 120 seconds. [101: 21.3.4.3.2.2]

13.7.2.27.1 Detection, Alarm, and Communications Systems.

Towers designed for occupancy by not more than three persons shall be exempt from requirements for detection, alarm, and communications systems. [101: 11.3.3.4]

13.7.2.27.2 New High-Rise Buildings.

A fire alarm system using an approved emergency voice/alarm communication system shall be installed in accordance with Section 13.7 and NFPA 101. [101: 11.8.4.1]

13.7.2.27.2.2 Two-way telephone service shall be in accordance with 13.7.2.27.2.2.1 and 13.7.2.27.2.2.2. [101: 11.8.4.2.2]

13.7.2.27.2.2.1 Two-way telephone communication service shall be provided for fire department use. This system shall be in accordance with NFPA 72. The communications system shall operate between the emergency command center and every elevator car, every elevator lobby, and each floor level of exit stairs. [101: 11.8.4.2.1]

13.7.2.27.2.2.2 The requirement of 13.7.2.27.2.2.1 shall not apply where the fire department radio system is approved as an equivalent system. [101: 11.8.4.2.2]

Supplemental Information

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<tr>
<td>13.7.2_DRAFT-SR_080613.docx</td>
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Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Committee Statement

Committee Statement:  This revision is based on Committee Input CI-128. The SR extracts the 'where required' fire alarm system requirements, including initiation, notification, and annunciation requirements, from NFPA 101 for each occupancy regulated by the Code. The CI was drafted to solicit public comments on the proposed rewrite of 13.7.2; no public comments on the CI were received.

Response Message:  

http://submittals.nfpa.org/TerraViewWeb/ContentFetcher?commentPara...
13.7.2 Where Required and Occupancy Requirements.

13.7.2.1 New Assembly Occupancies.

13.7.2.1.1 General.

13.7.2.1.1.1 New assembly occupancies with occupant loads of more than 300 and all theaters with more than one audience-viewing room shall be provided with an approved fire alarm system in accordance with Section 13.7 and 13.7.2.1, unless otherwise permitted by 13.7.2.1.1.2. [101:12.3.4.1.1]

13.7.2.1.1.2 New assembly occupancies that are a part of a multiple occupancy protected as a mixed occupancy (see 6.1.14) shall be permitted to be served by a common fire alarm system, provided that the individual requirements of each occupancy are met. [101:12.3.4.1.2]

13.7.2.1.2 Initiation.

13.7.2.1.2.1 Initiation of the required fire alarm system shall be by both of the following means:

(1) Manual means in accordance with 13.7.1.7.1(1), unless otherwise permitted by one of the following:

(a) The requirement of 13.7.2.1.2.1(1) shall not apply where initiation is by means of an approved automatic fire detection system in accordance with 13.7.1.7.1(2) that provides fire detection throughout the building.

(b) The requirement of 13.7.2.1.2.1(1) shall not apply where initiation is by means of an approved automatic sprinkler system in accordance with 13.7.1.7.1(3) that provides fire detection and protection throughout the building.

(2) Where automatic sprinklers are provided, initiation of the fire alarm system by sprinkler system waterflow, even where manual fire alarm boxes are provided in accordance with 13.7.2.1.2.1(1) [101:12.3.4.2.1]

13.7.2.1.2.2 The initiating device shall be capable of transmitting an alarm to a receiving station, located within the building, that is constantly attended when the assembly occupancy is occupied. [101:12.3.4.2.2]

13.7.2.1.2.3* In new assembly occupancies with occupant loads of more than 300, automatic detection shall be provided in all hazardous areas that are not normally occupied, unless such areas are protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 13.3. [101:12.3.4.2.3]

13.7.2.1.3 Notification. The required fire alarm system shall activate an audible and visible alarm in a constantly attended receiving station within the building when occupied for purposes of initiating emergency action. [101:12.3.4.3]
13.7.2.1.3.1 Positive alarm sequence in accordance with 13.7.1.9.4 shall be permitted. [101:12.3.4.3.1]

13.7.2.1.3.2 Reserved.

13.7.2.1.3.3 Occupant notification shall be by means of voice announcements in accordance with 13.7.1.9.9, initiated by the person in the constantly attended receiving station. [101:12.3.4.3.3]

13.7.2.1.3.4 Occupant notification shall be by means of visible signals in accordance with 13.7.1.9.5, initiated by the person in the constantly attended receiving station, unless otherwise permitted by 13.7.2.1.3.5. [101:12.3.4.3.4]

13.7.2.1.3.5* Visible signals shall not be required in the assembly seating area, or the floor area used for the contest, performance, or entertainment, where the occupant load exceeds 1000 and an approved, alternative visible means of occupant notification is provided. (See 13.7.1.9.5.7.) [101:12.3.4.3.5]

13.7.2.1.3.6 The announcement shall be permitted to be made via a voice communication or public address system in accordance with 13.7.1.9.9.2. [101:12.3.4.3.6]

13.7.2.1.3.7 Where the authority having jurisdiction determines that a constantly attended receiving station is impractical, both of the following shall be provided:

1. Automatically transmitted evacuation or relocation instructions shall be provided in accordance with NFPA 72, National Fire Alarm and Signaling Code.

2. The system shall be monitored by a supervising station in accordance with NFPA 72. [101:12.3.4.3.7]

13.7.2.2 Existing Assembly Occupancies.

13.7.2.2.1 General.

13.7.2.2.1.1 Existing assembly occupancies with occupant loads of more than 300 and all theaters with more than one audience-viewing room shall be provided with an approved fire alarm system in accordance with Section 13.7 and 13.7.2.2, unless otherwise permitted by 13.7.2.2.1.2, 13.7.2.2.1.3, or 13.7.2.2.1.4. [101:13.3.4.1.1]

13.7.2.2.1.2 Existing assembly occupancies that are a part of a multiple occupancy protected as a mixed occupancy (see 6.1.14) shall be permitted to be served by a common fire alarm system, provided that the individual requirements of each occupancy are met. [101:13.3.4.1.2]

13.7.2.2.1.3 Voice communication or public address systems complying with 13.7.2.2.3.6 shall not be required to comply with Section 13.7. [101:13.3.4.1.3]

13.7.2.2.1.4 The requirement of 13.7.2.2.1.1 shall not apply to existing assembly occupancies where, in the judgment of the authority having jurisdiction, adequate alternative provisions exist or are provided for the discovery of a fire and for alerting the occupants promptly. [101:13.3.4.1.4]
13.7.2.2.2 Initiation.

13.7.2.2.2.1 Initiation of the required fire alarm system shall be by both of the following means, and the system shall be provided with an emergency power source:

(1) Manual means in accordance with 13.7.1.7.1(1), unless otherwise permitted by one of the following:

(a) The requirement of 13.7.2.2.2.1(1) shall not apply where initiation is by means of an approved automatic fire detection system in accordance with 13.7.1.7.1(2) that provides fire detection throughout the building.

(b) The requirement of 13.7.2.2.2.1(1) shall not apply where initiation is by means of an approved automatic sprinkler system in accordance with 13.7.1.7.1(3) that provides fire detection and protection throughout the building.

(2) Where automatic sprinklers are provided, initiation of the fire alarm system by sprinkler system waterflow, even where manual fire alarm boxes are provided in accordance with 13.7.2.2.2.1(1)

[101:13.3.4.2.1]

13.7.2.2.2 The initiating device shall be capable of transmitting an alarm to a receiving station, located within the building, that is constantly attended when the assembly occupancy is occupied. [101:13.3.4.2.2]

13.7.2.2.3* In existing assembly occupancies with occupant loads of more than 300, automatic detection shall be provided in all hazardous areas that are not normally occupied, unless such areas are protected throughout by an approved automatic sprinkler system in accordance with Section 13.3. [101:13.3.4.2.3]

13.7.2.2.3 Notification. The required fire alarm system shall activate an audible alarm in a constantly attended receiving station within the building when occupied for purposes of initiating emergency action. [101:13.3.4.3]

13.7.2.2.3.1 Positive alarm sequence in accordance with 13.7.1.9.4 shall be permitted. [101:13.3.4.3.1]

13.7.2.2.3.2 A presignal system in accordance with 13.7.1.9.3 shall be permitted. [101:13.3.4.3.2]

13.7.2.2.3.3 Occupant notification shall be by means of voice announcements in accordance with 13.7.1.9.9 initiated by the person in the constantly attended receiving station. [101:13.3.4.3.3]

13.7.2.2.3.4 Reserved.

13.7.2.2.3.5 Reserved.

13.7.2.2.3.6 The announcement shall be permitted to be made via a voice communication or public address system in accordance with 13.7.1.9.9.2. [101:13.3.4.3.6]
13.7.2.3.7 Where the authority having jurisdiction determines that a constantly attended receiving station is impractical, automatically transmitted evacuation or relocation instructions shall be provided in accordance with *NFPA 72, National Fire Alarm and Signaling Code.* [101:13.3.4.3.7]

13.7.2.3 New Educational Occupancies.

13.7.2.3.1 General.

13.7.2.3.1.1 New educational occupancies shall be provided with a fire alarm system in accordance with Section 13.7 and 13.7.2.3. [101:14.3.4.1.1]

13.7.2.3.1.2 The requirement of 13.7.2.3.1.1 shall not apply to buildings meeting all of the following criteria:

(1) Buildings having an area not exceeding 1000 ft² (93 m²)
(2) Buildings containing a single classroom
(3) Buildings located not less than 30 ft (9.1 m) from another building

[101:14.3.4.1.2]

13.7.2.3.2 Initiation.

13.7.2.3.2.1 General. Initiation of the required fire alarm system, other than as permitted by 13.7.2.3.2.3, shall be by manual means in accordance with 13.7.1.7.1(1). [101:14.3.4.2.1]

13.7.2.3.2.2 Automatic Initiation. In buildings provided with automatic sprinkler protection, the operation of the sprinkler system shall automatically activate the fire alarm system in addition to the initiation means required in 13.7.2.3.2.1. [101:14.3.4.2.2]

13.7.2.3.2.3 Alternative Protection System. Manual fire alarm boxes shall be permitted to be eliminated in accordance with 13.7.2.3.2.3.1 or 13.7.2.3.2.3.2. [101:14.3.4.2.3]

13.7.2.3.2.3.1* Manual fire alarm boxes shall be permitted to be eliminated where all of the following conditions apply:

(1) Interior corridors are protected by smoke detectors in accordance with Section 13.7.
(2) Auditoriums, cafeterias, and gymnasiums are protected by heat-detection devices or other approved detection devices.
(3) Shops and laboratories involving dusts or vapors are protected by heat-detection devices or other approved detection devices.
(4) Provision is made at a central point to manually activate the evacuation signal or to evacuate only affected areas.

[101:14.3.4.2.3.1]

13.7.2.3.2.3.2* Manual fire alarm boxes shall be permitted to be eliminated where both of the following conditions apply:
(1) The building is protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 13.3.

(2) Provision is made at a central point to manually activate the evacuation signal or to evacuate only affected areas.

13.7.2.3.3 Notification.

13.7.2.3.3.1 Occupant Notification.

13.7.2.3.3.1* Occupant notification shall be accomplished automatically utilizing an emergency voice/alarm communication system in accordance with 13.7.1.9. [101:14.3.4.3.1.1]

13.7.2.3.3.2 The requirement of 13.7.2.3.3.1 shall not apply to buildings having an occupant load of 100 or less. [101:14.3.4.3.1.2]

13.7.2.3.3.3 Positive alarm sequence shall be permitted in accordance with 13.7.1.9.4. [101:14.3.4.3.1.3]

13.7.2.3.3.4 In accordance with 13.7.1.9.10.2, the emergency voice/alarm communication system shall be permitted to be used for other emergency signaling or for class changes. [101:14.3.4.3.1.4]

13.7.2.3.3.5 To prevent students from being returned to a building that is burning, the recall signal shall be separate and distinct from any other signals, and such signal shall be permitted to be given by use of distinctively colored flags or banners. [101:14.3.4.3.1.5]

13.7.2.3.3.6 If the recall signal required by 13.7.2.3.3.5 is electric, the push buttons or other controls shall be kept under lock, the key for which shall be in the possession of the principal or another designated person in order to prevent a recall at a time when there is an actual fire. [101:14.3.4.3.1.6]

13.7.2.3.3.7 Regardless of the method of recall signal, the means of giving the recall signal shall be kept under lock. [101:14.3.4.3.1.7]

13.7.2.3.3.8 Emergency Forces Notification. Emergency forces notification shall be accomplished in accordance with 13.7.1.10. [101:14.3.4.3.2]

13.7.2.3.4 Carbon Monoxide Alarms and Carbon Monoxide Detection Systems.

13.7.2.3.4.1 Carbon monoxide alarms or carbon monoxide detectors in accordance with 13.7.1.14 shall be provided in new educational occupancies in the locations specified as follows:

(1) On the ceilings of rooms containing permanently installed fuel-burning appliances

(2) Centrally located within occupiable spaces served by the first supply air register from a permanently installed, fuel-burning HVAC system

(3) Centrally located within occupiable spaces adjacent to a communicating attached garage

[101:14.3.4.4.1]
13.7.2.3.4.2 Carbon monoxide alarms and carbon monoxide detectors as specified in 13.7.2.3.4.1 shall not be required in the following locations:
(1) Garages
(2) Occupiable spaces with communicating attached garages that are open parking structures as defined in 3.3.191.23.3
(3) Occupiable spaces with communicating attached garages that are mechanically ventilated in accordance with the applicable mechanical code

13.7.2.4 Existing Educational Occupancies.

13.7.2.4.1 General.

13.7.2.4.1.1 Existing educational occupancies shall be provided with a fire alarm system in accordance with Section 13.7 and 13.7.2.4. [101:15.3.4.1.1]

13.7.2.4.1.2 The requirement of 13.7.2.4.1.1 shall not apply to buildings meeting all of the following criteria:
(1) Buildings having an area not exceeding 1000 ft² (93 m²)
(2) Buildings containing a single classroom
(3) Buildings located not less than 30 ft (9.1 m) from another building

13.7.2.4.2 Initiation.

13.7.2.4.2.1 General. Initiation of the required fire alarm system shall be by manual means in accordance with 13.7.1.7(1), unless otherwise permitted by one of the following:
(1) Manual fire alarm boxes shall not be required where permitted by 13.7.2.4.2.3.
(2) In buildings where all normally occupied spaces are provided with a two-way communication system between such spaces and a constantly attended receiving station from where a general evacuation alarm can be sounded, the manual fire alarm boxes shall not be required, except in locations specifically designated by the authority having jurisdiction. [101:15.3.4.2.1]

13.7.2.4.2.2 Automatic Initiation. In buildings provided with automatic sprinkler protection, the operation of the sprinkler system shall automatically activate the fire alarm system in addition to the initiation means required in 13.7.2.4.2.1. [101:15.3.4.2.2]

13.7.2.4.2.3 Alternative Protection System. Manual fire alarm boxes shall be permitted to be eliminated in accordance with 13.7.2.4.2.3.1 or 13.7.2.4.2.3.2. [101:15.3.4.2.3]

13.7.2.4.2.3.1* Manual fire alarm boxes shall be permitted to be eliminated where all of the following conditions apply:
(1) Interior corridors are protected by smoke detectors using an alarm verification system as described in NFPA 72, National Fire Alarm and Signaling Code.

(2) Auditoriums, cafeterias, and gymnasiums are protected by heat-detection devices or other approved detection devices.

(3) Shops and laboratories involving dusts or vapors are protected by heat-detection devices or other approved detection devices.

(4) Provision is made at a central point to manually activate the evacuation signal or to evacuate only affected areas.

[101:15.3.4.2.3.1]

13.7.2.4.2.3.2* Manual fire alarm boxes shall be permitted to be eliminated where both of the following conditions apply:

(1) The building is protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 13.3.

(2) Provision is made at a central point to manually activate the evacuation signal or to evacuate only affected areas.

[101:15.3.4.2.3.2]

13.7.2.4.3 Notification.

13.7.2.4.3.1 Occupant Notification.

13.7.2.4.3.1.1* Occupant notification shall be accomplished automatically in accordance with 13.7.1.9. [101:15.3.4.3.1.1]

13.7.2.4.3.1.2 Reserved.

13.7.2.4.3.1.3 Positive alarm sequence shall be permitted in accordance with 13.7.1.9.4. [101:15.3.4.3.1.3]

13.7.2.4.3.1.4 Where acceptable to the authority having jurisdiction, the fire alarm system shall be permitted to be used for other emergency signaling or for class changes, provided that the fire alarm is distinctive in signal and overrides all other use. [101:15.3.4.3.1.4]

13.7.2.4.3.1.5 To prevent students from being returned to a building that is burning, the recall signal shall be separate and distinct from any other signals, and such signal shall be permitted to be given by use of distinctively colored flags or banners. [101:15.3.4.3.1.5]

13.7.2.4.3.1.6 If the recall signal required by 13.7.2.4.3.1.5 is electric, the push buttons or other controls shall be kept under lock, the key for which shall be in the possession of the principal or another designated person in order to prevent a recall at a time when there is an actual fire. [101:15.3.4.3.1.6]

13.7.2.4.3.1.7 Regardless of the method of recall signal, the means of giving the recall signal shall be kept under lock. [101:15.3.4.3.1.7]
13.7.2.4.3.2 Emergency Forces Notification.

13.7.2.4.3.2.1 Wherever any of the school authorities determine that an actual fire exists, they shall immediately call the local fire department using the public fire alarm system or other available facilities. [101:15.3.4.3.2.1]

13.7.2.4.3.2.2 Emergency forces notification shall be accomplished in accordance with 13.7.1.10 where the existing fire alarm system is replaced. [101:15.3.4.3.2.2]

13.7.2.5 New Day-Care Occupancies.

13.7.2.5.1 General. New day-care occupancies, other than day-care occupancies housed in one room having at least one door opening directly to the outside at grade plane or to an exterior exit access balcony in accordance with 14.10.3, shall be provided with a fire alarm system in accordance with Section 13.7 and 13.7.2.5. [101:16.3.4.1]

13.7.2.5.2 Initiation. Initiation of the required fire alarm system shall be by manual means and by operation of any required smoke detectors and required sprinkler systems. (See 13.7.2.5.5.) [101:16.3.4.2]

13.7.2.5.3 Occupant Notification.

13.7.2.5.3.1 Occupant notification shall be in accordance with 13.7.1.9. [101:16.3.4.3.1]

13.7.2.5.3.2 Positive alarm sequence shall be permitted in accordance with 13.7.1.9.4. [101:16.3.4.3.2]

13.7.2.5.3.3 Private operating mode in accordance with 13.7.1.9.6.3 shall be permitted. [101:16.3.4.3.3]

13.7.2.5.4 Emergency Forces Notification. Emergency forces notification shall be accomplished in accordance with 13.7.1.10. [101:16.3.4.4]

13.7.2.5.5 Detection. A smoke detection system in accordance with 13.7.1 shall be installed in new day-care occupancies, other than those housed in one room having at least one door opening directly to the outside at grade plane or to an exterior exit access balcony in accordance with 14.10.3, and such system shall comply with both of the following:

(1) Detectors shall be installed on each story in front of the doors to the stairways and in the corridors of all floors occupied by the day-care occupancy.

(2) Detectors shall be installed in lounges, recreation areas, and sleeping rooms in the day-care occupancy. [101:16.3.4.5]

13.7.2.6 Existing Day-Care Occupancies.

13.7.2.6.1 General. Existing day-care occupancies, other than day-care occupancies housed in one room, shall be provided with a fire alarm system in accordance with Section 13.7 and 13.7.2.6. [101:17.3.4.1]
13.7.2.6.2 Initiation. Initiation of the required fire alarm system shall be by manual means and by operation of any required smoke detectors and required sprinkler systems. (See 13.7.2.6.5.)

13.7.2.6.3 Occupant Notification.

13.7.2.6.3.1 Occupant notification shall be in accordance with 13.7.1.9. [101:17.3.4.3.1]

13.7.2.6.3.2 Positive alarm sequence shall be permitted in accordance with 13.7.1.9.4. [101:17.3.4.3.2]

13.7.2.6.3.3 Private operating mode in accordance with 13.7.1.9.6.3 shall be permitted. [101:17.3.4.3.3]

13.7.2.6.4 Emergency Forces Notification.

13.7.2.6.4.1 Emergency forces notification, other than for day-care occupancies with not more than 100 clients, shall be accomplished in accordance with 13.7.1.10. [101:17.3.4.4.1]

13.7.2.6.4.2 Emergency forces notification shall be accomplished in accordance with 13.7.1.10 where the existing fire alarm system is replaced. [101:17.3.4.4.2]

13.7.2.6.5 Detection. A smoke detection system in accordance with 13.7.1 shall be installed in existing day-care occupancies, other than those housed in one room or those housing clients capable of self-preservation where no sleeping facilities are provided, and such system shall comply with both of the following:

(1) Detectors shall be installed on each story in front of the doors to the stairways and in the corridors of all floors occupied by the day-care occupancy.

(2) Detectors shall be installed in lounges, recreation areas, and sleeping rooms in the day-care occupancy.

[101:17.3.4.5]

13.7.2.7 New Health Care Occupancies.

13.7.2.7.1 General. New health care occupancies shall be provided with a fire alarm system in accordance with Section 13.7 and 13.7.2.7. [101:18.3.4.1]

13.7.2.7.2* Initiation.

13.7.2.7.2.1 Initiation of the required fire alarm systems shall be by manual means in accordance with 13.7.1.7 and by means of any required sprinkler system waterflow alarms, detection devices, or detection systems, unless otherwise permitted by 13.7.2.7.2.2 and 13.7.2.7.2.3. [101:18.3.4.2.1]

13.7.2.7.2.2 Manual fire alarm boxes in patient sleeping areas shall not be required at exits if located at all nurses’ control stations or other continuously attended staff location, provided that both of the following criteria are met:

(1) Such manual fire alarm boxes are visible and continuously accessible.
Travel distances required by 13.7.1.7.5 are not exceeded. [101:18.3.4.2.2]

13.7.2.7.2.3 The system smoke detector installed in accordance with 18.3.2.5.3(13) of NFPA 101 shall not be required to initiate the fire alarm system. [101:18.3.4.2.3]

13.7.2.7.3 Notification. Positive alarm sequence in accordance with 13.7.1.9.4 shall be permitted. [101:18.3.4.3]

13.7.2.7.3.1 Occupant Notification. Occupant notification shall be accomplished automatically in accordance with 13.7.1.9, unless otherwise modified by the following:

(1) Paragraph 13.7.1.9.2.3 shall not be permitted to be used.

(2)* In lieu of audible alarm signals, visible alarm-indicating appliances shall be permitted to be used in critical care areas.

(3) The provision of 18.3.2.5.3(13)(c) of NFPA 101 shall be permitted to be used. [101:18.3.4.3.1]

13.7.2.7.3.2 Emergency Forces Notification.

13.7.2.7.3.2.1 Emergency forces notification shall be accomplished in accordance with 13.7.1.4.11, except that the provision of 18.3.2.5.3(13)(d) of NFPA 101 shall be permitted to be used. [101:18.3.4.3.2.1]

13.7.2.7.3.2.2 Reserved.

13.7.2.7.3.3 Annunciation and Annunciation Zoning.

13.7.2.7.3.3.1 Annunciation and annunciation zoning shall be provided in accordance with 13.7.1.13, unless otherwise permitted by 13.7.2.7.3.3.2 or 13.7.2.7.3.3.3. [101:18.3.4.3.3.1]

13.7.2.7.3.3.2 The alarm zone shall be permitted to coincide with the permitted area for smoke compartments. [101:18.3.4.3.3.2]

13.7.2.7.3.3.3 The provision of 13.7.1.13.9.4, which permits sprinkler system waterflow to be annunciated as a single building zone, shall be prohibited. [101:18.3.4.3.3.3]

13.7.2.7.4 Fire Safety Functions. Operation of any activating device in the required fire alarm system shall be arranged to accomplish automatically any control functions to be performed by that device. (See 13.7.1.11.) [101:18.3.4.4]

13.7.2.7.5 Detection.

13.7.2.7.5.1 General. Detection systems, where required, shall be in accordance with Section 13.7. [101:18.3.4.5.1]

13.7.2.7.5.2 Detection in Spaces Open to Corridors. See 18.3.6.1 of NFPA 101. [101:18.3.4.5.2]
13.7.2.7.5.3* Nursing Homes. An approved automatic smoke detection system shall be installed in corridors throughout smoke compartments containing patient sleeping rooms and in spaces open to corridors as permitted in nursing homes by 18.3.6.1 of NFPA 101, unless otherwise permitted by one of the following:

1) Corridor systems shall not be required where each patient sleeping room is protected by an approved smoke detection system.

2) Corridor systems shall not be required where patient room doors are equipped with automatic door-closing devices with integral smoke detectors on the room side installed in accordance with their listing, provided that the integral detectors provide occupant notification.

[101:18.3.4.5.3]

13.7.2.8 Existing Health Care Occupancies.

13.7.2.8.1 General. Existing health care occupancies shall be provided with a fire alarm system in accordance with Section 13.7 and 13.7.2.8. [101:19.3.4.1]

13.7.2.8.2* Initiation.

13.7.2.8.2.1 Initiation of the required fire alarm systems shall be by manual means in accordance with 13.7.1.7 and by means of any required sprinkler system waterflow alarms, detection devices, or detection systems, unless otherwise permitted by 13.7.2.8.2.2 through 13.7.2.8.2.5. [101:19.3.4.2.1]

13.7.2.8.2.2 Manual fire alarm boxes in patient sleeping areas shall not be required at exits if located at all nurses’ control stations or other continuously attended staff location, provided that both of the following criteria are met:

1) Such manual fire alarm boxes are visible and continuously accessible.

2) Travel distances required by 13.7.1.7.5 are not exceeded.

[101:19.3.4.2.2]

13.7.2.8.2.3 The system smoke detector installed in accordance with 19.3.2.5.3(13) of NFPA 101 shall not be required to initiate the fire alarm system. [101:19.3.4.2.3]

13.7.2.8.2.4 Fixed extinguishing systems protecting commercial cooking equipment in kitchens that are protected by a complete automatic sprinkler system shall not be required to initiate the fire alarm system. [101:19.3.4.2.4]

13.7.2.8.2.5 Detectors required by 19.7.5.3 and 19.7.5.5 of NFPA 101 shall not be required to initiate the fire alarm system. [101:19.3.4.2.5]

13.7.2.8.3 Notification. Positive alarm sequence in accordance with 13.7.1.9.4 shall be permitted in health care occupancies protected throughout by an approved, supervised automatic sprinkler system in accordance with NFPA 13. [101:19.3.4.3]
13.7.2.8.3.1 **Occupant Notification.** Occupant notification shall be accomplished automatically in accordance with 13.7.1.9, unless otherwise modified by the following:

(1) In lieu of audible alarm signals, visible alarm-indicating appliances shall be permitted to be used in critical care areas.

(2) Where visual devices have been installed in patient sleeping areas in place of an audible alarm, they shall be permitted where approved by the authority having jurisdiction.

(3) The provision of 19.3.2.5.3(13)(c) of NFPA 101 shall be permitted to be used.

13.7.2.8.3.2 **Emergency Forces Notification.**

13.7.2.8.3.2.1 Emergency forces notification shall be accomplished in accordance with 13.7.1.10, except that the provision of 19.3.2.5.3(13)(d) of NFPA 101 shall be permitted to be used.

13.7.2.8.3.2.2 Smoke detection devices or smoke detection systems equipped with reconfirmation features shall not be required to automatically notify the fire department, unless the alarm condition is reconfirmed after a period not exceeding 120 seconds.

13.7.2.8.3.3 Reserved.

13.7.2.8.4 **Fire Safety Functions.** Operation of any activating device in the required fire alarm system shall be arranged to accomplish automatically any control functions to be performed by that device. *(See 13.7.1.11.)*

13.7.2.8.5 **Detection.**

13.7.2.8.5.1 **Corridors.** An approved automatic smoke detection system in accordance with Section 13.7 shall be installed in all corridors of limited care facilities, unless otherwise permitted by one of the following:

(1) Where each patient sleeping room is protected by an approved smoke detection system, and a smoke detector is provided at smoke barriers and horizontal exits in accordance with Section 13.7, the corridor smoke detection system shall not be required on the patient sleeping room floors.

(2) Smoke compartments protected throughout by an approved, supervised automatic sprinkler system in accordance with 13.3.2.12.7 shall be permitted.

13.7.2.9 **New Ambulatory Health Care Occupancies.**
13.7.2.9.1 General. New ambulatory health care facilities shall be provided with fire alarm systems in accordance with Section 13.7 and 13.7.2.9, except as modified by 13.7.2.9.2 through 13.7.2.9.4. [101:20.3.4.1]

13.7.2.9.2 Initiation. Initiation of the required fire alarm systems shall be by manual means in accordance with 13.7.1.7 and by means of any detection devices or detection systems required. [101:20.3.4.2]

13.7.2.9.3 Notification. Positive alarm sequence in accordance with 13.7.1.9.4 shall be permitted. [101:20.3.4.3]

13.7.2.9.3.1 Occupant Notification. Occupant notification shall be accomplished automatically, without delay, in accordance with 13.7.1.9 upon operation of any fire alarm activating device. [101:20.3.4.3.1]

13.7.2.9.3.2 Emergency Forces Notification.

13.7.2.9.3.2.1 Emergency forces notification shall be accomplished in accordance with 13.7.1.10. [101:20.3.4.3.2.1]

13.7.2.9.3.2.2 Reserved.

13.7.2.9.4 Fire Safety Functions. Operation of any activating device in the required fire alarm system shall be arranged to accomplish automatically, without delay, any control functions required to be performed by that device. (See 13.7.1.11.) [101:20.3.4.4]

13.7.2.10 Existing Ambulatory Health Care Occupancies.

13.7.2.10.1 General. Existing ambulatory health care facilities shall be provided with fire alarm systems in accordance with Section 13.7 and 13.7.2.10, except as modified by 13.7.2.10.2 through 13.7.2.10.4. [101:21.3.4.1]

13.7.2.10.2 Initiation. Initiation of the required fire alarm systems shall be by manual means in accordance with 13.7.1.7 and by means of any detection devices or detection systems required. [101:21.3.4.2]

13.7.2.10.3 Notification. Positive alarm sequence in accordance with 13.7.1.9.4 shall be permitted. [101:21.3.4.3]

13.7.2.10.3.1 Occupant Notification. Occupant notification shall be accomplished automatically, without delay, in accordance with 13.7.1.9 upon operation of any fire alarm activating device. [101:21.3.4.3.1]

13.7.2.10.3.2 Emergency Forces Notification.

13.7.2.10.3.2.1 Emergency forces notification shall be accomplished in accordance with 13.7.1.10. [101:21.3.4.3.2.1]

13.7.2.10.3.2.2 Smoke detection devices or smoke detection systems equipped with reconfirmation features shall not be required to automatically notify the fire department, unless the alarm condition is reconfirmed after a period not exceeding 120 seconds. [101:21.3.4.3.2.2]
13.7.2.10.4 Fire Safety Functions. Operation of any activating device in the required fire alarm system shall be arranged to accomplish automatically, without delay, any control functions required to be performed by that device. (See 13.7.1.11.) [101:21.3.4.4]

13.7.2.11 New Detention and Correctional Occupancies.

13.7.2.11.1 General. New detention and correctional occupancies shall be provided with a fire alarm system in accordance with Section 13.7 and 13.7.2.11, except as modified by 13.7.2.11.2 through 13.7.2.11.4.3. [101:22.3.4.1]

13.7.2.11.2 Initiation. Initiation of the required fire alarm system shall be by manual means in accordance with 13.7.1.7, by means of any required detection devices or detection systems, and by means of waterflow alarm in the sprinkler system required by 13.3.2.13.1, unless otherwise permitted by the following:

(1) Manual fire alarm boxes shall be permitted to be locked, provided that staff is present within the area when it is occupied and staff has keys readily available to unlock the boxes.

(2) Manual fire alarm boxes shall be permitted to be located in a staff location, provided that both of the following criteria are met:

   (a) The staff location is attended when the building is occupied.

   (b) The staff attendant has direct supervision of the sleeping area.

[101:22.3.4.2]

13.7.2.11.3 Notification.

13.7.2.11.3.1 Occupant Notification. Occupant notification shall be accomplished automatically in accordance with 13.7.1.9, and the following also shall apply:

(1) A positive alarm sequence shall be permitted in accordance with 13.7.1.9.4.

(2)* Any smoke detectors required by this chapter shall be permitted to be arranged to alarm at a constantly attended location only and shall not be required to accomplish general occupant notification.

[101:22.3.4.3.1]

13.7.2.11.3.2 Emergency Forces Notification.

13.7.2.11.3.2.1 Fire department notification shall be accomplished in accordance with 13.7.1.10, unless otherwise permitted by one of the following:

(1) A positive alarm sequence shall be permitted in accordance with 13.7.1.9.4.

(2) Any smoke detectors required by this chapter shall not be required to transmit an alarm to the fire department.

(3) This requirement shall not apply where staff is provided at a constantly attended location that meets one of the following criteria:
(a) It has the capability to promptly notify the fire department.

(b) It has direct communication with a control room having direct access to the fire department.

[101:22.3.4.3.2.1]

13.7.2.11.3.2.2 Where the provision of 13.7.2.11.3.2.1(3) is utilized, the fire plan, as required by 20.7.2.1.3, shall include procedures for logging of alarms and immediate notification of the fire department. [101:22.3.4.3.2.2]

13.7.2.11.4* Detection. An approved automatic smoke detection system shall be in accordance with Section 13.7, as modified by 13.7.2.11.4.1 through 13.7.2.11.4.3, throughout all resident sleeping areas and adjacent day rooms, activity rooms, or contiguous common spaces. [101:22.3.4.4]

13.7.2.11.4.1 Smoke detectors shall not be required in sleeping rooms with four or fewer occupants. [101:22.3.4.4.1]

13.7.2.11.4.2 Other arrangements and positioning of smoke detectors shall be permitted to prevent damage or tampering, or for other purposes. [101:22.3.4.4.2]

13.7.2.11.4.2.1 Other arrangements, as specified in 13.7.2.11.4.2, shall be capable of detecting any fire, and the placement of detectors shall be such that the speed of detection is equivalent to that provided by the spacing and arrangements required by the installation standards referenced in Section 13.7. [101:22.3.4.4.2.1]

13.7.2.11.4.2.2 Detectors shall be permitted to be located in exhaust ducts from cells, behind grilles, or in other locations. [101:22.3.4.4.2.2]

13.7.2.11.4.2.3 The equivalent performance of the design permitted by 13.7.2.11.4.2.2 shall be acceptable to the authority having jurisdiction in accordance with the equivalency concepts specified in Section 1.4. [101:22.3.4.4.2.3]

13.7.2.11.4.3* Smoke detectors shall not be required in Use Condition II open dormitories where staff is present within the dormitory whenever the dormitory is occupied. [101:22.3.4.4.3]

13.7.2.12 Existing Detention and Correctional Occupancies.

13.7.2.12.1 General. Existing detention and correctional occupancies shall be provided with a fire alarm system in accordance with Section 13.7 and 13.7.2.12, except as modified by 13.7.2.12.2 through 13.7.2.12.4.4. [101:23.3.4.1]

13.7.2.12.2 Initiation. Initiation of the required fire alarm system shall be by manual means in accordance with 13.7.1.7 and by means of any required detection devices or detection systems, unless otherwise permitted by the following:

(1) Manual fire alarm boxes shall be permitted to be locked, provided that staff is present within the area when it is occupied and staff has keys readily available to unlock the boxes.

(2) Manual fire alarm boxes shall be permitted to be located in a staff location, provided that both of the following criteria are met:
(a) The staff location is attended when the building is occupied.
(b) The staff attendant has direct supervision of the sleeping area.

101:23.3.4.2

13.7.2.12.3 Notification.

13.7.2.12.3.1 Occupant Notification. Occupant notification shall be accomplished automatically in accordance with 13.7.1.9, and the following also shall apply:

(1) A positive alarm sequence shall be permitted in accordance with 13.7.1.9.4.

(2)* Any smoke detectors required by this chapter shall be permitted to be arranged to alarm at a constantly attended location only and shall not be required to accomplish general occupant notification.

101:23.3.4.3.1

13.7.2.12.3.2 Emergency Forces Notification.

13.7.2.12.3.2.1 Fire department notification shall be accomplished in accordance with 13.7.1.10, unless otherwise permitted by one of the following:

(1) A positive alarm sequence shall be permitted in accordance with 13.7.1.9.4.

(2) Any smoke detectors required by this chapter shall not be required to transmit an alarm to the fire department.

(3) This requirement shall not apply where staff is provided at a constantly attended location that meets one of the following criteria:

(a) It has the capability to promptly notify the fire department.

(b) It has direct communication with a control room having direct access to the fire department.

101:23.3.4.3.2.1

13.7.2.12.3.2.2 Where the provision of 13.7.2.12.3.2.1(3) is utilized, the fire plan, as required by 20.7.2.1.3, shall include procedures for logging of alarms and immediate notification of the fire department. [101:23.3.4.3.2.2]

13.7.2.12.4 Detection. An approved automatic smoke detection system shall be in accordance with Section 13.7, as modified by 13.7.2.12.4.1 through 13.7.2.12.4.4, throughout all resident housing areas. [101:23.3.4.4]

13.7.2.12.4.1 Smoke detectors shall not be required in sleeping rooms with four or fewer occupants in Use Condition II or Use Condition III. [101:23.3.4.4.1]

13.7.2.12.4.2 Other arrangements and positioning of smoke detectors shall be permitted to prevent damage or tampering, or for other purposes. [101:23.3.4.4.2]
13.7.2.12.4.2.1 Other arrangements, as specified in 13.7.2.12.4.2, shall be capable of detecting any fire, and the placement of detectors shall be such that the speed of detection is equivalent to that provided by the spacing and arrangements required by the installation standards referenced in Section 13.7. [101:23.3.4.4.2.1]

13.7.2.12.4.2.2 Detectors shall be permitted to be located in exhaust ducts from cells, behind grilles, or in other locations. [101:23.3.4.4.2.2]

13.7.2.12.4.2.3 The equivalent performance of the design permitted by 13.7.2.12.4.2.2 shall be acceptable to the authority having jurisdiction in accordance with the equivalency concepts specified in Section 1.4. [101:23.3.4.4.2.3]

13.7.2.12.4.3* Smoke detectors shall not be required in Use Condition II open dormitories where staff is present within the dormitory whenever the dormitory is occupied and the building is protected throughout by an approved, supervised automatic sprinkler system in accordance with 23.3.5.3. [101:23.3.4.4.3]

13.7.2.12.4.4 In smoke compartments protected throughout by an approved automatic sprinkler system in accordance with 13.3.2.14.2, smoke detectors shall not be required, except in corridors, common spaces, and sleeping rooms with more than four occupants. [101:23.3.4.4.4]

13.7.2.13 New and Existing One- and Two Family Dwellings.

13.7.2.13.1 Smoke alarms or a smoke detection system shall be provided in accordance with either 13.7.2.13.1.1 or 13.7.2.13.1.2, as modified by 13.7.2.13.1.3. [101:24.3.4.1]

13.7.2.13.1.1* Smoke alarms shall be installed in accordance with 13.7.1.8 in all of the following locations:

(1) All sleeping rooms

(2)* Outside of each separate sleeping area, in the immediate vicinity of the sleeping rooms

(3) On each level of the dwelling unit, including basements

[101:24.3.4.1.1]

13.7.2.13.1.2 Dwelling units shall be protected by an approved smoke detection system in accordance with Section 13.7 and equipped with an approved means of occupant notification. [101:24.3.4.1.2]

13.7.2.13.1.3 In existing one- and two-family dwellings, approved smoke alarms powered by batteries shall be permitted. [101:24.3.4.1.3]

13.7.2.13.2 Carbon Monoxide and Carbon Monoxide Detection Systems.

13.7.2.13.2.1 Carbon monoxide alarms or carbon monoxide detectors in accordance with 13.7.1.14 and 13.7.2.13.2 shall be provided in new one- and two-family dwellings where either of the following conditions exists:

(1) Dwelling units with communicating attached garages, unless otherwise exempted by 13.7.2.13.2.3
(2) Dwelling units containing fuel-burning appliances or fuel-burning fireplaces

Where required by 13.7.2.13.2.1, carbon monoxide alarms or carbon monoxide detectors shall be installed in the following locations:

(1) Outside of each separate dwelling unit sleeping area in the immediate vicinity of the sleeping rooms

(2) On every occupiable level of a dwelling unit, including basements, and excluding attics and crawl spaces

Carbon monoxide alarms and carbon monoxide detectors as specified in 13.7.2.13.2.1(1) shall not be required in the following locations:

(1) In garages

(2) Within dwelling units with communicating attached garages that are open parking structures as defined by the building code

(3) Within dwelling units with communicating attached garages that are mechanically ventilated in accordance with the mechanical code

New and Existing Lodging or Rooming Houses.

General.

New and existing lodging or rooming houses, other than those meeting 13.7.2.14.1.2, shall be provided with a fire alarm system in accordance with Section 13.7. [101:26.3.4.1.1]

A fire alarm system in accordance with Section 13.7 shall not be required in existing lodging or rooming houses that have an existing smoke detection system meeting or exceeding the requirements of 13.7.2.14.5.1 where that detection system includes not less than one manual fire alarm box per floor arranged to initiate the smoke detection alarm. [101:26.3.4.1.2]

Initiation. Initiation of the required fire alarm system shall be by manual means in accordance with 13.7.1.7, or by alarm initiation in accordance with 13.7.1.7.1(3) in buildings protected throughout by an approved automatic sprinkler system in accordance with 13.3.2.19. [101:26.3.4.2]

Notification. Occupant notification shall be provided automatically in accordance with 13.7.1.9, as modified by 13.7.2.14.3.1 and 13.7.2.14.3.2. [101:26.3.4.3]

Visible signals for the hearing impaired shall not be required where the proprietor resides in the building and there are five or fewer rooms for rent. [101:26.3.4.3.1]
13.7.2.14.3.2 Positive alarm sequence in accordance with 13.7.1.9.4 shall be permitted. [101:26.3.4.3.2]

13.7.2.14.4 Detection. (Reserved)

13.7.2.14.5 Smoke Alarms.

13.7.2.14.5.1 Approved smoke alarms, other than existing smoke alarms meeting the requirements of 13.7.2.14.5.3, shall be installed in accordance with 13.7.1.8 in every sleeping room. [101:26.3.4.5.1]

13.7.2.14.5.2 In other than existing buildings, the smoke alarms required by 13.7.2.14.5.1 shall be interconnected in accordance with 13.7.1.8.3. [101:26.3.4.5.2]

13.7.2.14.5.3 Existing battery-powered smoke alarms, rather than house electric-powered smoke alarms, shall be permitted where the facility has demonstrated to the authority having jurisdiction that the testing, maintenance, and battery replacement programs will ensure reliability of power to the smoke alarms. [101:26.3.4.5.3]


13.7.2.14.6.1 Carbon monoxide alarms or carbon monoxide detectors in accordance with 13.7.1.14 and 13.7.2.14.6 shall be provided in new lodging or rooming houses where either of the following conditions exists:

(1) Lodging or rooming houses with communicating attached garages, unless otherwise exempted by 13.7.2.14.6.3

(2) Lodging or rooming houses containing fuel-burning appliances or fuel-burning fireplaces

[101:26.3.4.6.1]

13.7.2.14.6.2* Where required by 13.7.2.14.6.1, carbon monoxide alarms or carbon monoxide detectors shall be installed in the following locations:

(1) Outside of each separate sleeping area in the immediate vicinity of the sleeping rooms

(2) On every occupiable level, including basements, and excluding attics and crawl spaces

[101:26.3.4.6.2]

13.7.2.14.6.3 Carbon monoxide alarms and carbon monoxide detectors as specified in 13.7.2.14.6.1(1) shall not be required in the following locations:

(1) In garages

(2) Within lodging or rooming houses with communicating attached garages that are open parking structures as defined by the building code

(3) Within lodging or rooming houses with communicating attached garages that are mechanically ventilated in accordance with the mechanical code
13.7.2.15 New Hotels and Dormitories.

13.7.2.15.1 General. A fire alarm system in accordance with Section 13.7, except as modified by 13.7.2.15.2 through 13.7.2.15.6, shall be provided. [101:28.3.4.1]

13.7.2.15.2 Initiation. The required fire alarm system shall be initiated by each of the following:

1. Manual means in accordance with 13.7.1.7
2. Manual fire alarm box located at the hotel 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

13.7.2.15.3 Notification.

13.7.2.15.3.1* Occupant notification shall be provided automatically in accordance with 13.7.1.9. [101:28.3.4.3.1]

13.7.2.15.3.2 Positive alarm sequence in accordance with 13.7.1.9.4 shall be permitted. [101:28.3.4.3.2]

13.7.2.15.3.3* Guest rooms and guest suites specifically required and equipped to accommodate hearing-impaired individuals shall be provided with a visible notification appliance. [101:28.3.4.3.3]

13.7.2.15.3.4 In occupiable areas, other than guest rooms and guest suites, visible notification appliances shall be provided. [101:28.3.4.3.4]

13.7.2.15.3.5 Annunciation and annunciation zoning in accordance with 13.7.1.13 shall be provided in buildings three or more stories in height or having more than 50 guest rooms or guest suites. Annunciation shall be provided at a location readily accessible from the primary point of entry for emergency response personnel. [101:28.3.4.3.5]

13.7.2.15.3.6 Emergency forces notification shall be provided in accordance with 13.7.1.10. [101:28.3.4.3.6]

13.7.2.15.4 Detection. A corridor smoke detection system in accordance with Section 13.7 shall be provided in buildings other than those protected throughout by an approved, supervised automatic sprinkler system in accordance with 13.3.2.15. [101:28.3.4.4]

13.7.2.15.5* Smoke Alarms. Smoke alarms shall be installed in accordance with 13.7.1.8 in every guest room and every living area and sleeping room within a guest suite. [101:28.3.4.5]

13.7.2.15.6 Carbon Monoxide Alarms and Carbon Monoxide Detection Systems.
13.7.2.15.6.1 Carbon monoxide alarms or carbon monoxide detectors in accordance with 13.7.1.14 and 13.7.2.15.6 shall be provided in new hotels and dormitories where either of the following conditions exists:

1. Guest rooms or guest suites with communicating attached garages, unless otherwise exempted by 13.7.2.15.6.3
2. Guest rooms or guest suites containing a permanently installed fuel-burning appliance or fuel-burning fireplace

[101:28.3.4.6.1]

13.7.2.15.6.2 Where required by 13.7.2.15.6.1, carbon monoxide alarms or carbon monoxide detectors shall be installed in the following locations:

1. Outside of each separate guest room or guest suite sleeping area in the immediate vicinity of the sleeping rooms
2. On every occupiable level of a guest room and guest suite

[101:28.3.4.6.2]

13.7.2.15.6.3 Carbon monoxide alarms and carbon monoxide detectors as specified in 13.7.2.15.6.1(1) shall not be required in the following locations:

1. In garages
2. Within guest rooms or guest suites with communicating attached garages that are open parking structures as defined by the building code
3. Within guest rooms or guest suites with communicating attached garages that are mechanically ventilated in accordance with the mechanical code

[101:28.3.4.6.3]

13.7.2.15.6.4 Where fuel-burning appliances or fuel-burning fireplaces are installed outside guest rooms or guest suites, carbon monoxide alarms or carbon monoxide detectors shall be installed in accordance with the manufacturer’s published instructions in the locations specified as follows:

1. On the ceilings of rooms containing permanently installed fuel-burning appliances or fuel-burning fireplaces
2. Centrally located within occupiable spaces served by the first supply air register from a permanently installed, fuel-burning HVAC system
3. Centrally located within occupiable spaces adjacent to a communicating attached garage

[101:28.3.4.6.4]

13.7.2.16 Existing Hotels and Dormitories.
13.7.2.16.1 General. A fire alarm system in accordance with Section 13.7, except as modified by 13.7.2.16.2 through 13.7.2.16.5, shall be provided in buildings, other than those where each guest room has exterior exit access in accordance with 14.10.3 and the building is three or fewer stories in height. [101:29.3.4.1]

13.7.2.16.2 Initiation. The required fire alarm system shall be initiated by each of the following:

1. Manual means in accordance with 13.7.1.7, unless there are other effective means to activate the fire alarm system, such as complete automatic sprinkler or automatic detection systems, with manual fire alarm box in accordance with 13.7.2.16.2(2) required

2. Manual fire alarm box located at the hotel 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

13.7.2.16.3 Notification.

13.7.2.16.3.1 Occupant notification shall be provided automatically in accordance with 13.7.1.9. [101:29.3.4.3.1]

13.7.2.16.3.2 Positive alarm sequence in accordance with 13.7.1.9.4, and a presignal system in accordance with 13.7.1.9.3, shall be permitted. [101:29.3.4.3.2]

13.7.2.16.3.3 Reserved.

13.7.2.16.3.4 Reserved.

13.7.2.16.3.5 Reserved.

13.7.2.16.3.6* Where the existing fire alarm system does not provide for automatic emergency forces notification in accordance with 13.7.1.10, provisions shall be made for the immediate notification of the public fire department by telephone or other means in case of fire, and, where there is no public fire department, notification shall be made to the private fire brigade. [101:29.3.4.3.6]

13.7.2.16.3.7 Where a new fire alarm system is installed or the existing fire alarm system is replaced, emergency forces notification shall be provided in accordance with 13.7.1.10. [101:29.3.4.3.7]

13.7.2.16.4 Detection. (Reserved)

13.7.2.16.5* Smoke Alarms. An approved single-station smoke alarm shall be installed in accordance with 13.7.1.8 in every guest room and every living area and sleeping room within a guest suite. [101:29.3.4.5]

13.7.2.16.5.1 The smoke alarms shall not be required to be interconnected. [101:29.3.4.5.1]
13.7.2.16.5.2 Single-station smoke alarms without a secondary (standby) power source shall be permitted. [101:29.3.4.5.2]

13.7.2.17 New Apartment Buildings.

13.7.2.17.1 General.

13.7.2.17.1.1 New apartment buildings four or more stories in height or with more than 11 dwelling units, other than those meeting the requirements of 13.7.2.17.1.2, shall be provided with a fire alarm system in accordance with Section 13.7, except as modified by 13.7.2.17.2 through 13.7.2.17.5. [101:30.3.4.1.1]

13.7.2.17.1.2 A fire alarm system shall not be required in buildings where each dwelling unit is separated from other contiguous dwelling units by fire barriers (see Section 12.7) having a minimum 1-hour fire resistance rating, and where each dwelling unit has either its own independent exit or its own independent stairway or ramp discharging at the finished ground level. [101:30.3.4.1.2]

13.7.2.17.2 Initiation.

13.7.2.17.2.1 Initiation of the required fire alarm system shall be by manual means in accordance with 13.7.1.7, unless the building complies with 13.7.2.17.2.2. [101:30.3.4.2.1]

13.7.2.17.2.2 Initiation of the required fire alarm system by manual means shall not be required in buildings four or fewer stories in height, containing not more than 16 dwelling units, and protected throughout by an approved, supervised automatic sprinkler system installed in accordance with 13.3.2.17. [101:30.3.4.2.2]

13.7.2.17.2.3 In buildings protected throughout by an approved, supervised automatic sprinkler system in accordance with 13.3.2.17, required fire alarm systems shall be initiated upon operation of the automatic sprinkler system. [101:30.3.4.2.3]

13.7.2.17.3 Notification.

13.7.2.17.3.1 Occupant notification shall be provided automatically in accordance with Section 13.7, and both of the following shall also apply:

(1) Visible signals shall be installed in units designed for the hearing impaired.

(2) Positive alarm sequence in accordance with 13.7.1.9.4 shall be permitted.

[101:30.3.4.3.1]

13.7.2.17.3.2 Annunciation, and annunciation zoning, in accordance with 13.7.1.13 shall be provided, unless the building complies with either 13.7.2.17.3.3 or 13.7.2.17.3.4. Annunciation shall be provided at a location readily accessible from the primary point of entry for emergency response personnel. [101:30.3.4.3.2]

13.7.2.17.3.3 Annunciation, and annunciation zoning, shall not be required in buildings two or fewer stories in height and having not more than 50 dwelling units. [101:30.3.4.3.3]
13.7.2.17.3.4  Annunciation, and annunciation zoning, shall not be required in buildings four or fewer stories in height containing not more than 16 dwelling units and protected throughout by an approved, supervised automatic sprinkler system installed in accordance with 13.3.2.17. [101:30.3.4.3.4]

13.7.2.17.3.5  Emergency forces notification shall be accomplished in accordance with 13.7.1.10. [101:30.3.4.3.5]

13.7.2.17.4  Detection. (Reserved)

13.7.2.17.5* Smoke Alarms. Smoke alarms shall be installed in accordance with 13.7.1.8 in every sleeping area, outside every sleeping area in the immediate vicinity of the bedrooms, and on all levels of the dwelling unit, including basements. [101:30.3.4.5]

13.7.2.17.6  Carbon Monoxide Alarms and Carbon Monoxide Detection Systems.

13.7.2.17.6.1  Carbon monoxide alarms or carbon monoxide detectors in accordance with 13.7.1.14 and 13.7.2.17.6 shall be provided in new apartment buildings where either of the following conditions exists:

(1) Dwelling units with communicating attached garages, unless otherwise exempted by 13.7.2.17.6.3

(2) Dwelling units containing a permanently installed fuel-burning appliance or fuel-burning fireplace

[101:30.3.4.6.1]

13.7.2.17.6.2  Where required by 13.7.2.17.6.1, carbon monoxide alarms or carbon monoxide detectors shall be installed in the following locations:

(1) Outside of each separate dwelling unit sleeping area in the immediate vicinity of the sleeping rooms

(2) On every occupiable level of a dwelling unit

[101:30.3.4.6.2]

13.7.2.17.6.3  Carbon monoxide alarms and carbon monoxide detectors as specified in 13.7.2.17.6.1(1) shall not be required in the following locations:

(1) In garages

(2) Within dwelling units with communicating attached garages that are open parking structures as defined by the building code

(3) Within dwelling units with communicating attached garages that are mechanically ventilated in accordance with the mechanical code

[101:30.3.4.6.3]
Where fuel-burning appliances or fuel-burning fireplaces are installed outside dwelling units, carbon monoxide alarms or carbon monoxide detectors shall be installed in accordance with the manufacturer’s published instructions in the locations specified as follows:

1. On the ceilings of rooms containing permanently installed fuel-burning appliances or fuel-burning fireplaces

2. Centrally located within occupiable spaces served by the first supply air register from a permanently installed, fuel-burning HVAC system

3. Centrally located within occupiable spaces adjacent to a communicating attached garage

13.7.2.18 Existing Apartment Buildings.

13.7.2.18.1 General.

13.7.2.18.1.1 Existing apartment buildings four or more stories in height or with more than 11 dwelling units, other than those meeting the requirements of 13.7.2.18.1.2, shall be provided with a fire alarm system in accordance with Section 13.7, except as modified by 13.7.2.18.2 through 13.7.2.18.5.

13.7.2.18.1.2 A fire alarm system shall not be required where each dwelling unit is separated from other contiguous dwelling units by fire barriers (see Section 12.7) having a minimum ½-hour fire resistance rating, and where each dwelling unit has either its own independent exit or its own independent stairway or ramp discharging at the finished ground level.

13.7.2.18.2 Initiation.

13.7.2.18.2.1 Initiation of the required fire alarm system shall be by manual means in accordance with 13.7.1.7, unless the building complies with 13.7.2.18.2.2.

13.7.2.18.2.2 Initiation of the required fire alarm system by manual means shall not be required in buildings four or fewer stories in height, containing not more than 16 dwelling units, and protected throughout by an approved, supervised automatic sprinkler system installed in accordance with 13.3.2.18.

13.7.2.18.2.3 In buildings using Option 2 as defined by NFPA 101, the required fire alarm system shall be initiated by the automatic fire detection system in addition to the manual initiation means of 13.7.2.18.2.1.

13.7.2.18.2.4 In buildings using Option 3 as defined by NFPA 101, the required fire alarm system shall be initiated upon operation of the automatic sprinkler system in addition to the manual initiation means of 13.7.2.18.2.1.

13.7.2.18.2.5 In buildings using Option 4 as defined by NFPA 101, the required fire alarm system shall be initiated upon operation of the automatic sprinkler system in addition to the manual initiation means of 13.7.2.18.2.1.

13.7.2.18.3 Notification.
13.7.2.18.3.1 Occupant notification shall be provided automatically in accordance with Section 13.7, and all of the following shall also apply:

(1) Visible signals shall be installed in units designed for the hearing impaired.

(2) Positive alarm sequence in accordance with 13.7.1.9.4 shall be permitted.

(3) Existing approved presignal systems shall be permitted in accordance with 13.7.1.9.3.

13.7.2.18.3.2 An annunciator panel, whose location shall be approved by the authority having jurisdiction, connected with the required fire alarm system shall be provided, unless the building meets the requirements of 13.7.2.18.3.3 or 13.7.2.18.3.4.

13.7.2.18.3.3 Annunciation shall not be required in buildings two or fewer stories in height and having not more than 50 rooms.

13.7.2.18.3.4 Annunciation shall not be required in buildings four or fewer stories in height containing not more than 16 dwelling units and protected throughout by an approved, supervised automatic sprinkler system installed in accordance with 13.3.2.18.

13.7.2.18.3.5 Emergency forces notification shall be accomplished in accordance with 13.7.1.10.

13.7.2.18.4 Detection.

13.7.2.18.4.1* In buildings using Option 2 as defined by NFPA 101, a complete automatic fire detection system in accordance with 9.6.2.9 of NFPA 101 and 13.7.2.18.4.2 shall be required.

13.7.2.18.4.2 Automatic fire detection devices shall be installed as follows:

(1) Smoke detectors shall be installed in all common areas and work spaces outside the living unit, such as exit stairs, egress corridors, lobbies, storage rooms, equipment rooms, and other tenantless spaces in environments that are suitable for proper smoke detector operation.

(2) Heat detectors shall be located within each room of the living unit.

13.7.2.18.5 Smoke Alarms.

13.7.2.18.5.1* In buildings other than those equipped throughout with an existing, complete automatic smoke detection system, smoke alarms shall be installed in accordance with 13.7.1.8, as modified by 13.7.2.18.5.2, outside every sleeping area in the immediate vicinity of the bedrooms and on all levels of the dwelling unit, including basements.

13.7.2.18.5.2 Smoke alarms required by 13.7.2.18.5.1 shall not be required to be provided with a secondary (standby) power source.
13.7.2.18.5.3 In buildings other than those equipped throughout with an existing, complete automatic smoke detection system or a complete, supervised automatic sprinkler system in accordance with 13.3.2.18, smoke alarms shall be installed in every sleeping area in accordance with 13.7.1.8, as modified by 13.7.2.18.5.4. [101:31.3.4.5.3]

13.7.2.18.5.4 Smoke alarms required by 13.7.2.18.5.3 shall be permitted to be battery powered. [101:31.3.4.5.4]

13.7.2.19 New, Small (Not More Than 16 Residents) Residential Board and Care Occupancies.

13.7.2.19.1 General. A manual fire alarm system shall be provided in accordance with Section 13.7. [101:32.2.3.4.1]

13.7.2.19.2 Occupant Notification. Occupant notification shall be provided automatically, without delay, in accordance with 13.7.1.9. [101:32.2.3.4.2]

13.7.2.19.3 Smoke Alarms.

13.7.2.19.3.1 Approved smoke alarms shall be provided in accordance with 13.7.1.8. [101:32.2.3.4.3.1]

13.7.2.19.3.2 Smoke alarms shall be installed on all levels, including basements but excluding crawl spaces and unfinished attics. [101:32.2.3.4.3.2]

13.7.2.19.3.3 Additional smoke alarms shall be installed in all living areas, as defined in 3.3.21.5 of NFPA 101. [101:32.2.3.4.3.3]

13.7.2.19.3.4 Each sleeping room shall be provided with an approved smoke alarm in accordance with 13.7.1.8. [101:32.2.3.4.3.4]

13.7.2.20 New, Large (More than 16 Residents) Residential Board and Care Occupancies.

13.7.2.20.1 General. A fire alarm system shall be provided in accordance with Section 13.7. [101:32.3.3.4.1]

13.7.2.20.2 Initiation. The required fire alarm system shall be initiated by each of the following:

(1) Manual means in accordance with 13.7.1.7

(2) Manual fire alarm box located at a convenient central control point under continuous supervision of responsible employees

(3) Required automatic sprinkler system

(4) Required detection system [101:32.3.3.4.2]

13.7.2.20.3 Annunciator Panel. An annunciator panel, connected to the fire alarm system, shall be provided at a location readily accessible from the primary point of entry for emergency response personnel. [101:32.3.3.4.3]
13.7.2.20.4 Occupant Notification. Occupant notification shall be provided automatically, without delay, in accordance with 13.7.1.9. [101:32.3.3.4.4]

13.7.2.20.5 High-Rise Buildings. High-rise buildings shall be provided with an approved emergency voice communication/alarm system in accordance with 13.7.2.29.2. [101:32.3.3.4.5]

13.7.2.20.6* Emergency Forces Notification. Emergency forces notification shall meet the following requirements:

(1) Emergency forces notification shall be accomplished in accordance with 13.7.1.10.

(2) Smoke detection devices or smoke detection systems shall be permitted to initiate a positive alarm sequence in accordance with 13.7.1.9.4 for not more than 120 seconds. [101:32.3.3.4.6]

13.7.2.20.7 Smoke Alarms. Approved smoke alarms shall be installed in accordance with 13.7.1.8 inside every sleeping room, outside every sleeping area in the immediate vicinity of the bedrooms, and on all levels within a resident unit. [101:32.3.3.4.7]

13.7.2.20.8 Smoke Detection Systems.

13.7.2.20.8.1 Corridors and spaces open to the corridors, other than those meeting the requirement of 13.7.2.20.8.3, shall be provided with smoke detectors that comply with NFPA 72, National Fire Alarm and Signaling Code, and are arranged to initiate an alarm that is audible in all sleeping areas. [101:32.3.3.4.8.1]

13.7.2.20.8.2 Reserved.

13.7.2.20.8.3 Smoke detection systems shall not be required in unenclosed corridors, passageways, balconies, colonnades, or other arrangements with one or more sides along the long dimension fully or extensively open to the exterior at all times. [101:32.3.3.4.8.3]

13.7.2.21 Existing, Small (Not More Than 16 Residents) Residential Board and Care Occupancies.

13.7.2.21.1 Fire Alarm Systems. A manual fire alarm system shall be provided in accordance with Section 13.7, unless the provisions of 13.7.2.21.1.1 or 13.7.2.21.1.2 are met. [101:33.2.3.4.1]

13.7.2.21.1.1 A fire alarm system shall not be required where interconnected smoke alarms complying with 13.7.2.21.3, and not less than one manual fire alarm box per floor arranged to continuously sound the smoke detector alarms, are provided. [101:33.2.3.4.1.1]

13.7.2.21.1.2 Other manually activated continuously sounding alarms acceptable to the authority having jurisdiction shall be permitted in lieu of a fire alarm system. [101:33.2.3.4.1.2]

13.7.2.21.2 Occupant Notification. Occupant notification shall be in accordance with 13.7.1.9. [101:33.2.3.4.2]

13.7.2.21.3* Smoke Alarms.
13.7.2.21.3.1 Approved smoke alarms shall be provided in accordance with 13.7.1.8, unless otherwise indicated in 13.7.2.21.3.6 and 13.7.2.21.3.7. \[101:33.2.3.4.3.1\]

13.7.2.21.3.2 Smoke alarms shall be installed on all levels, including basements but excluding crawl spaces and unfinished attics. \[101:33.2.3.4.3.2\]

13.7.2.21.3.3 Additional smoke alarms shall be installed for living rooms, dens, day rooms, and similar spaces. \[101:33.2.3.4.3.3\]

13.7.2.21.3.4 Reserved.

13.7.2.21.3.5 Smoke alarms shall be powered from the building electrical system and, when activated, shall initiate an alarm that is audible in all sleeping areas. \[101:33.2.3.4.3.5\]

13.7.2.21.3.6 Smoke alarms in accordance with 13.7.2.21.3.1 shall not be required where buildings are protected throughout by an approved automatic sprinkler system, in accordance with 13.3.2.22.2, that uses quick-response or residential sprinklers, and are protected with approved smoke alarms installed in each sleeping room, in accordance with 13.7.1.8, that are powered by the building electrical system. \[101:33.2.3.4.3.6\]

13.7.2.21.3.7 Smoke alarms in accordance with 13.7.2.21.3.1 shall not be required where buildings are protected throughout by an approved automatic sprinkler system, in accordance with 13.3.2.22.2, that uses quick-response or residential sprinklers, with existing battery-powered smoke alarms in each sleeping room, and where, in the opinion of the authority having jurisdiction, the facility has demonstrated that testing, maintenance, and a battery replacement program ensure the reliability of power to the smoke alarms. \[101:33.2.3.4.3.7\]

13.7.2.22 Existing, Large (More Than 16 Residents) Residential Board and Care Occupancies.

13.7.2.22.1 General. A fire alarm system in accordance with Section 13.7 shall be provided, unless all of the following conditions are met:

(1) The facility has an evacuation capability of prompt or slow.

(2) Each sleeping room has exterior exit access in accordance with 14.10.3.

(3) The building does not exceed three stories in height. \[101:33.3.3.4.1\]

13.7.2.22.2 Initiation. The required fire alarm system shall be initiated by each of the following means:

(1) Manual means in accordance with 13.7.1.7, unless there are other effective means (such as a complete automatic sprinkler or detection system) for notification of fire as required

(2) Manual fire alarm box located at a convenient central control point under continuous supervision of responsible employees

(3) Automatic sprinkler system, other than that not required by another section of this Code
(4) Required detection system, other than sleeping room smoke alarms

**13.7.2.22.3  Reserved.**

**13.7.2.22.4  Occupant Notification.** Occupant notification shall be provided automatically, without delay, by internal audible alarm in accordance with 13.7.1.9. [101:33.3.3.4.4]

**13.7.2.22.5  Reserved.**

**13.7.2.22.6  Emergency Forces Notification.**

**13.7.2.22.6.1** Where the existing fire alarm system does not provide for automatic emergency forces notification in accordance with 13.7.1.10, provisions shall be made for the immediate notification of the public fire department by either telephone or other means, or, where there is no public fire department, notification shall be made to the private fire brigade. [101:33.3.3.4.6.1]

**13.7.2.22.6.2** Where a new fire alarm system is installed, or the existing fire alarm system is replaced, emergency forces notification shall be provided in accordance with 13.7.1.10. [101:33.3.3.4.6.2]

**13.7.2.22.7  Smoke Alarms.** Smoke alarms shall be provided in accordance with 13.7.2.22.7.1, 13.7.2.22.7.2, or 13.7.2.22.7.3. [101:33.3.3.4.7]

**13.7.2.22.7.1** Each sleeping room shall be provided with an approved smoke alarm in accordance with 13.7.1.8 that is powered from the building electrical system. [101:33.3.3.4.7.1]

**13.7.2.22.7.2** Existing battery-powered smoke alarms, rather than building electrical service–powered smoke alarms, shall be accepted where, in the opinion of the authority having jurisdiction, the facility has demonstrated that testing, maintenance, and battery replacement programs ensure the reliability of power to the smoke alarms. [101:33.3.3.4.7.2]

**13.7.2.22.7.3** Sleeping room smoke alarms shall not be required in facilities having an existing corridor smoke detection system that complies with Section 13.7 and is connected to the building fire alarm system. [101:33.3.3.4.7.3]

**13.7.2.22.8  Smoke Detection Systems.**

**13.7.2.22.8.1** All living areas, as defined in 3.3.21.5 of NFPA 101, and all corridors shall be provided with smoke detectors that comply with NFPA 72, National Fire Alarm and Signaling Code, and are arranged to initiate an alarm that is audible in all sleeping areas, as modified by 13.7.2.22.8.2 and 13.7.2.22.8.3. [101:33.3.3.4.8.1]

**13.7.2.22.8.2** Smoke detection systems shall not be required in living areas of buildings having a prompt or slow evacuation capability protected throughout by an approved automatic sprinkler system installed in accordance with 13.3.2.22.1. [101:33.3.3.4.8.2]

**13.7.2.22.8.3** Smoke detection systems shall not be required in unenclosed corridors, passageways, balconies, colonnades, or other arrangements with one or more sides along the long dimension fully or extensively open to the exterior at all times. [101:33.3.3.4.8.3]
13.7.2.23 New Mercantile Occupancies.

13.7.2.23.1 General. New Class A mercantile occupancies shall be provided with a fire alarm system in accordance with Section 13.7. [101:36.3.4.1]

13.7.2.23.2 Initiation. Initiation of the required fire alarm system shall be by any one of the following means:

(1) Manual means in accordance with 13.7.1.7.1(1)

(2) Approved automatic fire detection system in accordance with 13.7.1.7.1(2) that provides protection throughout the building, and the provision of 13.7.1.7.6 shall apply.

(3) Approved automatic sprinkler system in accordance with 13.7.1.7.1(3) that provides protection throughout the building, and the provision of 13.7.1.7.6 shall apply.

[101:36.3.4.2]

13.7.2.23.3 Notification.

13.7.2.23.3.1 Occupant Notification. During all times that the mercantile occupancy is occupied, the required fire alarm system, once initiated, shall perform one of the following functions:

(1) It shall activate an alarm in accordance with 13.7.1.9 throughout the mercantile occupancy.

(2) Positive alarm sequence in accordance with 13.7.1.9.4 shall be permitted.

[101:36.3.4.3.1]

13.7.2.23.3.2 Emergency Forces Notification. Emergency forces notification shall be provided and shall include notifying both of the following:

(1) Fire department in accordance with 13.7.1.10

(2) Local emergency organization, if provided

[101:36.3.4.3.2]

13.7.2.24 Existing Mercantile Occupancies.

13.7.2.24.1 General. Existing Class A mercantile occupancies shall be provided with a fire alarm system in accordance with Section 13.7. [101:37.3.4.1]

13.7.2.24.2 Initiation. Initiation of the required fire alarm system shall be by one of the following means:

(1) Manual means in accordance with 13.7.1.7.1(1)

(2) Approved automatic fire detection system in accordance with 13.7.1.7.1(2) that provides protection throughout the building, and the provision of 13.7.1.7.6 shall apply.

(3) Approved automatic sprinkler system in accordance with 13.7.1.7.1(3) that provides protection throughout the building, and the provision of 13.7.1.7.6 shall apply.
13.7.2.24.3 Notification.

13.7.2.24.3.1 Occupant Notification. During all times that the mercantile occupancy is occupied, the required fire alarm system, once initiated, shall perform one of the following functions:

(1) It shall activate an alarm in accordance with 13.7.1.9 throughout the mercantile occupancy, and both of the following also shall apply:
   (a) Positive alarm sequence in accordance with 13.7.1.9.4 shall be permitted.
   (b) A presignal system in accordance with 13.7.1.9.3 shall be permitted.

(2) Occupant notification shall be made via a voice communication or public address system in accordance with 13.7.1.9.9.2

13.7.2.24.3.2 Emergency Forces Notification. Emergency forces notification shall be provided and shall include notifying both of the following:

(1) Fire department in accordance with 13.7.1.10

(2) Local emergency organization, if provided

13.7.2.25 New Business Occupancies.

13.7.2.25.1 General. A fire alarm system in accordance with Section 13.7 shall be provided in all new business occupancies where any one of the following conditions exists:

(1) The building is three or more stories in height.

(2) The occupancy is subject to 50 or more occupants above or below the level of exit discharge.

(3) The occupancy is subject to 300 or more total occupants.

13.7.2.25.2 Initiation. Initiation of the required fire alarm system shall be by one of the following means:

(1) Manual means in accordance with 13.7.1.7.1(1)

(2) Approved automatic fire detection system in accordance with 13.7.1.7.1(2) that provides protection throughout the building and the provision of 13.7.1.7.6 shall apply.

(3) An approved automatic sprinkler system in accordance with 13.7.1.7.1(3) that provides protection throughout the building and the provision of 13.7.1.7.6 shall apply.
13.7.2.25.3 Occupant Notification. During all times that the building is occupied (see 7.2.1.1.3 of NFPA 101), the required fire alarm system, once initiated, shall perform one of the following functions:

1. It shall activate a general alarm in accordance with 13.7.1.9

2. A positive alarm sequence in accordance with 13.7.1.9.4 shall be permitted.

13.7.2.25.4 Emergency Forces Notification. Emergency forces notification shall be provided and shall include notifying both of the following:

1. Fire department in accordance with 13.7.1.10

2. Approved local emergency organization, if provided

13.7.2.26 Existing Business Occupancies.

13.7.2.26.1 General. A fire alarm system in accordance with Section 13.7 shall be provided in all existing business occupancies where any one of the following conditions exists:

1. The building is three or more stories in height.

2. The occupancy is subject to 100 or more occupants above or below the level of exit discharge.

3. The occupancy is subject to 1000 or more total occupants.

13.7.2.26.2 Initiation. Initiation of the required fire alarm system shall be by one of the following means:

1. Manual means in accordance with 13.7.1.7.1(1)

2. Approved automatic fire detection system in accordance with 13.7.1.7.1(2) that provides protection throughout the building and the provision of 13.7.1.7.6 shall apply.

3. Approved automatic sprinkler system in accordance with 13.7.1.7.1(3) that provides protection throughout the building and the provision of 13.7.1.7.6 shall apply.

13.7.2.26.3 Occupant Notification. During all times that the building is occupied (see 7.2.1.1.3 of NFPA 101), the required fire alarm system, once initiated, shall perform one of the following functions:

1. It shall activate a general alarm in accordance with 13.7.1.9, and both of the following also shall apply:
(a) Positive alarm sequence in accordance with 13.7.1.9.4 shall be permitted.

(b) A presignal system in accordance with 13.7.1.9.3 shall be permitted.

(2) Occupant notification shall be permitted to be made via a voice communication or public address system in accordance with 13.7.1.9.9.2.

13.7.2.26.4 Emergency Forces Notification. Emergency forces notification shall be accomplished in accordance with 13.7.1.10 when the existing fire alarm system is replaced.

13.7.2.27 New and Existing Industrial Occupancies.

13.7.2.27.1 General. A fire alarm system shall be required in accordance with Section 13.7 for new and existing industrial occupancies, unless the total occupant load of the building is under 100 persons and unless, of these, fewer than 25 persons are above or below the level of exit discharge.

13.7.2.27.2 Initiation. Initiation of the required fire alarm system shall be by any of the following means:

(1) Manual means in accordance with 13.7.1.7.1(1)

(2) Approved automatic fire detection system in accordance with 13.7.1.7.1(2) throughout the building, plus a minimum of one manual fire alarm box in accordance with 13.7.1.7.6

(3) Approved, supervised automatic sprinkler system in accordance with 13.7.1.7.1(3) throughout the building, plus a minimum of one manual fire alarm box in accordance with 13.7.1.7.6

13.7.2.27.3 Notification.

13.7.2.27.3.1 The required fire alarm system shall meet one of the following criteria:

(1) It shall provide occupant notification in accordance with 13.7.1.9.

(2) It shall sound an audible and visible signal in a constantly attended location for the purposes of initiating emergency action.

13.7.2.27.3.2 Positive alarm sequence in accordance with 13.7.1.9.4 shall be permitted.

13.7.2.27.3.3 Existing presignal systems in accordance with 13.7.1.9.3 shall be permitted.
13.7.2.27.3.4 In high hazard industrial occupancies, as described in 40.1.2.1.3 of NFPA 101, the required fire alarm system shall automatically initiate an occupant evacuation alarm signal in accordance with 13.7.1.9. [101:40.3.4.3.4]

13.7.2.28 New and Existing Storage Occupancies.

13.7.2.28.1 General. A fire alarm system shall be required in accordance with Section 13.7 for new and existing storage occupancies, except as modified by 13.7.2.28.1.1, 13.7.2.28.1.2, and 13.7.2.28.1.3. [101:42.3.4.1]

13.7.2.28.1.1 Storage occupancies limited to low hazard contents shall not be required to have a fire alarm system. [101:42.3.4.1.1]

13.7.2.28.1.2 Storage occupancies with ordinary or high hazard contents not exceeding an aggregate floor area of 100,000 ft² (9300 m²) shall not be required to have a fire alarm system. [101:42.3.4.1.2]

13.7.2.28.1.3 Storage occupancies protected throughout by an approved automatic sprinkler system in accordance with Section 13.3 shall not be required to have a fire alarm system. [101:42.3.4.1.3]

13.7.2.28.2 Initiation. Initiation of the required fire alarm system shall be by any of the following means:

(1) Manual means in accordance with 13.7.1.7.1(1)

(2) Approved automatic fire detection system in accordance with 13.7.1.7.1(2) throughout the building, plus a minimum of one manual fire alarm box in accordance with 13.7.1.7.6

(3) Approved, supervised automatic sprinkler system in accordance with 13.7.1.7.1(3) throughout the building, plus a minimum of one manual fire alarm box in accordance with 13.7.1.7.6

[101:42.3.4.2]

13.7.2.28.3 Notification.

13.7.2.28.3.1 The required fire alarm system shall meet one of the following criteria:

(1) It shall provide occupant notification in accordance with 13.7.1.9.

(2) It shall sound an audible and visible signal in a constantly attended location for the purposes of initiating emergency action.

[101:42.3.4.3.1]

13.7.2.28.3.2 Positive alarm sequence in accordance with 13.7.1.9.4 shall be permitted.

[101:42.3.4.3.2]

13.7.2.28.3.3 Existing presignal systems in accordance with 13.7.1.9.3 shall be permitted.

[101:42.3.4.3.3]
13.7.2.28.3.4  In high hazard storage occupancies, the required fire alarm system shall automatically initiate an occupant evacuation alarm signal in accordance with 13.7.1.9. [101:42.3.4.3.4]

13.7.2.29  Special Structures and High-Rise Buildings.

13.7.2.29.1  Detection, Alarm, and Communications Systems. Towers as defined in 3.3.281 and designed for occupancy by not more than three persons shall be exempt from requirements for detection, alarm, and communications systems. [101:11.3.3.4]

13.7.2.29.2  New High-Rise Buildings.

13.7.2.29.2.1*  A fire alarm system using an approved emergency voice/alarm communication system shall be installed in accordance with Section 13.7 and NFPA 101. [101:11.8.4.1]

13.7.2.29.2.2  Two-way telephone service shall be in accordance with 13.7.2.29.2.2.1 and 13.7.2.29.2.2.2. [101:11.8.4.2]

13.7.2.29.2.2.1  Two-way telephone communication service shall be provided for fire department use. This system shall be in accordance with NFPA 72. The communications system shall operate between the emergency command center and every elevator car, every elevator lobby, and each floor level of exit stairs. [101:11.8.4.2.1]

13.7.2.29.2.2.2*  The requirement of 13.7.2.29.2.2.1 shall not apply where the fire department radio system is approved as an equivalent system. [101:11.8.4.2.2]
A.13.7.2.1.2.3
The intent is to require detectors only in nonsprinklered hazardous areas that are unoccupied. When the building is occupied, the detectors in the unoccupied, unsprinklered hazardous areas will initiate occupant notification. If the building is unoccupied, the fire in the nonsprinklered hazardous area is not a life safety issue, and the detectors, upon activation, are not required to notify anyone. The signal from a detector is permitted to be sent to a control panel in an area that is occupied when the building is occupied, but that is unoccupied when the building is unoccupied, without the need for central station monitoring or the equivalent. [101: A.12.3.4.2.3]

A.13.7.2.1.3.5
Examples of devices that might be used to provide alternative visible means include scoreboards, message boards, and other electronic devices. [101: A.12.3.4.3.5]

A.13.7.2.2.2.3
The intent is to require detectors only in nonsprinklered hazardous areas that are unoccupied. Where the building is occupied, the detectors in the unoccupied, unsprinklered hazardous areas will initiate occupant notification. If the building is unoccupied, the fire in the nonsprinklered hazardous area is not a life safety issue, and the detectors, upon activation, are not required to notify anyone. The signal from a detector is permitted to be sent to a control panel in an area that is occupied when the building is occupied, but that is unoccupied when the building is unoccupied, without the need for central station monitoring or the equivalent. [101: A.13.3.4.2.3]

A.13.7.2.3.2.3.1
Occupied portions of the building should have access to a central point for manual activation of the evacuation signal. [101: A.14.3.4.2.3.1]

A.13.7.2.3.2.3.2
Occupied portions of the building should have access to a central point for manual activation of the evacuation signal. [101: A.14.3.4.2.3.2]

A.13.7.2.4.2.3.1
Occupied portions of the building should have access to a central point for manual activation of the evacuation signal. [101: A.15.3.4.2.3.1]

A.13.7.2.4.2.3.2
Occupied portions of the building should have access to a central point for manual activation of the evacuation signal. [101: A.15.3.4.2.3.2]

A.13.7.2.4.3.1.1
The audible occupant notification signal for evacuation of an educational occupancy building should be the distinctive three-pulse temporal pattern fire alarm evacuation signal that is required of new systems by NFPA 72, National Fire Alarm and Signaling Code. The temporal pattern will help educate students to recognize the need to evacuate when they are in other occupancies. Existing fire alarm systems should be modified, as feasible, to sound the three-pulse temporal pattern. [101: A.15.3.4.3.1.1]
A.13.7.2.7.2
It is not the intent of this Code to require single-station smoke alarms that might be required by local codes to be connected to or to initiate the building fire alarm system. [101: A.18.3.4.2]

A.13.7.2.7.3.1(2)
It is the intent of this provision to permit a visible fire alarm signal instead of an audible signal to reduce interference between the fire alarm and medical equipment monitoring alarms. [101: A.18.3.4.3.1(2)]

A.13.7.2.7.5.3
The requirement for smoke detectors in spaces open to the corridors eliminates the requirements of 18.3.6.1(1)(c), (2)(b), and (5)(b) of NFPA 101 for direct supervision by the facility staff of nursing homes. [101: A.18.3.4.5.3]
A.13.7.2.8.2

It is not the intent of this Code to require single-station smoke alarms, which might be required by local codes, to be connected to or to initiate the building fire alarm system. [101: A.19.3.4.2]

A.13.7.2.8.3.1(1)

It is the intent of this provision to permit a visible fire alarm signal instead of an audible signal to reduce interference between the fire alarm and medical equipment monitoring alarms. [101: A.19.3.4.3.1(1)]

A.13.7.2.11.3.1(2)

The staff at the constantly attended location should have the capability to promptly initiate the general alarm function and contact the fire department or have direct communication with a control room or other location that can initiate the general alarm function and contact the fire department. [101: A.22.3.4.3.1(2)]

A.13.7.2.11.4

Examples of contiguous common spaces are galleries and corridors. [101: A.22.3.4.4]

A.13.7.2.11.4.3

An open dormitory is a dormitory that is arranged to allow staff to observe the entire dormitory area at one time. [101: A.22.3.4.4.3]

A.13.7.2.12.3.1(2)

The staff at the constantly attended location should have the capability to promptly initiate the general alarm function and contact the fire department or have direct communication with a control room or other location that can initiate the general alarm function and contact the fire department. [101: A.23.3.4.3.1(2)]

A.13.7.2.12.4.3

An open dormitory is a dormitory that is arranged to allow staff to observe the entire dormitory area at one time. [101: A.23.3.4.4.3]
A.13.7.2.13.1.1
Paragraph 11.5.1.3 of NFPA 72, National Fire Alarm and Signaling Code, contains related requirements. They specify that, where the interior floor area for a given level of a dwelling unit, excluding garage areas, is greater than 1000 ft² (93 m²), smoke alarms are to be installed as follows:

(1) All points on the ceiling are to have a smoke alarm within a distance of 30 ft (9.1 m), measured along a path of travel, or to have one smoke alarm per 500 ft² (46.5 m²) of floor area, which is calculated by dividing the total interior floor area per level by 500 ft² (46.5 m²).

(2) Where dwelling units include great rooms or vaulted/cathedral ceilings extending over multiple floors, smoke alarms located on the upper floor that are intended to protect the aforementioned area are permitted to be considered as part of the lower floor(s) protection scheme used to meet the requirements of A.13.7.2.13.1.1 (1). [101: A.24.3.4.1.1]

A.13.7.2.13.1.1(2)
Paragraphs 11.5.1.1(2) and 11.5.1.2 of NFPA 72, National Fire Alarm and Signaling Code, contain related requirements. The requirement of 11.5.1.1(2) specifies that an alarm is to be installed outside of each separate dwelling unit sleeping area, within 21 ft (6.4 m) of any door to a sleeping room, with the distance measured along a path of travel. The requirement in 11.5.1.2 of NFPA 72 specifies that, where the area addressed in 11.5.1.1(2) of NFPA 72 is separated from the adjacent living areas by a door, a smoke alarm is to be installed in the area between the door and the sleeping rooms, and additional alarms are to be installed on the living area side of the door. [101: A.24.3.4.1.1(2)]

A.13.7.2.13.2.2
The placement requirements of NFPA 720, Standard for the Installation of Carbon Monoxide (CO) Detection and Warning Equipment, are modified specifically for one- and two-family dwellings as required by this Code and do not affect other regulations within a jurisdiction. [101: A.24.3.4.2.2]

A.13.7.2.14.3.1
The proprietor is the owner or owner’s agent with responsible charge. [101: A.26.3.4.3.1]

A.13.7.2.14.6.2
The placement requirements of NFPA 720, Standard for the Installation of Carbon Monoxide (CO) Detection and Warning Equipment, are modified to accommodate lodging or rooming house occupancies that are part of multiple occupancy buildings (e.g., an on-call physicians’ sleeping room in a hospital). The placement requirements of NFPA 720 are modified specifically for lodging or rooming houses as required by this Code and do not affect other regulations within a jurisdiction. [101: A.26.3.4.6.2]

A.13.7.2.15.3.1

A.13.7.2.15.3.3
A quantity of such rooms and suites might be required to be equipped to accommodate hearing-impaired individuals based on the total number of rooms in a transient lodging facility. (See 28 CFR 36, Appendix A, “Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities.”) [101: A.28.3.4.3.3]

A.13.7.2.15.5
Caution needs to be exercised in locating smoke alarms with regard to their proximity to bathrooms, cooking facilities, and HVAC outlets in order to prevent nuisance alarms. [101: A.28.3.4.5]
A.13.7.2.16.3.6
The provision for immediate notification of the public fire department is intended to include, but is not limited to, all of the arrangements in 13.7.1.10.2. Other arrangements that depend on a clerk or other member of the staff to notify the fire department might also be permitted. In such cases, however, it is essential that a trained staff member and an immediately available means of calling the fire department are continuously available. If a telephone is to be used, it should not be of any type or arrangement that requires a coin or the unlocking of a device to contact the fire department. [101: A.29.3.4.3.6]

A.13.7.2.16.5
Caution needs to be exercised in locating smoke alarms with regard to their proximity to bathrooms, cooking facilities, and HVAC outlets in order to prevent nuisance alarms. [101: A.29.3.4.5]

A.13.7.2.17.5
Previous editions of NFPA 101 permitted the single-station smoke alarm required by 13.7.2.17.5 to be omitted from each apartment where a complete automatic smoke detection system was installed throughout the building. With such a system, when one detector is activated, an alarm is sounded throughout the building. Experience with complete smoke detection systems in apartment buildings has shown that numerous nuisance alarms are likely to occur. Where there is a problem with frequent nuisance alarms, occupants ignore the alarm, or the system is either disconnected or otherwise rendered inoperative. [101: A.30.3.4.5]

A.13.7.2.18.4.1
It is intended that a building compliant with Option 2, as defined in Chapter 31 of NFPA 101, function as described in the paragraph that follows.

Occupants within a living unit become aware of a fire emergency, either through personal awareness or through being alerted by the smoke alarm(s) installed within the living unit. Other building occupants are alerted to the fire emergency by the building fire alarm system that is initiated by manual fire alarm boxes adjacent to the exits, heat detection within the living unit where the fire emergency exists, smoke detection in the common areas outside the living unit, or a combination thereof. The installation of system heat detectors versus smoke detectors within the living unit is intended to eliminate nuisance-type alarms and reduce occupant complacency from frequent false alarms. The installation of smoke detection within the living unit should only be contemplated after a careful analysis of the goals and with the approval of the authority having jurisdiction. [101: A.31.3.4.4.1]

A.13.7.2.18.5.1
NFPA 101 provides adequate, balanced fire protection and takes into consideration the passive and active systems required in a given occupancy. The level of protection prescribed by NFPA 72, National Fire Alarm and Signaling Code, which includes smoke alarms in all sleeping rooms, without exception, does not necessarily take into consideration the complete protection package mandated by NFPA 101. [101: A.31.3.4.5.1]

A.13.7.2.20.6
Positive alarm sequence applies only to emergency forces notification. Occupant notification is required to occur immediately upon activation of the detection device or system. [101: A.32.3.3.4.6]

A.13.7.2.21.3
Most often, smoke alarms sounding an alarm at 85 dBA or greater, installed outside the bedroom area, will meet the intent of this requirement. Smoke alarms remotely located from the bedroom might not be loud enough to awaken the average person. In such cases, it is recommended that smoke alarms be interconnected so that the activation of any smoke alarm will cause all smoke alarms to activate.
NFPA 101 provides adequate, balanced fire protection and takes into consideration the passive and active systems required in a given occupancy. The level of protection prescribed by NFPA 72, National Fire Alarm and Signaling Code, which includes smoke alarms in all sleeping rooms, without exception, does not necessarily take into consideration the complete protection package prescribed by NFPA 101. [101: A.33.2.3.4.3]

A.13.7.2.22.6.1

See A.13.7.2.16.3.6. [101: A.33.3.3.4.6.1]

A.13.7.2.29.2.1

The need for voice communication can be based on a decision regarding staged or partial evacuation versus total evacuation of all floors. The determination of need is a function of occupancy classification and building height. [101: A.11.8.4.1]

A.13.7.2.29.2.2.2

Public safety radio enhancement systems provide for greater flexibility and safety for emergency responders during in-building operations. This provision serves to facilitate adoption of Code language prescribing design, installation, testing, and maintenance criteria for in-building public safety radio enhancement systems. AHJs are directed to Chapter 24 of NFPA 72 for details.
13.8 Other Fire Protection Systems.

Where other fire protection systems are required to be installed by the provisions of this Code, or are installed with the approval of the AHJ as an alternative or equivalency, the design and installation of the system shall comply with the appropriate standards listed in Table 13.8. The system shall be tested and maintained in accordance with Section 10.4.

Table 13.8 Other Required Fire Protection Systems

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<td>NFPA 11, Standard for Low-, Medium-, and High-Expansion Foam</td>
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<td>Carbon dioxide systems</td>
<td>NFPA 12, Standard on Carbon Dioxide Extinguishing Systems</td>
</tr>
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<td>Halon 1301 systems</td>
<td>NFPA 12A, Standard on Halon 1301 Fire Extinguishing Systems</td>
</tr>
<tr>
<td>Sprinklers in one- and two-family dwellings and manufactured homes</td>
<td>NFPA 13D, Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes</td>
</tr>
<tr>
<td>Sprinklers in residential occupancies up to and including four stories in height</td>
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<td>Deluge foam-water sprinkler, foam-water spray systems, and closed-head foam-water sprinkler systems</td>
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<td>Dry chemical extinguishing systems</td>
<td>NFPA 17, Standard for Dry Chemical Extinguishing Systems</td>
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<tr>
<td>Water mist systems</td>
<td>NFPA 750, Standard on Water Mist Fire Protection Systems</td>
</tr>
<tr>
<td>Clean agent fire-extinguishing systems</td>
<td>NFPA 2001, Standard on Clean Agent Fire Extinguishing Systems</td>
</tr>
<tr>
<td>Aerosol extinguishing systems</td>
<td>NFPA 2010, Standard for Fixed Aerosol Fire Extinguishing Systems</td>
</tr>
</tbody>
</table>

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address: 
City:  
State:  
Zip:  
Submittal Date: Mon Oct 21 10:17:32 EDT 2013

Committee Statement

Committee Statement: Updates title of NFPA 13R to that of the current edition.
14.3.2
An exit enclosure shall provide a continuous protected path of travel to an exit discharge. [101:7.1.3.2.2]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Tue Aug 06 10:42:58 EDT 2013

Committee Statement

Committee Statement: Editorial.
Response Message:
14.5.1.3.2
When fully open, any door leaf in a means of egress shall not project more than 7 in. (180 mm) into the required width of an aisle, a corridor, a passageway, or a landing, unless the door leaf is equipped with an approved self-closing device and is not required by the provisions of 14.5.1.2 to swing in the direction of egress travel. [101:7.2.1.4.3.3]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Tue Aug 06 10:51:05 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
Section 14.5.1.3.1

During its swing, any door leaf in a means of egress shall leave not less than one-half of the required width of an aisle, a corridor, a passageway, or a landing unobstructed and shall project not more than 7 in. (180 mm) into the required width of an aisle, a corridor, a passageway, or a landing, when fully open, unless both of the following conditions are met:

1. The door opening provides access to a stair in an existing building.

2. The door opening meets the requirement that limits projection to not more than 7 in. (180 mm) into the required width of the stair landing when the door leaf is fully open, of 14.5.1.3.2.

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Tue Aug 06 10:47:57 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
14.5.1.3.3
Surface-mounted latch release hardware on the door leaf shall be exempt from being included in the maximum 7 in. (180 mm) projection requirement of 14.5.1.3.2, provided that both of the following criteria are met:

1. The hardware is mounted to the side of the door leaf that faces the aisle, corridor, passageway, or landing when the door leaf is in the open position.

2. The hardware is mounted not less than 34 in. (865 mm), and not more than 48 in. (1220 mm), above the floor.

[101: 7.2.1.4.3.2]
14.6.2.4 Separation shall not be required between corridors and outside stairs, provided that all of the following conditions are met:

1. The building, including corridors and stairs, is protected throughout by an approved, electrically supervised automatic sprinkler system in accordance with NFPA 13, Standard for the Installation of Sprinkler Systems, or, where applicable, NFPA 13R, Standard for the Installation of Sprinkler Systems in Residential Occupancies up to and Including Four Stories in Height.

2. The corridors comply with 7.1.3.1 of NFPA 101.

3. The corridors are connected on each end to an outside stair complying with 7.2.2.6 of NFPA 101.

4. At any location in the corridor where a change in direction exceeding 45 degrees occurs, a clear opening to the exterior of not less than 3.5 ft\(^2\) (0.32 m\(^2\)) located to restrict the accumulation of smoke and toxic gases, or an outside stair is provided.

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Tue Aug 06 11:06:23 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
14.8.1.2 Occupant Load Factor.
The occupant load in any building or portion thereof shall be not less than the number of persons determined by dividing the floor area assigned to that use by the occupant load factor for that use as specified in Table 14.8.1.2, Figure 14.8.1.2(a), and Figure 14.8.1.2(b). Where both gross and net area figures are given for the same occupancy, calculations shall be made by applying the gross area figure to the gross area of the portion of the building devoted to the use for which the gross area figure is specified and by applying the net area figure to the net area of the portion of the building devoted to the use for which the net area figure is specified. [101: 7.3.1.2]

### Table 14.8.1.2 Occupant Load Factor

<table>
<thead>
<tr>
<th>Use</th>
<th>(\text{ft}^2\text{ per person})^a</th>
<th>(\text{m}^2\text{ per person})^b</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Assembly Use</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Concentrated use, without fixed seating</td>
<td>7 net</td>
<td>0.65 net</td>
</tr>
<tr>
<td>Less concentrated use, without fixed seating</td>
<td>15 net</td>
<td>1.4 net</td>
</tr>
<tr>
<td>Bench-type seating</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number Use</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 person/18 linear in.</td>
<td>1 person/455 linear mm</td>
<td></td>
</tr>
<tr>
<td>Fixed seating</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number Use number of fixed seats</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Waiting spaces</td>
<td></td>
<td></td>
</tr>
<tr>
<td>100</td>
<td>9.3</td>
<td></td>
</tr>
<tr>
<td>Kitchens</td>
<td>100</td>
<td>9.3</td>
</tr>
<tr>
<td>Library stack areas</td>
<td>100</td>
<td>9.3</td>
</tr>
<tr>
<td>Library reading rooms</td>
<td>50 net</td>
<td>4.6 net</td>
</tr>
<tr>
<td>Swimming pools</td>
<td>50 (water surface)</td>
<td>4.6 (water surface)</td>
</tr>
<tr>
<td>Swimming pool decks</td>
<td>30</td>
<td>2.8</td>
</tr>
<tr>
<td>Exercise rooms with equipment</td>
<td>50</td>
<td>4.6</td>
</tr>
<tr>
<td>Exercise rooms without equipment</td>
<td>15</td>
<td>1.4</td>
</tr>
<tr>
<td>Stages</td>
<td>15 net</td>
<td>1.4 net</td>
</tr>
<tr>
<td>Lighting and access</td>
<td></td>
<td></td>
</tr>
<tr>
<td>catwalks, galleries,</td>
<td>100 net</td>
<td>9.3 net</td>
</tr>
<tr>
<td>gridirons</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Casinos and similar</td>
<td>11</td>
<td>1</td>
</tr>
<tr>
<td>gaming areas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skating rinks</td>
<td>50</td>
<td>4.6</td>
</tr>
<tr>
<td><strong>Business Use (other than below)</strong></td>
<td><strong>450 100</strong></td>
<td><strong>44.9 3</strong></td>
</tr>
<tr>
<td>Concentrated Business Use^f</td>
<td>50</td>
<td>4.6</td>
</tr>
<tr>
<td>Air traffic control tower observation levels</td>
<td>40</td>
<td>3.7</td>
</tr>
<tr>
<td><strong>Day-Care Use</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>35 net</td>
<td>3.3 net</td>
<td></td>
</tr>
<tr>
<td><strong>Detention and Correctional Use</strong></td>
<td>120</td>
<td>11.1</td>
</tr>
<tr>
<td><strong>Educational Use</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Classrooms</td>
<td>20 net</td>
<td>1.9 net</td>
</tr>
<tr>
<td>Shops, laboratories, vocational rooms</td>
<td>50 net</td>
<td>4.6 net</td>
</tr>
<tr>
<td><strong>Health Care Use</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inpatient treatment departments</td>
<td>240</td>
<td>22.3</td>
</tr>
<tr>
<td>Sleeping departments</td>
<td>120</td>
<td>11.1</td>
</tr>
<tr>
<td>Ambulatory health care</td>
<td><strong>100 150</strong></td>
<td><strong>9.3 13</strong></td>
</tr>
</tbody>
</table>

[101: 7.3.1.2]
<table>
<thead>
<tr>
<th>Use</th>
<th>(ft² per person)(^{a})</th>
<th>(m² per person)(^{b})</th>
</tr>
</thead>
<tbody>
<tr>
<td>NA: Not applicable. The occupant load is the maximum probable number of occupants present at any time.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\(^{a}\)All factors are expressed in gross area unless marked “net.”

\(^{b}\)For the purpose of determining occupant load in mercantile occupancies where, due to differences in the finished ground level of streets on different sides, two or more floors directly accessible from streets (not including alleys or similar back streets) exist, each such floor is permitted to be considered a street floor. The occupant load factor is one person for each 40 ft\(^2\) (3.7 m\(^2\)) of gross floor area of sales space.

\(^{c}\)For the purpose of determining occupant load in mercantile occupancies with no street floor, as defined in 3.3.234, but with access directly from the street by stairs or escalators, the floor at the point of entrance to the mercantile occupancy is considered the street floor.

\(^{d}\)For any food court or other assembly use areas located in the mall that are not included as a portion of the gross leasable area of the mall building, the occupant load is calculated based on the occupant load factor for that use as specified in Table 14.8.1.2. The remaining mall area is not required to be assigned an occupant load.

\(^{e}\)The portions of the mall that are considered a pedestrian way and not used as gross leasable area are not required to be assessed an occupant load based on Table 14.8.1.2. However, means of egress from a mall pedestrian way are required to be provided for an occupant load determined by dividing the gross leasable area of the mall building (not including anchor stores) by the appropriate lowest whole number occupant load factor from Figure 14.8.1.2(a) or Figure 14.8.1.2(b).

Each individual tenant space is required to have means of egress to the outside or to the mall based on occupant loads calculated by using the appropriate occupant load factor from Table 14.8.1.2.

Each individual anchor store is required to have means of egress independent of the mall.

\(^{f}\)See A.14.8.1.2.

[\textit{101: Table 7.3.1.2 \[101: Figure 7.3.1.2(a)\]}]

\[\text{Figure 14.8.1.2(a) Mall Building Occupant Load Factors (U.S. Customary Units). [101: Figure 7.3.1.2(a)]}\]

\[\text{Figure 14.8.1.2(b) Mall Building Occupant Load Factors (SI Units). [101:Figure 7.3.1.2(b)]}\]
Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Tue Aug 06 11:10:33 EDT 2013

Committee Statement

Committee Statement: Extract update. Replace Table 14.8.1.2 with NFPA 101-2015, Table 7.3.1.2 (rearranged in alphabetical order by use).
Response Message:
14.8.3.2*
For stairways wider than 44 in. (1120 mm) and subject to the 0.3 in. (7.6 mm) width per person capacity factor, the capacity shall be permitted to be increased using the following equation:

\[ C = 146.7 + \left( \frac{W_n - 44}{0.218} \right) \]  

[14.8.3.2]

where:
\[ C \] = capacity, in persons, rounded to the nearest integer
\[ W_n \] = nominal width of the stair as permitted by 14.8.3.2 (in.)

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Tue Aug 06 11:39:21 EDT 2013

Committee Statement

Committee Statement: The editorial tagging of the equation, so as to permit the equation to be referenced by number, is for compliance with the Manual of Style.
14.9.1.1
The number of means of egress from any balcony, mezzanine, story, or portion thereof shall be not less than two, except under one of the following conditions:

(1) A single means of egress shall be permitted where permitted in Chapters 11 through 43 of NFPA 101.

(2) A single means of egress shall be permitted for a mezzanine or balcony and where the common path of travel limitations of Chapters 11 through 43 of NFPA 101 are met. [101: 7.4.1.1]
### Second Revision No. 265-NFPA 1-2013 [ New Section after 14.9.1.6 ]

<table>
<thead>
<tr>
<th>14.9.2</th>
<th>Spaces About Electrical Equipment.</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.9.2.1</td>
<td>600 Volts, Nominal, or Less.</td>
</tr>
<tr>
<td></td>
<td>The minimum number of means of egress for working space about electrical equipment, other than existing electrical equipment, shall be in accordance with NFPA 70, Section 110.26(C).</td>
</tr>
<tr>
<td>[101 : 7.4.2.1]</td>
<td></td>
</tr>
<tr>
<td>14.9.2.2</td>
<td>Over 600 Volts, Nominal.</td>
</tr>
<tr>
<td></td>
<td>The minimum number of means of egress for working space about electrical equipment, other than existing electrical equipment, shall be in accordance with NFPA 70, Section 110.33(A).</td>
</tr>
<tr>
<td>[101 : 7.4.2.2]</td>
<td></td>
</tr>
</tbody>
</table>

### Submitter Information Verification

- **Submitter Full Name:** Gregory Harrington
- **Organization:** National Fire Protection Assoc
- **Street Address:**
- **City:**
- **State:**
- **Zip:**
- **Submittal Date:** Tue Aug 06 11:58:37 EDT 2013

### Committee Statement

- **Committee Statement:** Extract update.
- **Response Message:**
14.11.1.5
Means of egress shall be permitted to discharge into an exterior area in accordance with 7.7.7 of NFPA 101 -[101 -7.7.1.5]

Submitter Information Verification
Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Tue Aug 06 13:11:37 EDT 2013

Committee Statement
Committee Statement: Extract update.
Response Message:
Second Revision No. 267-NFPA 1-2013 [ Section No. 14.11.2 ]

14.11.2 Exit Discharge Through Interior Building Areas.
Exits shall be permitted to discharge through interior building areas, provided that all of the following are met:

(1) Not more than 50 percent of the required number of exits exit stairs serving normally occupied areas of each floor, and not more than 50 percent of the required egress capacity the exit stair capacity required for normally occupied areas of each floor, shall discharge through areas on any level of discharge, except as otherwise permitted by one of the following:
   (a) One hundred percent of the exits shall be permitted to discharge through areas on any level of discharge in detention and correctional occupancies as otherwise provided in Chapters 22 and 23.
   (b) In existing buildings, the 50 percent limit on egress capacity shall not apply if the 50 percent limit on the required number of exits is met.

(2) Each level of discharge shall discharge directly outside at the finished ground level or discharge directly outside and provide access to the finished ground level by outside stairs or outside ramps.

(3) The interior exit discharge shall lead to a free and unobstructed way to the exterior of the building, and such way shall be readily visible and identifiable from the point of discharge from the exit.

(4) The interior exit discharge shall be protected by one of the following methods:
   (a) The level of discharge shall be protected throughout by an approved automatic sprinkler system in accordance with Section 13.3, or the portion of the level of discharge used for interior exit discharge shall be protected by an approved automatic sprinkler system in accordance with Section 13.3 and shall be separated from the nonsprinklered portion of the floor by fire barriers with a fire resistance rating meeting the requirements for the enclosure of exits. (See 14.3.1.)
   (b) The interior exit discharge area shall be in a vestibule or foyer that meets all of the following criteria:
      i. 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 (9.1 m).
      ii. The foyer shall be separated from the remainder of the level of discharge by fire barriers with a minimum 1-hour fire resistance rating, and existing installations of wired glass in steel frames shall be permitted to be continued in use.
      iii. The foyer shall serve only as means of egress and shall include an exit directly to the outside.

(5) The entire area on the level of discharge shall be separated from areas below by construction having a fire resistance rating not less than that required for the exit enclosure, unless otherwise provided in 14.11.2(6).

(6) Levels below the level of discharge in an atrium shall be permitted to be open to the level of discharge where such level of discharge is protected in accordance with 8.6.7 of NFPA 101.

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address: 
City: 
State: 

Page 257 of 866
Committee Statement

Committee Statement: Extract update.
Response Message:
14.11.3.3
Stairs and ramps shall be arranged so as to make clear the direction of egress travel from the exit discharge to a public way. [101.7.7.3.3]
14.11.7 Discharge to Exterior Access.
Where permitted by Chapters 11 through 43 of NFPA 101 and approved by the authority having jurisdiction, occupant travel to the public way shall be permitted to be delayed within the exit discharge while the nature of the emergency is evaluated, provided all of the following conditions are met:

(1) Each area is of sufficient size to accommodate all occupants at a net area of 15 ft\(^2\) (1.4 m\(^2\)) per person.

(2) Each area is located a distance of not less than 50 ft (15 m) from the building from which the occupants have exited.

(3) The area is continuously maintained free of obstructions or impediments to full instant use in the case of fire or other emergency.

(4) A continuous and safe means of egress from the exterior area to the public way, without re-entering the building, is available.

\[101.7.7\]
Unless prohibited by Chapters 11 through 43 of NFPA 101, automatic lighting control devices shall be permitted to temporarily turn off the illumination within the means of egress, provided that each lighting control device complies with all of the following:

1. In new installations, the lighting control device is listed.
2. The lighting control device is equipped to automatically energize the controlled lights upon loss of normal power and is evaluated for this purpose.
3. Illumination timers are provided and are set for a minimum 15-minute duration.
4. The lighting control device is activated by any occupant movement in the area served by the lighting units.
5. In new installations, the lighting control device is activated by activation of the building fire alarm system, if provided.
6. The lighting control device does not turn off any lights relied upon for activation of photoluminescent exit signs or path markers.
7. The lighting control device does not turn off any battery-equipped emergency luminaires, unit equipment, or exit signs.

[101: 7.8.1.2.2]
14.12.1.3

The floors and other walking surfaces within an exit and within the portions of the exit access and exit discharge designated in 14.12.1.1 shall be illuminated as follows:

(1) During conditions of stair use, the minimum illumination for new stairs shall be at least 10 ft-candle (108 lux), measured at the walking surfaces.

(2) The minimum illumination for new floors and other new walking surfaces, other than new stairs during conditions of stair use, shall be to values of at least 2 ft-candle (21.6 lux), measured at the floor. The minimum illumination for existing floors, existing stairs, and other existing walking surfaces shall be to values of at least 1 ft-candle (10.8 lux), measured at the floor.

(3) In assembly occupancies, the illumination of the walking surfaces of exit access shall be at least 0.2 ft-candle (2.2 lux) during periods of performances or projections involving directed light.

(4)* The minimum illumination requirements shall not apply where operations or processes require low lighting levels. [101 : 7.8.1.3]
16.2.1.3
Temporary heating equipment shall be installed, used, and maintained in accordance with the manufacturer’s instructions, except as otherwise provided in 16.2.1.4. [241:5.2.3]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Tue Jul 16 15:09:49 EDT 2013

Committee Statement

Committee Statement: Editorial correction.
Response Message:
16.2.1.5* Heating devices shall be situated so that they are secured. [241:5.2.5]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Tue Jul 16 15:16:49 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
16.2.1.9

Heaters Temporary heating equipment using exposed radiant heating wires shall not be used. [241:5.2.9]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Tue Jul 16 15:19:06 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
16.2.1.10
Temporary electrical heating equipment shall be equipped with tip-over protection and overheat cut-offs.

Submitter Information Verification
Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc

Committee Statement
Committee Statement: Editorial correction.
Response Message:
Such storage areas shall be appropriately posted as "No Smoking" areas. [241:5.5.1.5]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Tue Jul 16 15:24:38 EDT 2013

Committee Statement

Committee Statement: Editorial correction.
Response Message: 
16.3.2.5.2*
Where guard service is provided, the guard(s) shall be trained in all of the following:

(1) Notification procedures that include calling the fire department and management personnel

(2) Function and operation of fire protection equipment

(3) Familiarization with fire hazards

(4) Use of construction elevators, where provided [241:7.2.5.2]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Tue Jul 16 15:31:57 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
16.4.3.2.4
The provision of 16.4.3.2.3 shall not prohibit occupancy of the lower floors of a building, even where the upper floors are in various stages of construction or protection, provided that both of the following conditions are satisfied:

1. The sprinkler protection of the lower occupied floors has been completed and tested in accordance with 16.4.3.2.3.

2. The sprinkler protection of the upper floors is supplied by entirely separate systems and separate control valves so that the absence or incompleteness of protection in no way impairs the sprinkler protection of the occupied lower floors. [241: 8.7.3.4]
Second Revision No. 139-NFPA 1-2013 [Sections 17.1.11.2, 17.1.11.3]

17.1.11.2
No permit associated with construction shall be issued if the provisions of this standard Code are not addressed. [1144:4.4.2]

17.1.11.3
No permit associated with occupancy shall be issued until the provisions of this standard Code are satisfied. [1144:4.4.3]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Fri Jul 19 09:14:17 EDT 2013

Committee Statement

Committee Statement: Editorial.
Response Message:
17.3.5.2.1.8* Accessory Structure(s).
Accessory structures shall be constructed to meet the requirements of this chapter. Chapter 5 of NFPA 1144 or shall be separated from the main structure by a minimum of 30 ft (9 m). [1144:5.9]
17.3.9 Maintenance.
See Section 10.4 4.5.8 for requirements on maintenance.

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Fri Oct 04 16:40:22 EDT 2013

Committee Statement

Committee Statement: Maintenance requirements are now located in 4.5.8; Section 10.4 has been deleted as it was redundant.
Response Message:
18.4.5.3.5
Required fire flow for open parking structures that are not protected throughout by an approved automatic sprinkler system shall be reduced by 75 percent where all of the following conditions are met:

(1) The structure complies with the building code.
(2) The structure is of Type I or Type II construction.
(3) The structure is provided with a Class I standpipe system in accordance with NFPA 14. Class I standpipe systems of the manual dry type shall be permitted. The resulting fire flow is not less than 1000 gpm (3785 L/min).
(4) The resulting fire flow is not less than 1000 gpm (3785 L/min). The structure is provided with a Class I standpipe system in accordance with NFPA 14. Class I standpipe systems of the manual dry type shall be permitted.

Submitter Information Verification
Submitter Full Name: [Not Specified]
Organization: [Not Specified]
Street Address: [Not Specified]
City: 
State: 
Zip: 
Submittal Date: Fri Oct 25 11:29:48 EDT 2013

Committee Statement
Committee Statement: The SR swaps items 3 and 4 in the list to better convey that the 1000 gpm minimum is a condition of the fire flow reduction. This action should meet the intent of PC-1.
18.5 Fire Hydrants.

18.5.1 The number and type of fire hydrants and connections to other approved water supplies shall be capable of delivering the required fire flow and shall be provided at approved locations.

18.5.2 Fire hydrants and connections to other approved water supplies shall be accessible to the fire department.

18.5.3 Clear Space Around Hydrants.

A 36 in. (914 mm) clear space shall be maintained around the circumference of fire hydrants except as otherwise required or approved.

18.5.3.1 A clear space of not less than 60 in. (1524 mm) shall be provided in front of each hydrant connection having a diameter greater than 2 1/2 in. (64 mm).

18.5.4 Private water supply systems shall be tested and maintained in accordance with NFPA 25.

18.5.5 Where required by the AHJ, fire hydrants subject to vehicular damage shall be protected unless located within a public right of way.

18.5.6 Where water supplies or fire hydrants are out of service for maintenance or repairs, a visible indicator acceptable to the AHJ shall be used to indicate that the hydrant is out of service.

18.5.7 Marking of Hydrants.

18.5.7.1 Fire hydrants shall be marked with an approved reflector affixed to the roadway surface where required by the AHJ.

18.5.7.2 Fire hydrants shall be marked with an approved flag or other device affixed to or proximate to the fire hydrant where required by the AHJ.

18.5.7.3* Where required by the AHJ, fire hydrants shall be color coded or otherwise marked with an approved system indicating the available flow capacity.

18.5.1 Fire Hydrant Locations and Distribution.

Fire hydrants shall be provided in accordance with Section 18.5 for all new buildings, or buildings relocated into the jurisdiction unless otherwise permitted by 18.5.1.1 or 18.5.1.2.

18.5.1.1 Fire hydrants shall not be required where the water distribution system is not capable of providing a fire flow of greater than 500 gpm (1893 L/min) at a residual pressure of 20 psi (139.9 kPa).

18.5.1.2* Fire hydrants shall not be required where modification or extension of the water distribution system is deemed to be impractical by the AHJ.

18.5.1.3 The provisions of 18.5.1.1 and 18.5.1.2 shall not eliminate the fire flow requirements of Section 18.4.

18.5.1.4* The distances specified in Section 18.5 shall be measured along fire department access roads in accordance with 18.2.3.
18.5.1.5
Where fire department access roads are provided with median dividers incapable of being crossed by fire apparatus, or where fire department access roads have traffic counts of more than 30,000 vehicles per day, hydrants shall be placed on both sides of the fire department access road on an alternating basis, and the distances specified by Section 18.5 shall be measured independently of the hydrants on the opposite side of the fire department access road.

18.5.1.6
Fire hydrants shall be located not more than 12 ft (3.7 m) from the fire department access road.

18.5.2 Detached One- and Two-Family Dwellings.
Fire hydrants shall be provided for detached one- and two-family dwellings in accordance with both of the following:

1. The maximum distance to a fire hydrant from the closest point on the building shall not exceed 600 ft (122 m).
2. The maximum distance between fire hydrants shall not exceed 800 ft (244 m).

18.5.3 Buildings Other than Detached One- and Two-Family Dwellings.
Fire hydrants shall be provided for buildings other than detached one- and two-family dwellings in accordance with both of the following:

1. The maximum distance to a fire hydrant from the closest point on the building shall not exceed 400 ft (76 m).
2. The maximum distance between fire hydrants shall not exceed 500 ft (152 m).

18.5.4 Minimum Number of Fire Hydrants for Fire Flow.

18.5.4.1 The minimum number of fire hydrants needed to deliver the required fire flow for new buildings in accordance with Section 18.4 shall be determined in accordance with Section 18.5.4.

18.5.4.2 The aggregate fire flow capacity of all fire hydrants within 1000 ft (305 m) of the building, measured in accordance with 18.5.1.4 and 18.5.1.5, shall be not less than the required fire flow determined in accordance with Section 18.4.

18.5.4.3 The maximum fire flow capacity for which a fire hydrant shall be credited shall be as specified by Table 18.5.4.3. Capacities exceeding the values specified in Table 18.5.4.3 shall be permitted when local fire department operations have the ability to accommodate such values as determined by the fire department.

**Table 18.5.4.3 Maximum Fire Hydrant Fire Flow Capacity**

<table>
<thead>
<tr>
<th>Distance to Building</th>
<th>Maximum Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>(ft)</td>
<td>(m)</td>
</tr>
<tr>
<td>≤ 250</td>
<td>≤ 76</td>
</tr>
<tr>
<td>&gt; 250 and ≤ 500</td>
<td>&gt; 76 and ≤ 152</td>
</tr>
<tr>
<td>&gt; 500 and ≤ 1000</td>
<td>&gt; 152 and ≤ 305</td>
</tr>
</tbody>
</table>

**a** Measured in accordance with 18.5.1.4 and 18.5.1.5

**b** Minimum 20 psi (139.9 kPa) residual pressure

18.5.4.4 Fire hydrants required by 18.5.2 and 18.5.3 shall be included in the minimum number of fire hydrants for fire flow required by 18.5.4.

18.5.5 Testing and Maintenance.

18.5.5.1 Private water supply systems shall be tested and maintained in accordance with NFPA 25, Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems.
18.5.2
Public water supply systems providing fire flow shall be tested and maintained in accordance with ANSI/AWWA G200, Standard for Distribution Systems Operation and Management.

18.5.6 Accessibility.
Fire hydrants and connections to other approved water supplies shall be accessible to the fire department.

18.5.7 Clear Space Around Hydrants.
18.5.7.1 A 36 in. (914 mm) clear space shall be maintained around the circumference of fire hydrants except as otherwise required or approved.

18.5.7.2 A clear space of not less than 60 in. (1524 mm) shall be provided in front of each hydrant connection having a diameter greater than 2 1/2 in. (64 mm).

18.5.8 Protection.
Where required by the AHJ, fire hydrants subject to vehicular damage shall be protected unless located within a public right of way.

18.5.9 Hydrants Out of Service.
Where water supplies or fire hydrants are out of service for maintenance or repairs, a visible indicator acceptable to the AHJ shall be used to indicate that the hydrant is out of service.

18.5.10 Marking of Hydrants.
18.5.10.1 Fire hydrants shall be marked with an approved reflector affixed to the roadway surface where required by the AHJ.

18.5.10.2 Fire hydrants shall be marked with an approved flag or other device affixed to or proximate to the fire hydrant where required by the AHJ.

18.5.10.3* Where required by the AHJ, fire hydrants shall be color coded or otherwise marked with an approved system indicating the available flow capacity.

Supplemental Information

<table>
<thead>
<tr>
<th>File Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SR592_Sec-18.5_Hydrants_102413.docx</td>
<td>Replaces Sec. 18.5 and associated Annex A paragraphs.</td>
</tr>
</tbody>
</table>

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Tue Oct 22 11:04:09 EDT 2013

Committee Statement

Committee Statement: Replace Section 18.5 and associated Annex A text with attachment. Also delete Annex E. The SR relocates the text from Annex E to Section 18.5 as was shown in Committee Input CI-128 during the First Draft Stage. It is noted that CI-128 yielded two public comments (PC-3 and PC-9) supporting the relocation of the Annex E text to Section 18.5. No public comments were received in opposition to moving Annex E to the body of the Code. Water supply and hydrants provide a basic and necessary layer of fire protection in most communities. As such, these requirements belong in the body of the code rather than in an annex. The default position of the Code should be to require water supply and hydrants; that is accomplished by this revision. The revision addresses those communities without a
water distribution in several paragraphs, including 18.5.1.1 and 18.5.1.2.

**Response**

**Message:**

- Public Comment No. 3-NFPA 1-2013 [Chapter Fire]
- Public Comment No. 8-NFPA 1-2013 [Section No. E.4.3]
- Public Comment No. 9-NFPA 1-2013 [Chapter Fire]
18.5 Fire Hydrants.

18.5.1 Fire Hydrant Locations and Distribution.
Fire hydrants shall be provided in accordance with Section 18.5 for all new buildings, or buildings relocated into the jurisdiction unless otherwise permitted by 18.5.1.1 or 18.5.1.2.

18.5.1.1
Fire hydrants shall not be required where the water distribution system is not capable of providing a fire flow of greater than 500 gpm (1893 L/min) at a residual pressure of 20 psi (139.9 kPa).

18.5.1.2*
Fire hydrants shall not be required where modification or extension of the water distribution system is deemed to be impractical by the AHJ.

18.5.1.3
The provisions of 18.5.1.1 and 18.5.1.2 shall not eliminate the fire flow requirements of Section 18.4.

18.5.1.4*
The distances specified in Section 18.5 shall be measured along fire department access roads in accordance with 18.2.3.

18.5.1.5
Where fire department access roads are provided with median dividers incapable of being crossed by fire apparatus, or where fire department access roads have traffic counts of more than 30,000 vehicles per day, hydrants shall be placed on both sides of the fire department access road on an alternating basis, and the distances specified by Section 18.5 shall be measured independently of the hydrants on the opposite side of the fire department access road.

18.5.1.6
Fire hydrants shall be located not more than 12 ft (3.7 m) from the fire department access road.

18.5.2 Detached One- and Two-Family Dwellings.
Fire hydrants shall be provided for detached one- and two-family dwellings in accordance with both of the following:
(1) The maximum distance to a fire hydrant from the closest point on the building shall not exceed 600 ft (122 m).
(2) The maximum distance between fire hydrants shall not exceed 800 ft (244 m).

18.5.3 Buildings Other than Detached One- and Two-Family Dwellings.
Fire hydrants shall be provided for buildings other than detached one- and two-family dwellings in accordance with both of the following:
(1) The maximum distance to a fire hydrant from the closest point on the building shall not exceed 400 ft (76 m).
(2) The maximum distance between fire hydrants shall not exceed 500 ft (152 m).

18.5.4 Minimum Number of Fire Hydrants for Fire Flow.
18.5.4.1
The minimum number of fire hydrants needed to deliver the required fire flow for new buildings in accordance with Section 18.4 shall be determined in accordance with Section 18.5.4.
18.5.4.2
The aggregate fire flow capacity of all fire hydrants within 1000 ft (305 m) of the building, measured in accordance with 18.5.1.4 and 18.5.1.5, shall be not less than the required fire flow determined in accordance with Section 18.4.

18.5.4.3*
The maximum fire flow capacity for which a fire hydrant shall be credited shall be as specified by Table 18.5.4.3. Capacities exceeding the values specified in Table 18.5.4.3 shall be permitted when local fire department operations have the ability to accommodate such values as determined by the fire department.

<table>
<thead>
<tr>
<th>Distance to Building† (ft)</th>
<th>Maximum Capacity‡ (gpm)</th>
<th>Maximum Capacity‡ (L/min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤ 250</td>
<td>≤ 76</td>
<td>1500</td>
</tr>
<tr>
<td>&gt; 250 and ≤ 500</td>
<td>&gt; 76 and ≤ 152</td>
<td>1000</td>
</tr>
<tr>
<td>&gt; 500 and ≤ 1000</td>
<td>&gt; 152 and ≤ 305</td>
<td>750</td>
</tr>
</tbody>
</table>

* Measured in accordance with 18.5.1.4 and 18.5.1.5
† Minimum 20 psi (139.9 kPa) residual pressure

18.5.4.4
Fire hydrants required by 18.5.2 and 15.5.3 shall be included in the minimum number of fire hydrants for fire flow required by 18.5.4.

18.5.5 Testing and Maintenance.

18.5.5.1
Private water supply systems shall be tested and maintained in accordance with NFPA 25, Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems.

18.5.5.2
Public water supply systems providing fire flow shall be tested and maintained in accordance with ANSI/AWWA G200, Standard for Distribution Systems Operation and Management.

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Fire hydrants and connections to other approved water supplies shall be accessible to the fire department.

18.5.7 Clear Space Around Hydrants.

18.5.7.1
A 36 in. (914 mm) clear space shall be maintained around the circumference of fire hydrants except as otherwise required or approved.

18.5.7.2
A clear space of not less than 60 in. (1524 mm) shall be provided in front of each hydrant connection having a diameter greater than 2½ in. (64 mm).

18.5.8 Protection.
Where required by the AHJ, fire hydrants subject to vehicular damage shall be protected unless located within a public right of way.

18.5.9 Hydrants Out of Service.
Where water supplies or fire hydrants are out of service for maintenance or repairs, a visible indicator acceptable to the AHJ shall be used to indicate that the hydrant is out of service.

18.5.10 Marking of Hydrants.

18.5.10.1
Fire hydrants shall be marked with an approved reflector affixed to the roadway surface where required by the AHJ.

18.5.10.2
Fire hydrants shall be marked with an approved flag or other device affixed to or proximate to the fire hydrant where required by the AHJ.

18.5.10.3*
Where required by the AHJ, fire hydrants shall be color coded or otherwise marked with an approved system indicating the available flow capacity.

A.18.5.1.2
The conditions where a local jurisdiction might determine that a modification or extension of the water distribution system is deemed to be impractical are varied and should be evaluated on a case-by-case basis. Conditions that should be considered in determining if an extension is impractical should include, but not be limited to, the following:
(1) Distance required to extend the water distribution system
(2) Capability of the existing water distribution system to meet the fire flow demand
(3) Density and occupancy of the proposed development
(4) Potential additional future development in the area of the extension
(5) Other codes and standards, which might warrant extension of the water distribution system
(6) Future anticipated improvements to the water distribution system
(7) Buildings within a previously approved development

A.18.5.1.4
Fire department access roads are intended to include public streets provided they meet the requirements of 18.2.3.

A.18.5.4.3
It is not the intent of Table 18.5.4.3 to limit the actual fire flow capacity of a fire hydrant, only the fire flow capacity for which a fire hydrant is credited based on its distance from the building.

A.18.5.10.3
Color coding or stenciling a fire hydrant with the actual flow capacity are two methods to accomplish the capacity marking of fire hydrants when it is required by the AHJ. NFPA 291, Recommended Practice for Fire Flow Testing and Marking of Hydrants, specifies the following approach to hydrant marking for flow indication:
Classification of Hydrants. Hydrants should be classified in accordance with their rated capacities [at 20 psi (1.4 bar) residual pressure or other designated value] as follows:
(1) Class AA — Rated capacity of 1500 gpm (5680 L/min) or greater
(2) Class A — Rated capacity of 1000–1499 gpm (3785–5675 L/min)
(3) Class B — Rated capacity of 500–999 gpm (1900–3780 L/min)
(4) Class C — Rated capacity of less than 500 gpm (1900 L/min)
The tops and nozzle caps should be painted with the following capacity-indicating color scheme:

1. Class AA — Light blue
2. Class A — Green
3. Class B — Orange

The capacity colors should be of a reflective-type paint.
20.1.2.3
For new assembly occupancies, scenery and stage properties not separated from the audience by proscenium opening protection shall be of noncombustible materials, limited-combustible materials, or fire-retardant-treated wood. [\textsuperscript{101} 12.4.5.11.3; \textsuperscript{101} 13.4.5.11.3]

20.1.2.3.1
For existing assembly occupancies, scenery and stage properties on thrust stages shall be of noncombustible materials, limited-combustible materials, or fire retardant-treated wood. [\textsuperscript{101} 13.4.5.11.3]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
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Submittal Date: Wed Aug 07 11:30:00 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
20.1.4.4 Smoke Detection.
Where the nature of the special amusement building is such that it operates in reduced lighting levels, the building shall be protected throughout by an approved automatic smoke detection system in accordance with Section 13.7.13.7.1.4. [101: 12.4.7.4 12.4.8.4; 101: 13.4.7.4 13.4.8.4]
20.1.5.6.4*
The training for the duties and responsibilities of crowd managers shall include the following:

(1) Understanding crowd manager roles and responsibilities
(2) Understanding safety and security hazards that can endanger public assembly
(3) Understanding crowd management techniques
(4) Introduction to fire safety and fire safety equipment
(5) Understanding methods of evacuation and movement
(6) Understanding procedures for reporting emergencies
(7) Understanding crowd management emergency response procedures
(8) Understanding the paths of travel and exits, facility evacuation and emergency response procedures and, where provided, facility shelter-in-place procedures
(9) Familiarization with the venue and guest services training
(10) Other specific event-warranted training

[101 : 12.7.6.4; 101 : 13.7.6.4]

20.1.5.6.5
The training for the duties and responsibilities of crowd manager supervisors shall include the following:

(1) The duties described in 20.1.5.6.4
(2) Understanding crowd manager supervisor roles and responsibilities
(3) Understanding of incident management procedures
(4) Understanding the facility evacuation plan
(5) Understanding the facility command structure

[101 : 12.7.6.5; 101 : 13.7.6.5]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
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Zip:
Submittal Date: Wed Aug 07 11:54:50 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
Second Revision No. 276-NFPA 1-2013 [ Section No. 20.1.5.11 ]

20.1.5.11 Clothing.
Clothing and personal effects shall not be stored in corridors, and spaces not separated from corridors, unless otherwise permitted by one of the following:

(1) For new assembly occupancies, this requirement shall not apply to corridors, and spaces not separated from corridors, that are protected by an approved, supervised automatic sprinkler system in accordance with Section 13.3. [101: 12.7.12(1)]

(2) For existing assembly occupancies, this requirement shall not apply to corridors, and spaces not separated from corridors, that are protected by an approved automatic sprinkler system in accordance with Section 13.3. [101: 13.7.12(1)]

(3) This requirement shall not apply to corridors, and spaces not separated from corridors, that are protected by a smoke detection system in accordance with Section 13.3. [101: 12.7.12(2); 101: 13.7.12(2)]

(4) This requirement shall not apply to storage in metal lockers, provided that the required egress width is maintained. [101: 12.7.12(3); 101: 13.7.12(3)]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Wed Aug 07 12:09:39 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
20.2.3.2 Interior Wall and Ceiling Finish.
New and existing interior wall and ceiling finish materials complying with Section 12.5 shall be permitted as follows:

1. Exits — Class A [101: 14.3.3.2(1); 101: 15.3.3.2(1)]
2. In new educational occupancies other than exits — Class A or Class B [101: 14.3.3.2(2)]
3. In existing educational occupancies, corridors and lobbies — Class A or Class B [101: 15.3.3.2(2)]
4. Low-height partitions not exceeding 60 in. (1525 mm) and used in locations other than exits — Class A, Class B, or Class C [101: 14.3.3.2(3); 101: 15.3.3.2(3)]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Wed Aug 07 12:18:02 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
20.2.4.1  Emergency Action Plan.

Emergency action plans shall be provided in accordance with Section 10.8. [101: 14.7.1; 101: 15.7.1]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Wed Aug 07 12:24:17 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
20.2.4.4.3

Artwork and teaching materials shall be permitted to be attached directly to the walls in accordance with the following:

1. For new educational occupancies, the artwork and teaching materials shall not exceed 20 percent of the wall area in a building that is not protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 13.3. [101: 14.7.4.3(1)]

2. For existing educational occupancies, the artwork and teaching materials shall not exceed 20 percent of the wall area in a building that is not protected throughout by an approved automatic sprinkler system in accordance with Section 13.3. [101: 15.7.4.3(1)]

3. For new educational occupancies, the artwork and teaching materials shall not exceed 50 percent of the wall area in a building that is protected throughout by an approved automatic sprinkler system in accordance with Section 13.3. [101: 14.7.4.3(2)]

4. For existing educational occupancies, the artwork and teaching materials shall not exceed 50 percent of the wall area in a building that is protected throughout by an approved automatic sprinkler system in accordance with Section 13.3. [101: 15.7.4.3(2)]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Wed Aug 07 12:26:47 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
20.3.1.4 General.
Occupancies that include preschools, kindergartens, and other schools whose purpose is primarily educational for children 24 months of age or older, even though the children who attend such schools are of preschool age, shall comply with the provisions of Chapter 14 or Chapter 15 of NFPA 101, as applicable. [101:16.1.2.1; 101:17.1.2.1]
20.3.3.2 New Interior Wall and Ceiling Finish.

New interior wall and ceiling finish materials complying with Section 12.5 shall be Class A in stairways, corridors, and lobbies; in all other occupied areas, new interior wall and ceiling finish shall be Class A or Class B. [101: 16.3.3.2]
20.3.3.3 Existing Interior Wall and Ceiling Finish.

Existing interior wall and ceiling finish materials complying with Section 12.5 shall be Class A or Class B throughout. [101: 17.3.3.2]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Wed Aug 07 15:31:00 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
20.3.4.2.1*   Emergency Action Plans. Emergency action plans shall be provided in accordance with Section 10.8. [101: 16.7.1; 101: 17.7.1]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Wed Aug 07 15:37:27 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
20.3.4.2.3.5.3
Artwork and teaching materials shall be permitted to be attached directly to the walls in accordance with the following:

1. In new day-care homes, the artwork and teaching materials shall not exceed 20 percent of the wall area in a building that is not protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 13.3. [101: 16.7.4.3(1)]

2. In existing day-care homes, the artwork and teaching materials shall not exceed 20 percent of the wall area in a building that is not protected throughout by an approved automatic sprinkler system in accordance with Section 13.3. [101: 17.7.4.3(1)]

3. In new day-care homes, the artwork and teaching materials shall not exceed 50 percent of the wall area in a building that is protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 13.3. [101: 16.7.4.3(2)]

4. In existing day-care homes, the artwork and teaching materials shall not exceed 50 percent of the wall area in a building that is protected throughout by an approved automatic sprinkler system in accordance with Section 13.3. [101: 17.7.4.3(2)]
20.4.2.2.2 Fire Safety Plan.
A written health care occupancy fire safety plan shall provide for the following:

1. Use of alarms
2. Transmission of alarms to fire department
3. Emergency phone call to fire department
4. Response to alarms
5. Isolation of fire
6. Evacuation of immediate area
7. Evacuation of smoke compartment
8. Preparation of floors and building for evacuation
9. Extinguishment of fire
10. Location and operation of doors disguised with murals as permitted by 18.2.2.7 and 19.2.2.7 of NFPA 101.

Submitter Information Verification
Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Fri Aug 09 09:57:23 EDT 2013

Committee Statement
Committee Statement: Extract update.
Response Message:
20.4.2.3.3*
For smoke compartments having spaces not separated from the corridor by partitions, a written Where
required by the AHJ, a floor plan shall be provided to indicate the location of all required means of egress
 corridors in that smoke compartments having spaces not separated from the corridor by partitions.
[101:18.7.3.3; 101:19.7.3.3]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Fri Aug 09 10:01:41 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
20.4.2.5.2

Newly introduced upholstered furniture within health care occupancies shall comply with one of the following provisions, unless otherwise provided in 20.4.2.5.3:

(1) The furniture shall meet the criteria specified in 12.6.3.1 and 12.6.3.2.1.

(2) The furniture shall be in a building protected throughout by an approved, supervised automatic sprinkler system in accordance with NFPA 13. [101: 18.7.5.2; 101: 19.7.5.2]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Fri Aug 09 10:43:29 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
20.4.2.5.3

The requirements of 20.4.2.5.2, 12.6.3.1, and 12.6.3.2.1 of NFPA 101 shall not apply to upholstered furniture belonging to the patient in sleeping rooms of existing nursing homes where the following criteria are met:

1. A smoke detector shall be installed where the patient sleeping room is not protected by automatic sprinklers.

2. Battery-powered single-station smoke detectors shall be permitted.\[101 \doteq 19.7.5.3\]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Fri Aug 09 10:48:25 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
20.4.2.5.4 Newly introduced mattresses within health care occupancies shall comply with one of the following provisions, unless otherwise provided in 20.4.2.5.5:

1. The mattresses shall meet the criteria specified in 12.6.3.2 and 12.6.3.2.2.

2. The mattresses shall be in a building protected throughout by an approved, supervised automatic sprinkler system in accordance with NFPA 13. [101: 18.7.5.4; 101: 19.7.5.4]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Fri Aug 09 10:46:56 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
The requirements of 12.6.3.2, 12.6.3.2.2, and 20.4.2.5.4 of NFPA 101 shall not apply to mattresses belonging to the patient in sleeping rooms of existing nursing homes where the following criteria are met:

1. A smoke detector shall be installed where the patient sleeping room is not protected by automatic sprinklers.

2. Battery-powered single-station smoke detectors shall be permitted. [101: 19.7.5.5]
20.4.3.4 Interior Finish (Nonsprinklered Smoke Compartment Rehabilitation).

20.4.3.4.1 General.

Interior finish within the modification area shall be in accordance with Section 12.5. [101: 18.4.3.4.6.1]

20.4.3.4.2 Interior Wall and Ceiling Finish.

Newly installed interior wall and ceiling finish materials complying with Section 12.5 shall be permitted throughout nonsprinklered smoke compartments if the materials are Class A, except as otherwise permitted in 20.4.3.4.2.1 or 20.4.3.4.2.2. [101: 18.4.3.4.6.2]

20.4.3.4.2.1

Walls and ceilings shall be permitted to have Class A or Class B interior finish in individual rooms having a capacity not exceeding four persons. [101: 18.4.3.4.6.2.1]

20.4.3.4.2.2

Corridor wall finish not exceeding 48 in. (1220 mm) in height and restricted to the lower half of the wall shall be permitted to be Class A or Class B. [101: 18.4.3.4.6.2.2]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
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Submittal Date: Fri Aug 09 12:53:19 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
Second Revision No. 292-NFPA 1-2013 [Section No. 20.4.3.5]

20.4.3.5 Interior Floor Finish.

20.4.3.5.1 Newly installed interior floor finish shall comply with Section 12.5. [101: 18.4.3.4.6.3.1]

20.4.3.5.2 The requirements for newly installed interior floor finish in exit enclosures and corridors not separated from them by walls complying with 19.3.5.7 of NFPA 101 shall be as follows:

(1) Unrestricted in smoke compartments protected throughout by an approved, supervised automatic sprinkler system in accordance with 19.3.5.7 of NFPA 101

(2) Not less than Class I in smoke compartments not protected throughout by an approved, supervised automatic sprinkler system in accordance with 19.3.5.7 of NFPA 101 [101: 18.4.4.6.3.2]

20.4.3.5.3 Existing Interior Floor Finish.

No restrictions shall apply to existing interior floor finish. [101: 19.3.3.3]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Fri Aug 09 12:54:46 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
20.5.2.1 Emergency Action Plan.

20.5.2.1.1 The administration of every residential board and care facility shall have, in effect and available to all supervisory personnel, written copies of a plan for protecting all persons in the event of fire, for keeping persons in place, for evacuating persons to areas of refuge, and for evacuating persons from the building when necessary. [101: 32.7.1.1; 101: 33.7.1.1]

20.5.2.1.2 The emergency action plan shall include special staff response, including the fire protection procedures needed to ensure the safety of any resident, and shall be amended or revised whenever any resident with unusual needs is admitted to the home. [101: 32.7.1.2; 101: 33.7.1.2]

20.5.2.1.3 All employees shall be periodically instructed and kept informed with respect to their duties and responsibilities under the plan, and such instruction shall be reviewed by the staff not less than every 2 months. [101: 32.7.1.3; 101: 33.7.1.3]
20.5.2.2.1
All residents participating in the emergency action plan shall be trained in the proper actions to be taken in the event of fire. [101: 32.7.2.1; 101: 33.7.2.1]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Fri Aug 09 13:02:06 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
20.5.2.3.3
The drills shall involve the actual evacuation of all residents to an assembly point, as specified in the emergency action plan, and shall provide residents with experience in egressing through all exits and means of escape required by this Code. \[101: 32.7.3.3; 101: 33.7.3.3\]

Submitter Information Verification

Submitter Full Name: Gregory Harrington  
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Fri Aug 09 13:04:10 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
20.5.3.1.2 New Interior Wall and Ceiling Finish.

New interior wall and ceiling finish materials complying with Section 12.5 shall be Class A, Class B, or Class C. [101: 32.2.3.3.2]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc

Committee Statement

Committee Statement: Extract update.
Response Message:
20.5.3.1.3 Existing Interior Wall and Ceiling Finish.

Existing interior wall and ceiling finish materials complying with Section 12.5 shall be as follows:

(1) Class A or Class B in facilities other than those having prompt evacuation capability

(2) Class A, Class B, or Class C in facilities having prompt evacuation capability [101 - 33.2.3.3.2]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Fri Aug 09 13:09:38 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
20.5.3.1.4 New Interior Floor Finish.

20.5.3.1.4.1 New interior floor finish shall comply with Section 12.5. [101: 32.2.3.3.3.1]

20.5.3.1.4.2 New interior floor finish shall comply with 12.5.8.1 or 12.5.8.2, as applicable. [101: 32.2.3.3.3.2]

20.5.3.1.4.3 Existing Interior Floor Finish. (Reserved) [101: 33.2.3.3.3]
20.5.3.2.2 New Interior Wall and Ceiling Finish.

Interior wall and ceiling finish materials complying with Section 12.5 shall be in accordance with the following:

(1) Exit enclosures — Class A
(2) Lobbies and corridors — Class B
(3) Rooms and enclosed spaces — Class B [101 : 32.3.3.3.2]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address: City:
State: Zip:
Submittal Date: Fri Aug 09 13:12:51 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
20.5.3.2.3 Existing Interior Wall and Ceiling Finish.

Existing interior wall and ceiling finish materials complying with Section 12.5 shall be Class A or Class B. [101: 33.3.3.3.2]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Fri Aug 09 13:13:52 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
20.5.3.2.4 New Interior Floor Finish.

20.5.3.2.4.1 Interior New interior floor finish shall comply with Section 12.5. [101: 32.3.3.3.1]

20.5.3.2.4.2 Interior New interior floor finish in exit enclosures and exit access corridors and spaces not separated from them by walls complying with 32.3.3.6 of NFPA 101 shall be not less than Class II. [101: 32.3.3.3.2]

20.5.3.2.4.3 Interior New interior floor finish shall comply with 12.5.8.1 or 12.5.8.2, as applicable. [101: 32.3.3.3.3]

20.5.3.2.4.4 Existing Interior Floor Finish. Interior Existing interior floor finish, other than approved existing floor coverings, shall be Class I or Class II in corridors or exits. [101: 33.3.3.3]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Fri Aug 09 13:14:43 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
20.6.2.1 Evacuation and Relocation Plan and Fire Drills.

20.6.2.1.1 The administration of every ambulatory health care facility shall have, in effect and available to all supervisory personnel, written copies of a plan for the protection of all persons in the event of fire, for their evacuation to areas of refuge, and for their evacuation from the building when necessary. [\textit{101}: 20.7.1.4.2]

20.6.2.1.1.1 All employees shall be periodically instructed and kept informed with respect to their duties under the plan required by 20.6.2.1.1. [\textit{101}: 20.7.1.2; \textit{101}: 21.7.1.2]

20.6.2.1.2 A copy of the plan required by 20.6.2.1.1 shall be readily available at all times in the telephone operator's location or at the security center. [\textit{101}: 20.7.1.3; \textit{101}: 21.7.1.3]

20.6.2.1.3 The provisions of Section 10.5 and 20.6.2.1.2 through 20.6.2.2.3 shall apply.

20.6.2.1.2 All employees shall be periodically instructed and kept informed with respect to their duties under the plan required by 20.6.2.1.1. [\textit{101}: 20.7.1.2; \textit{101}: 21.7.1.2]

20.6.2.1.3 A copy of the plan required by 20.6.2.1.1 shall be readily available at all times when the facility is open. [\textit{101}: 20.7.1.3; \textit{101}: 21.7.1.3]

20.6.2.1.4 The provisions of Section 10.6 and 20.6.2.1.5 through 20.6.2.2.3 shall apply.

20.6.2.1.5 Fire drills in ambulatory health care facilities shall include the transmission of a fire alarm signal and simulation of emergency fire conditions. [\textit{101}: 20.7.1.4; \textit{101}: 21.7.1.4]

20.6.2.1.5.1 Patients shall not be required to be moved during drills to safe areas or to the exterior of the building. [\textit{101}: 20.7.1.5; \textit{101}: 21.7.1.5]

20.6.2.1.5.2 Drills shall be conducted quarterly on each shift to familiarize facility personnel (nurses, interns, maintenance engineers, and administrative staff) with the signals and emergency action required under varied conditions. [\textit{101}: 20.7.1.6; \textit{101}: 21.7.1.6]

20.6.2.1.5.3 When drills are conducted between 9:00 p.m. (2100 hours) and 6:00 a.m. (0600 hours), a coded announcement shall be permitted to be used instead of audible alarms. [\textit{101}: 20.7.1.7; \textit{101}: 21.7.1.7]

20.6.2.1.6 Patients shall not be required to be moved during drills to safe areas or to the exterior of the building. [\textit{101}: 20.7.1.5; \textit{101}: 21.7.1.5]

20.6.2.1.7 Drills shall be conducted quarterly on each shift to familiarize facility personnel (including but not limited to nurses, interns, maintenance engineers, and administrative staff) with the emergency action required under varied conditions. [\textit{101}: 20.7.1.6; \textit{101}: 21.7.1.6]

20.6.2.1.8 Employees of ambulatory health care facilities shall be instructed in life safety procedures and devices. [\textit{101}: 20.7.1.8; \textit{101}: 21.7.1.8]
Committee Statement

Committee Statement: Extract update.
Response Message:
All health care personnel shall be instructed in the use of the code phrase to ensure transmission of an alarm under either of the following conditions:

1. When the individual who discovers a fire must immediately go to the aid of an endangered person
2. During a malfunction of the building fire alarm system [\textit{101: 20.7.2.3.2; 101: 21.7.2.3.2}]
Newly introduced upholstered furniture within detention and correctional occupancies shall be tested in accordance with the provisions of meet the criteria specified in 12.6.3.1(2) and 12.6.3.2.1. [101: 23.7.4.2]
Newly introduced mattresses within detention and correctional occupancies shall be tested in accordance with the provisions of, meet the criteria specified in 12.6.3.2 and 12.6.3.2.2. [101: 23.7.4.3]
20.7.3.2 New Interior Wall and Ceiling Finish.

**Interior** New interior wall and ceiling finish materials complying with Section 12.5 shall be Class A or Class B in corridors, in exits, and in any space not separated from corridors and exits by partitions capable of retarding the passage of smoke; and Class A, Class B, or Class C in all other areas. The provisions of 12.5.9.1 shall not apply to new detention and correctional occupancies. [101: 22.3.3.2]
20.7.3.3 Existing Interior Wall and Ceiling Finish.

Existing interior wall and ceiling finish materials complying with Section 12.5 shall be Class A or Class B in corridors, in exits, and in any space not separated from corridors and exits by partitions capable of retarding the passage of smoke; and Class A, Class B, or Class C in all other areas. [101: 23.3.3.2]
20.7.3.4 New Interior Floor Finish.

20.7.3.4.1 Interior floor finish shall comply with Section 12.5. [101: 22.3.3.3.1]

20.7.3.4.2 Interior floor finish in exit enclosures and exit access corridors shall be not less than Class II. The provisions of 12.5.9.2 shall not apply to new detention and correctional occupancies. [101: 22.3.3.3.2]

20.7.3.4.3 Interior floor finish shall comply with 12.5.8.1 or 12.5.8.2, as applicable. [101: 22.3.3.3.3]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
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Submittal Date: Fri Aug 09 13:56:30 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
### Second Revision No. 309-NFPA 1-2013 [ Section No. 20.8.2.4.3 ]

| 20.8.2.4.3 | Emergency Action Plans. Emergency action plans in accordance with Section 10.8 shall be provided. [101: 28.7.5] |

#### Submitter Information Verification

<table>
<thead>
<tr>
<th>Submitter Full Name:</th>
<th>Gregory Harrington</th>
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<tbody>
<tr>
<td>Organization:</td>
<td>National Fire Protection Assoc</td>
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<td>Street Address:</td>
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<td>Submittal Date:</td>
<td>Fri Aug 09 15:19:19 EDT 2013</td>
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#### Committee Statement

<table>
<thead>
<tr>
<th>Committee Statement:</th>
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<td>Response Message:</td>
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</table>
Section 20.8.2.5.1

New draperies, curtains, and other similar loosely hanging furnishings and decorations shall be flame resistant as demonstrated by testing in accordance with meet the flame propagation performance criteria contained in Test Method 1 or Test Method 2, as appropriate, of NFPA 701, *Standard Methods of Fire Tests for Flame Propagation of Textiles and Films* [101: 28.7.6.1; 101: 29.7.6.1].

Submitter Information Verification

**Submitter Full Name:** Gregory Harrington  
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**City:**  
**State:**  
**Zip:**  
**Submittal Date:** Fri Aug 09 15:21:30 EDT 2013

Committee Statement

**Committee Statement:** Extract update.  
**Response Message:**
20.8.3 Interior Finish.

20.8.3.1 General.
Interior finish shall be in accordance with Section 12.5. [101:28.3.3.1; 101: 29.3.3.1]

20.8.3.2 New Interior Wall and Ceiling Finish.
Interior finish shall be in accordance with Section 12.5. New interior wall and ceiling finish materials complying with Section 12.5 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 [101: 28.3.3.2]

20.8.3.3 Existing Interior Wall and Ceiling Finish.
Existing interior wall and ceiling finish materials complying with Section 12.5 shall be permitted as follows:

1. Exit enclosures — Class A or Class B
2. Lobbies and corridors — Class A or Class B
3. Other spaces — Class A, Class B, or Class C [101: 29.3.3.2]

20.8.3.4 New Interior Floor Finish.

20.8.3.4.1 New interior floor finish shall comply with Section 12.5. [101:28.3.3.1]

20.8.3.4.2 New interior floor finish in exit enclosures and exit access corridors and spaces not separated from them by walls complying with 28.3.6.1 of NFPA 101 shall be not less than Class II. [101:28.3.3.2]

20.8.3.4.3 New interior floor finish shall comply with 12.5.8.1 or 12.5.8.2, as applicable. [101: 28.3.3.3]

20.8.3.5 Interior Floor Finish (Existing Nonsprinklered Buildings).
In nonsprinklered buildings, newly installed interior floor finish in exits and exit access corridors shall be not less than Class II in accordance with 12.5.8. [101:29.3.3.3]
20.9.3 Interior Finish.

20.9.3.1 General.
Interior finish shall be in accordance with Section 12.5. [101: 30.3.3.1; 101: 31.3.3.1]

20.9.3.2 New Interior Wall and Ceiling Finish.
Interior New interior wall and ceiling finish materials complying with Section 12.5 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 [101 : 30.3.3.2]

20.9.3.3 Existing Interior Wall and Ceiling Finish.
Interior Existing interior wall and ceiling finish materials complying with Section 12.5 shall be permitted as follows:

1. Exit enclosures — Class A or Class B
2. Lobbies and corridors — Class A or Class B
3. Other spaces — Class A, Class B, or Class C [101 : 31.3.3.2]

20.9.3.4 New Interior Floor Finish.
20.9.3.4.1 New interior floor finish shall comply with Section 12.5. [101:30.3.3.1]

20.9.3.4.2 New interior floor finish in exit enclosures and exit access corridors and spaces not separated from them by walls complying with 30.3.6 of NFPA 101 shall be not less than Class II. [101:30.3.3.2]

20.9.3.4.3 New interior floor finish shall comply with 12.5.8.1 or 12.5.8.2, as applicable. [101:30.3.3.3]

20.9.3.5 Existing Building Interior Floor Finish.
In buildings utilizing Option 1 or Option 2, as defined in 31.1.1.1 of NFPA 101, newly installed interior floor finish in exits and exit access corridors shall be not less than Class II in accordance with 12.5.8. [101:31.3.3.3]
20.12.3.3 New Interior Floor Finish.

20.12.3.3.1 Interior New interior floor finish shall comply with Section 12.5. [101: 36.3.3.3.1]

20.12.3.3.2 Interior New interior floor finish in exit enclosures shall be Class I or Class II. [101: 36.3.3.3.2]

20.12.3.3.3 Interior New interior floor finish shall comply with 12.5.8.1 or 12.5.8.2, as applicable. [101: 36.3.3.3.3]

20.12.3.3.4 Existing Interior Floor Finish. (Reserved) [101: 37.3.3.3]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Fri Aug 09 15:40:01 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
20.13.3.3 New Interior Floor Finish.

20.13.3.3.1 New interior floor finish shall comply with Section 12.5. [101: 38.3.3.3.1]

20.13.3.3.2 New interior floor finish in exit enclosures shall be Class I or Class II. [101: 38.3.3.3.2]

20.13.3.3.3 New interior floor finish shall comply with 12.5.8.1 or 12.5.8.2, as applicable. [101: 38.3.3.3.3]

20.13.3.3.4 Existing Interior Floor Finish. (Reserved)

[101:39.3.3.3]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
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Submittal Date: Fri Aug 09 15:44:06 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
20.15.3.3.1
Interior floor finish in exit enclosures and in exit access corridors shall be not less than Class I or Class II.

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Fri Aug 09 15:46:38 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
20.15.5 Bulk Storage Elevators.
Bulk storage elevators shall comply with 20.15.5.1 and NFPA 61, Standard for the Prevention of Fires and Dust Explosions in Agricultural and Food Processing Facilities.

20.15.5.1* Application.
The requirements for bulk storage elevators of 20.15.5 shall apply to all of the following:

(1) All facilities that receive, handle, process, dry, blend, use, mill, package, store, or ship dry agricultural bulk materials, their by-products, or dusts that include grains, oilseeds, agricultural seeds, legumes, sugar, flour, spices, feeds, and other related materials

(2) All facilities designed for manufacturing and handling starch, including drying, grinding, conveying, processing, packaging, and storing dry or modified starch, and dry products and dusts generated from these processes

(3) Those seed preparation and meal-handling systems of oilseed processing plants not covered by NFPA 36, Standard for Solvent Extraction Plants

NFPA 61 Subsection 20.15.5 shall not apply to oilseed extraction plants that are covered by NFPA 36.

20.15.5.3 Applicability.

20.15.5.3.1 Unless otherwise noted, the provisions of 20.15.5 on bulk storage elevators shall not be applied to facilities, equipment, structures, or installations that were existing or approved for construction or installation prior to the effective date of this Code, except in those cases where it is determined by the AHJ that the existing situation involves a distinct hazard to life or adjacent property.

20.15.5.3.2 The requirements of Chapter 11 of NFPA 61 shall apply to all facilities.

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
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Submittal Date: Mon Jul 15 13:15:47 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:

21.1.4.1 The requirements of Sections 40.1 through 40.5 of NFPA 101 shall be met, except as modified by

21.1.4.1.1 [101: 40.6.1.1] There shall be not less than two means of egress from each aircraft servicing area. [101: 40.6.1.2]

21.1.4.1.2 [101: 40.6.1.4] Exits from aircraft servicing areas shall be provided at intervals not exceeding 150 ft (46 m) on all exterior walls. [101: 40.6.1.4]

21.1.4.1.3 [101: 40.6.1.4] Where horizontal exits are provided, doors shall be provided in the horizontal exit fire barrier at intervals not exceeding 100 ft (30 m). [101: 40.6.1.4]

21.1.4.2 The requirements for exits from aircraft servicing areas shall comply with 21.1.4.2.1 through 21.1.4.2.4. [101: 40.6.2.1]

21.1.4.2.1 [101: 40.6.2.1] There shall be not less than two means of egress from each aircraft servicing area. [101: 40.6.2.2]

21.1.4.2.2 [101: 40.6.2.3] Exits from aircraft servicing areas shall be provided at intervals not exceeding 150 ft (46 m) on all exterior walls. [101: 40.6.2.3]

21.1.4.2.3 [101: 40.6.2.3] Where horizontal exits are provided, doors shall be provided in the horizontal exit fire barrier at intervals not exceeding 100 ft (30 m). [101: 40.6.2.3]

21.1.4.2.4 [101: 40.6.2.4] Where dwarf, or “smash,” doors are provided in doors that accommodate aircraft, such doors shall be permitted for compliance with 21.1.4.2.1 through 21.1.4.2.3. [101: 40.6.2.4]

21.1.4.3 Means of egress from mezzanine floors in aircraft servicing areas shall be arranged so that the travel distance to the nearest exit from any point on the mezzanine does not exceed 75 ft (23 m), and such means of egress shall lead directly to a properly enclosed stair discharging directly to the exterior, to a suitable cutoff area, or to outside stairs. [101: 40.6.2.3]

21.1.4.4 Dead ends shall not exceed 50 ft (15 m) for other than high hazard contents areas and shall not be permitted for high hazard contents areas. [101: 40.6.3.4]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submital Date: Fri Aug 09 15:55:41 EDT 2013

Committee Statement
Committee Statement:  Extract update.
Response Message: 
Second Revision No. 547-NFPA 1-2013 [Sections 21.1.5.1.1, 21.1.5.1.2]

21.1.5.1.1
There shall be not less than two means of egress from each aircraft servicing storage area. [101:42.6.1.1]

21.1.5.1.2
Exits from aircraft servicing storage areas shall be provided at intervals not exceeding 150 ft (46 m) on all exterior walls. [101:42.6.1.2]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Fri Aug 23 17:25:54 EDT 2013

Committee Statement

Committee Statement: Editorial correction per source document (NFPA 101).
Response Message:
21.2.3.1
Airport terminal buildings shall be of Type I, Type II, or Type IV construction, as defined in NFPA 220, Standard on Types of Building Construction. [415: 4.1.1]
21.3.4.6.9
The foam concentrate for the fixed system or manual fire-fighting equipment shall be listed in accordance with UL 162, *Standard for Safety Foam Equipment and Liquid Concentrates*, and shall be on the qualified products list for MIL-F-24385, or equivalent. [418:5.7.9]
25.1.6.2
An enclosed area shall be protected by an approved sprinkler system in accordance with Section 13.3, unless such an area is one of the following:

(1) Enclosed stadiums, arenas, and similar structures

(2) Press boxes of less than 1000 ft² (93 m²)

(3) Storage facilities of less than 1000 ft² (93 m²), if enclosed with minimum 1-hour fire resistance-rated construction

(4) Enclosed areas underneath grandstands or bleachers that comply with the exemptions of 5.9(1) or 5.9(2) 16.4.9.5 of NFPA 102 [5000: 32.3.5.3]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Thu Aug 22 15:37:42 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
**25.1.7 Detection, Alarm, and Communications Systems.**

Detection, alarm, and communications systems shall comply with Section 13.7 where required by 13.7.2.1 or 13.7.2.2.

**25.1.7.1 General.**

**25.1.7.1.1** Assembly occupancies with occupant loads of more than 300 and all theaters with more than one audience-viewing room shall be provided with an approved fire alarm system in accordance with Section 13.7 and this section, unless otherwise permitted by 25.1.7.1.2. [101:12.3.4.1.1]

**25.1.7.1.2** Assembly occupancies that are a part of a multiple occupancy protected as a mixed occupancy (see 6.1.14) shall be permitted to be served by a common fire alarm system, provided that the individual requirements of each occupancy are met. [101:12.3.4.1.2]

**25.1.7.2 Initiation.**

**25.1.7.2.1** Initiation of the required fire alarm system shall be by both of the following means:

1. Manual means in accordance with 13.7.1.7.1 (1), unless otherwise permitted by the following:
   
   a. The requirement of 25.1.7.2.1 (1) shall not apply where initiation is by means of an approved automatic fire detection system in accordance with 13.7.1.7.1 (2) that provides fire detection throughout the building.
   
   b. The requirement of 25.1.7.2.1 (1) shall not apply where initiation is by means of an approved automatic sprinkler system in accordance with 13.7.1.7.1 (3) that provides fire detection and protection throughout the building.

2. Where automatic sprinklers are provided, sprinkler system waterflow shall initiate the fire alarm system, even where manual fire alarm boxes are provided in accordance with 25.1.7.2.1 (1). [101:12.3.4.2.1]

**25.1.7.2.2** The initiating device shall be capable of transmitting an alarm to a receiving station located within the building that is constantly attended when the assembly occupancy is occupied. [101:12.3.4.2.2]

**25.1.7.2.3** In assembly occupancies with occupant loads of more than 300, automatic detection shall be provided in all hazardous areas that are not normally occupied, unless such areas are protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 13.3. [101:12.3.4.2.3]

**25.1.7.3 Notification.**

The required fire alarm system shall activate an audible and visible alarm in a constantly attended receiving station within the building when occupied for purposes of initiating emergency action. [101:12.3.4.3]

**25.1.7.3.1** Positive alarm sequence in accordance with 13.7.1.9.4 shall be permitted. [101:12.3.4.3.1]

**25.1.7.3.2** Reserved.

**25.1.7.3.3** Occupant notification shall be by means of voice announcements in accordance with 13.7.1.9.9 initiated by the person in the constantly attended receiving station. [101:12.3.4.3.3]

**25.1.7.3.4** Occupant notification shall be by means of visible signals in accordance with 13.7.1.9.5 initiated by the person in the constantly attended receiving station, unless otherwise permitted by 25.1.7.3.5. [101:12.3.4.3.4]
25.1.7.3.5
Visible signals shall not be required in the assembly seating area, or the floor area used for the contest, performance, or entertainment, where the occupant load exceeds 1000 and an approved, alternative visible means of occupant notification is provided. (See 13.7.1.9.5.7.) [101 :12.3.4.3.5]

25.1.7.3.6
The announcement shall be permitted to be made via a voice communication or public address system in accordance with 13.7.1.9.9.2. [101 :12.3.4.3.6]

25.1.7.3.7
Where the AHJ determines that a constantly attended receiving station is impractical, both of the following shall be provided:

1. Automatically transmitted evacuation or relocation instructions shall be provided in accordance with NFPA 72, National Fire Alarm and Signaling Code.
2. The system shall be monitored by a supervising station in accordance with NFPA 72.

Committee Statement
Committee Statement: Duplicate - see 13.7.2.
Response Message:
Second Revision No. 318-NFPA 1-2013 [Section No. 25.2.2.1]

25.2.2.1

Submitter Information Verification

\textbf{Submitter Full Name:} Gregory Harrington

\textbf{Organization:} National Fire Protection Assoc

\textbf{Street Address:}

\textbf{City:}

\textbf{State:}

\textbf{Zip:}

\textbf{Submittal Date:} Fri Aug 09 16:19:46 EDT 2013

Committee Statement

\textbf{Committee Statement:} Extract update.

\textbf{Response Message:}
25.5.1.5.1

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Fri Aug 09 16:27:44 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
25.6.1.4.1
All membrane structure fabric shall meet the flame propagation performance criteria contained in Test Method 2 of NFPA 701, Standard Methods of Fire Tests for Flame Propagation of Textiles and Films. [101: 11.10.1.5.1]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Fri Aug 09 16:29:53 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
26.2* Laboratories in Health Care Occupancies.

Any building, space, room, or group of rooms in a health care facility intended to serve activities involving procedures for investigation, diagnosis, or treatment in which flammable, combustible, or oxidizing materials are to be used shall comply with Section 26.1 of this Code and Chapter 11 of NFPA 99, Health Care Facilities Code.

Submitter Information Verification

Submitter Full Name: [Not Specified]
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Thu Oct 24 17:17:34 EDT 2013

Committee Statement

Committee Statement: NFPA 99 no longer addresses laboratories in health care occupancies, therefore the noted paragraph is incorrect. Also delete associated Annex A text.
27.1.2
This chapter shall not apply to recreational vehicles as defined in NFPA 1192, Standard on Recreational Vehicles, or to park trailers as defined in RVIA/ANSI A.119.5, Standard for Recreational Park Trailers.

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Fri Aug 23 17:29:46 EDT 2013

Committee Statement

Committee Statement: Editorial correction.
Response Message:
32.4.5.2
Combustible drapes, drops, and any other similar combustible hangings or vertically placed materials shall comply with one of the following criteria options:

1. The materials meet the requirements of NFPA 701, Standard Methods of Fire Tests for Flame Propagation of Textiles and Films.

2. The materials exhibit a heat release rate not exceeding 100 kW when tested in accordance with NFPA 289, Standard Method of Fire Test for Individual Fuel Packages, using the 20 kW ignition source.

3. The materials are present in such limited quantities that a hazard of fire development or spread is minimal.

4. The materials are considered by the authority having jurisdiction to exhibit acceptable fire performance.

5. Approved interim measures are provided for the period during which the combustible materials are present.

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Mon Jul 22 09:02:15 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
32.5.8.4
Where power from both mobile generators and site electrical services are used to energize equipment in the same proximate location at production locations, grounds for the two systems shall be bonded in accordance with NFPA 70, National Electrical Code. [140:5.8.4]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Mon Jul 22 09:20:33 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
32.5.11.8 Fire Hydrants and Fire Appliances.

Hydrants, standpipes, and fire department connections (FDCs) shall not be obstructed, blocked, or rendered inoperable unless approved by the AHJ. [140: 5.11.8]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Mon Jul 22 09:23:37 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
32.6.2.1
The use, mixing, dispensing, and storage of flammable or combustible liquids shall be in accordance with the fire code as adopted by the AHJ and the following codes, as applicable, unless otherwise permitted by 32.6.2.2:

1. NFPA 30, Flammable and Combustible Liquids Code (See Chapter 66.)
2. NFPA 58, Liquefied Petroleum Gas Code (See Chapter 69.)
Conductive FIBC elements shall terminate in a grounding tab, and resistance from these elements to the tab shall be equal or less than $10^8$ ohms. [654:9.3.4.4.1]
Second Revision No. 608-NFPA 1-2013 [ New Section after 40.4.3.5.2 ]

40.4.3.6
Particulate solids shall not be manually dumped directly into vessels containing flammable atmospheres (gases at a flammable concentration with an oxidant) or where displacement could cause a flammable atmosphere external to the vessel. [654: 9.3.6]

40.4.3.7*
Manual additions of solids through an open port or a manway into a vessel containing flammable atmospheres shall be permitted to be done in 50 lb (25 kg) batches or smaller, provided the requirements of 40.4.3.7.1 40.4.3.7.1 through 40.4.3.7.7 40.4.3.7.7 are satisfied. [654: 9.3.7]

40.4.3.7.1*
Conductive or static-dissipative components of the container shall be grounded. [654: 9.3.7.1]

40.4.3.7.2
Direct emptying of powders from nonconductive plastic bags into a vessel that contains a flammable atmosphere shall be strictly prohibited. [654: 9.3.7.2]

40.4.3.7.3
The use of nonconductive liners in grounded conductive or static-dissipative outer packaging shall be permitted, provided that the liner thickness is less than 0.08 in. (2 mm) and the liner cannot become detached during emptying. [654: 9.3.7.3]

40.4.3.7.4*
Loading chutes, receiving vessels, and auxiliary devices used for addition of bulk material shall be conductive and grounded. [654: 9.3.7.4]

40.4.3.7.5*
Personnel in the vicinity of openings of vessels that contain flammable atmospheres shall be grounded. [654: 9.3.7.5]

40.4.3.7.6
Operators shall wear flame-resistant garments as specified in NFPA 2113, Standard on Selection, Care, Use, and Maintenance of Flame-Resistant Garments for Protection of Industrial Personnel Against Flash Fire, and any other personal protective equipment required for protection against flash fire hazards during charging operations. [654: 9.3.7.6]

40.4.3.7.7*
A documented risk evaluation acceptable to the AHJ shall be conducted to determine additional engineering and administrative controls necessary to protect against ignition of the flammable atmosphere. [654: 9.3.7.7]

Supplemental Information

<table>
<thead>
<tr>
<th>File Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SR608_A.40.4.3.7_102813.docx</td>
<td>SR608 associated Annex A text.</td>
</tr>
</tbody>
</table>

Submitter Information Verification

Submitter Full Name: Kristin Bigda
Organization: National Fire Protection Assoc
Street Address: City:
State: Zip:
Submittal Date: Sat Oct 26 12:07:41 EDT 2013

Committee Statement
<table>
<thead>
<tr>
<th>Committee Statement:</th>
<th>Extract update. Annex A material is also being added for consistency with the extract update.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Response Message:</td>
<td></td>
</tr>
</tbody>
</table>
A.40.4.3.7
See NFPA 77, *Recommended Practice on Static Electricity*, for recommended practices on
manual additions of solids into vessels containing flammable atmospheres, including
recommended practices on the grounding of personnel. [654:A.9.3.7]

A.40.4.3.7.1
For example, metal chimes on fiber drums should be grounded. For uncoated fiber drums,
grounding one chime might be sufficient. Where contact with a grounded operator is used to
ground the container (such as with static-dissipative bags), it is important that gloves, if used,
be static-dissipative and free of contaminants. [654:A.9.3.7.1]

A.40.4.3.7.4
Examples of auxiliary loading devices include shovels, scoops, and funnels. Conductive tools can
be grounded through a properly grounded operator. See also A.40.4.3.7.1 for guidance related
to grounding of containers. [654:A.9.3.7.4]

A.40.4.3.7.5
Where static-dissipative footwear is used for personnel grounding, the floor resistance to
ground should be between $10^6$ and $10^9$ ohms. Care should be taken to ensure that deposits,
residues, and coatings that build up over time do not impair grounding between the floor and
personnel. [654:A.9.3.7.5]

A.40.4.3.7.7
A risk evaluation should address considerations such as container construction, properties of
the solids, properties of the liquid, addition rate, material construction of the receiving vessel,
agitating devices, and intensity of agitation. The risk evaluation should identify the necessary
engineering and administrative controls to ensure that the potential charge accumulation
during dumping of the contents will not produce a discharge that exceeds the MIE of the
flammable atmosphere within the vessel. [654:A.9.3.7.7]
40.5.7.1
Automatic extinguishing systems or special hazard extinguishing systems, where provided, shall be
designed and installed in accordance with Section 13.8, and maintained as applicable in accordance
with NFPA 25, Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection
Systems, installed, and maintained in accordance with the following standards, as applicable:

1. NFPA 11, Standard for Low-, Medium-, and High-Expansion Foam
2. NFPA 12, Standard on Carbon Dioxide Extinguishing Systems
3. NFPA 12A, Standard on Halon 1301 Fire Extinguishing Systems
5. NFPA 16, Standard for the Installation of Foam-Water Sprinkler and Foam-Water Spray Systems
6. NFPA 17, Standard for Dry Chemical Extinguishing Systems
7. NFPA 25, Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection
   Systems
8. NFPA 750, Standard on Water Mist Fire Protection Systems
41.2.2.1*
The PAI shall consider the safety of the hot work operator and fire watch with respect to personal protective equipment (PPE) for other special hazards beyond hot work. (See 41.3.1.) [51B:4.2.1]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Fri Jul 19 09:40:12 EDT 2013

Committee Statement

Committee Statement: Editorial correction.
Response Message:
41.3.2 Permissible Areas.

41.3.2.1 General.
Hot work shall be permitted only in areas that are or have been made fire safe. [51B: 5.2.1]

41.3.2.2 Designated or Permit-Required Areas.
Hot work shall be performed in either designated areas or permit-required areas. [51B: 5.2.2]

41.3.2.2.1 Designated Areas.

In order for a location to be a designated area, the area shall meet the requirements in 41.3.4.2. [51B: 5.2.2.1.1]

41.3.2.2.2 Prior to the start of any hot work in a designated area, at a minimum, the hot work operator shall perform the following:

1. The location is verified as fire resistant.
2. The requirements of 41.3.4.2 (3) are met.
3. Fire extinguishers are in working condition and readily available.
4. Ventilation is working properly.
5. Equipment is in working order.

41.3.2.2.3 Permanent areas designated for hot work shall be reviewed at least annually by the PAI. [51B: 5.2.2.1.3]

41.3.2.2.4 Signs shall be posted designating hot work areas as deemed necessary by the PAI. [51B: 5.2.2.2]

41.3.2.3 Signs shall be posted designating hot work areas as deemed necessary by the PAI. [51B: 5.2.2.2]
Before a hot work permit is issued, the following conditions shall be verified by the PAI:

1. The hot work equipment to be used shall be in satisfactory operating condition and in good repair.

2. Where combustible materials, such as paper clippings, wood shavings, or textile fibers, are on the floor, the floor shall be swept clean for a radius of 35 ft (11 m) and the following criteria also shall be met:
   a. Combustible floors shall be kept wet, covered with damp sand, or protected by a listed welding blanket, welding pad, or equivalent.
   b. Where floors have been wet down, personnel operating arc welding equipment or cutting equipment shall be protected from possible shock.

3. All combustibles shall be relocated at least 35 ft (11 m) in all directions from the work site, and the following criteria also shall be met:
   a. If relocation is impractical, combustibles shall be protected by a listed welding blanket, welding pad, or equivalent.
   b. To prevent the entrance of sparks, the edges of covers at the floor shall be tight including at the point at which several covers overlap where a large pile is being protected.

4. Openings or cracks in walls, floors, or ducts within 35 ft (11 m) of the site shall be covered or sealed with listed or approved fire-rated or noncombustible material to prevent the passage of sparks to adjacent areas.

5. Ducts and conveyor systems that might carry sparks to distant combustibles shall be shielded, or shut down, or both.

6. If hot work is done near walls, partitions, ceilings, or roofs of combustible construction, they shall be protected by a listed welding curtain, welding blanket, welding pad, or equivalent.

7. If hot work is done on one side of a wall, partition, ceiling, or roof, one of the following criteria shall be met:
   a. Precautions shall be taken to prevent ignition of combustibles on the other side by relocating the combustibles.
   b. If it is impractical to relocate combustibles, a fire watch shall be provided on the side opposite from where the work is being performed.

8. Hot work shall not be attempted on a partition, wall, ceiling, or roof that has a combustible covering or insulation, or on walls or partitions of combustible sandwich-type panel construction.

9. Hot work that is performed on pipes or other metal that is in contact with combustible walls, partitions, ceilings, roofs, or other combustibles, shall not be undertaken if the work is close enough to cause ignition by conduction.

10. Fully charged and operable fire extinguishers that are appropriate for the type of possible fire shall be available immediately at the work area.

11. If existing hose lines are located within the hot work area defined by the permit, they shall be connected and ready for service but shall not be required to be unrolled or charged.

12. The following shall apply to hot work done in close proximity to a sprinkler head:
   a. A wet rag shall be laid over the sprinkler head and then removed at the conclusion of the welding or cutting operation.
   b. During hot work, special precautions shall be taken to avoid accidental operation of automatic fire detection or suppression systems (e.g., special extinguishing systems or sprinklers).

13. The operator and nearby personnel shall be suitably protected against dangers such as heat, sparks, and slag.

14. In instances where the scope of work and the tools used to conduct hot work result in possible travel of slag, sparks, spatter, or similar mobile sources of ignition farther than 35 ft (11 m), the PAI shall be permitted to extend the distances and areas addressed in 41.3.4.2(2) through 41.3.4.2(4).

15. In instances where the scope of work and tools used to conduct hot work are known to be incapable of generating slag, sparks, spatter or similar mobile sources of ignition capable of leaving
the immediate area of the applied hot work, the PAI shall be permitted to do the following:

(a) Reduce the distances and areas addressed in 41.3.4.2(2) through 41.3.4.2(4) to distances and areas that he or she considers fire safe for the intended operation.

(b) Describe those distances and areas on the hot work permit. [51B: 5.4.2]

Committee Statement

Committee Statement: Extract update.

Response Message:
41.3.4.4

The hot work permit shall not be valid for a period exceeding 24 hours. [51B:5.4.4.3.1]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Fri Jul 19 09:59:29 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
Second Revision No. 559-NFPA 1-2013 [ Section No. 42.3.3.1 ]

<table>
<thead>
<tr>
<th>42.3.3.1 Underground Tanks.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Underground storage tanks shall meet all applicable requirements of Chapters 21 and 22 of NFPA 30. [30A:4.3.1]</td>
</tr>
</tbody>
</table>

Submitter Information Verification

| Submitter Full Name: | Gregory Harrington |
| Organization: | National Fire Protection Assoc |
| City: | |
| State: | |
| Zip: | |
| Submittal Date: | Thu Sep 26 14:54:18 EDT 2013 |

Committee Statement

| Committee Statement: | Extract update. |
| Response Message: | |
Vaults shall be designed and constructed in accordance with 42.3.3.3.1.1 through 42.3.3.3.1.4.

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Thu Sep 26 15:04:44 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
Adjacent vaults shall be permitted to share a common wall. [30A: 4.3.3.3.1.3] [30: 25.5.1.3]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Thu Sep 26 15:05:42 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
42.3.3.3.1.4
Where required, the vault shall be wind and earthquake resistant, in accordance with recognized
engineering standards. [30A: 4.3.3.3.1.4] [30: 25.5.1.4]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Thu Sep 26 15:06:31 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
Installation Requirements.

Storage tank vaults shall be installed in accordance with the requirements of 42.3.3.3.2.1 and 42.3.3.3.2.2. [30A: 4.3.3.3.2] [30: 25.5.2]

Each vault and its tank shall be anchored to resist uplifting by groundwater or flooding, including when the tank is empty. [30A: 4.3.3.3.2.1] [30: 25.5.2.1]

Vaults that are not resistant to damage from the impact of a motor vehicle shall be protected by collision barriers. [30A: 4.3.3.3.2.2] [30: 25.5.2.2]
42.3.3.4 Tank Selection and Arrangement.
42.3.3.4.1 Tanks installed in storage tank vaults shall be listed for aboveground use. [30A: 4.3.3.4.1] [30: 25.3.1.4]
42.3.3.4.2 Each tank shall be in its own vault and shall be completely enclosed by the vault. [30A: 4.3.3.4.2] [30: 25.3.1.5]
42.3.3.4.3 Sufficient clearance between the tank and the vault shall be provided to allow for visual inspection and maintenance of the tank and its appurtenances. [30A: 4.3.3.4.3] [30: 25.3.1.6]
42.3.3.4.4 Backfill shall not be permitted around the tank. [30A: 4.3.3.4.4] [30: 25.3.1.7]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Thu Sep 26 15:09:16 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
42.3.3.8* Corrosion Control Protection.

Any portion of a tank or its piping that is in contact with the soil shall have properly engineered, installed, and maintained corrosion protection that meets the requirements of 66.21.4.5. [30A:4.3.8]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submit Date: Thu Sep 26 15:15:14 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
42.8.2.1
The installation and use of CNG and hydrogen LNG systems shall meet the requirements of NFPA 52 except as modified by Section 42.8. The installation and use of LNG hydrogen systems shall meet the requirements of NFPA 52 except as modified by Section 42.8. The installation and use of LP-Gas systems shall meet the requirements of NFPA 58 except as modified by Section 42.8. [30A:12.2.1]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Thu Sep 26 15:43:01 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
Second Revision No. 567-NFPA 1-2013 [Section No. 42.8.2.3]

42.8.2.3
Dispensing devices for CNG, LNG, hydrogen, and LP-Gas shall be listed. [30A:12.2.3]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Thu Sep 26 15:47:01 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
42.8.3.3 Aboveground tanks storing LP-Gas shall be separated from any adjacent property line that is or can be built upon, any public way, and the nearest important building on the same property by not less than the distances given in Section 6.3 of NFPA 58. [30A: 12.3.3]
42.8.3.2
Aboveground tanks storing LP-Gas, hydrogen shall be separated from any adjacent property line that is or can be built upon, any public way, and the nearest important building on the same property by not less than the distances given in 69.3.3, NFPA 2. [30A: 12.3.2]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Thu Sep 26 16:01:17 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
Second Revision No. 570-NFPA 1-2013 [Section No. 42.8.3.3]

42.8.3.4* Aboveground tanks storing CNG, LNG, or LP-Gas shall be separated from each other by at least 20 ft (6 m) and from dispensing devices that dispense liquid or gaseous motor vehicle fuels by at least 50 ft (15 m).

Exception No. 1: This required separation shall not apply to tanks storing or handling fuels that have of the same chemical composition.

Exception No. 2: When both the gaseous fuel storage and dispensing equipment are at least 50 ft (15 m) from any other aboveground motor fuel storage or dispensing equipment, the requirements of NFPA 52 or NFPA 58, whichever is applicable, shall apply. [30A:12.3.3.4]
42.8.3.5
Aboveground storage tanks for the storage of CNG, LNG, or LP-Gas shall be provided with physical protection in accordance with 42.3.3.7. [30A:12.3.4 12.3.5]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Thu Sep 26 16:08:19 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
Second Revision No. 572-NFPA 1-2013 [ Section No. 42.8.3.5 ]

42.8.3.6 Horizontal separation shall not be required between aboveground tanks storing CNG, LNG, or LP-Gas and underground tanks containing Class I or Class II liquids, provided the structural limitations of the underground tanks are not exceeded. [30A:12.3.5.6 ]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Thu Sep 26 16:09:22 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
42.8.6.2*
Table 42.8.6.2 shall be used to delineate and classify areas for the purpose of installation of electrical wiring and electrical utilization equipment. [30A:12.6.2]
Table 42.8.6.2 Electrical Equipment Classified Areas for Dispensing Devices

<table>
<thead>
<tr>
<th>Dispensing Device</th>
<th>Class I, Division 1</th>
<th>Class I, Division 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compressed natural gas (CNG)</td>
<td>Entire space within the dispenser enclosure</td>
<td>5 ft (1.5 m) in all directions from dispenser enclosure</td>
</tr>
<tr>
<td>Liquefied natural gas (LNG)</td>
<td>Entire space within the dispenser enclosure and 5 ft (1.5 m) in all directions from the dispenser enclosure</td>
<td>From 5 ft (1.5 m) to 10 ft (3 m) in all directions from the dispenser enclosure</td>
</tr>
<tr>
<td>Liquefied petroleum gas (LP-Gas)</td>
<td>Entire space within the dispenser enclosure; 18 in. (46 cm) from the exterior surface of the dispenser enclosure to an elevation of 4 ft (1.22 m) above the base of the dispenser; the entire pit or open space beneath the dispenser and within 20 ft (6 m) horizontally from any edge of the dispenser when the pit or trench is not mechanically ventilated</td>
<td>Up to 18 in. (46 cm) above ground and within 20 ft (6 m) horizontally from any edge of the dispenser enclosure, including pits or trenches within this area when provided with adequate mechanical ventilation</td>
</tr>
</tbody>
</table>

[30A: Table 12.6.2]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Thu Sep 26 16:11:53 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
Second Revision No. 535-NFPA 1-2013 [ New Section after 42.10.2.1.7.2 ]

42.10.2.1.7.3*
ABC multipurpose dry chemical fire extinguishers (ammonium phosphate) shall not be placed on aircraft fueling vehicles, airport fuel servicing ramps, or aprons, or at airport fuel facilities. [407: 4.1.6.3]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc

Committee Statement

Committee Statement: Extract update - incorporates TIA 12-1 on NFPA 407.
Response Message:
42.11.1.1.5
Vehicles that are required to comply with applicable federal motor vehicle safety standards covering the installation of LNG fuel systems on vehicles and that are certified by the manufacturer as meeting these standards shall not be required to comply with Chapter 11 of NFPA 52, except 11.12.8 of NFPA 52.

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Fri Jul 12 17:19:50 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
Second Revision No. 399-NFPA 1-2013 [ Section No. 42.11.2.2.1 ]

42.11.2.2.1*
Chapter 11 of NFPA 58 applies to engine fuel systems on vehicles using LP-Gas in internal combustion engines, including containers, container appurtenances, carburetion equipment, piping, hose and fittings, and their installation. [58:11.1.1]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Tue Aug 20 11:51:25 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
Second Revision No. 400-NFPA 1-2013 [ Section No. 42.11.2.2.2 ]

42.11.2.2.2*
Chapter 11 of NFPA 58 shall apply to the installation of fuel systems supplying engines used to propel all motor vehicles. [58:11.1.2]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address: 
City: 
State: 
Zip: 
Submital Date: Tue Aug 20 11:53:14 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
### 42.11.2.4 Label Requirements.

#### 42.11.2.4.1
Each over-the-road general-purpose vehicle powered by LP-Gas shall be identified with a weather-resistant, diamond-shaped label. \([\text{58:11.12.1.1}]\)

#### 42.11.2.4.2
The label shall be located on an exterior vertical or near vertical surface on the lower right rear of the vehicle (on the trunk lid of a vehicle so equipped but not on the bumper of any vehicle) inboard from any other markings. \([\text{58:11.12.1.2}]\)

#### 42.11.2.4.3
The label shall be a minimum of 4 3/4 in. (120 mm) long by 3 1/4 in. (83 mm) high. \([\text{58:11.12.1.3}]\)

#### 42.11.2.4.4*
The marking shall consist of a border and the word PROPANE [1 in. (25 mm) minimum height centered in the diamond] in silver or white reflective luminous material on a black background. \([\text{58:11.12.1.4}]\)

---

**Submitter Information Verification**

**Submitter Full Name:** Gregory Harrington  
**Organization:** National Fire Protection Assoc  
**Street Address:**  
**City:**  
**State:**  
**Zip:**  
**Submittal Date:** Tue Aug 20 11:55:29 EDT 2013

**Committee Statement**

**Committee Statement:** Extract update.  
**Response Message:**
44.2 Application.

44.2.1 Chapter 44 shall apply to the following:

1. The commercial scale extraction processing of animal and vegetable oils and fats by the use of Class I flammable hydrocarbon liquids, hereinafter referred to as "solvents". [36: 1.1.1]

2. Any equipment and buildings that are located within 100 ft (30 m) of the extraction process, with the exception of the following actions: [36: 1.1.2]

3. The unloading, storage, and handling of solvents, regardless of distance from the extraction process [36: 1.1.3]

4. The means of conveying material to be extracted by which material to be extracted is conveyed from the preparation process to the extraction process [36: 1.1.4]

5. The means of conveying extracted desolventized solids and oil by which extracted desolventized solids and oil are conveyed from the extraction process [36: 1.1.5]

6. Preparation and meal finishing processes that are connected by conveyor to the extraction process, regardless of intervening distance [36: 1.1.6]

[36: 1.1]

44.2.2 Chapter 44 shall not apply to the following:

1. The storage of raw materials or finished products [36: 1.1.7]

2. Extraction processes that use liquids that are miscible with water [36: 1.1.8]

3. Extraction processes that use flammable gases, liquefied petroleum gases, or nonflammable gases [36: 1.1.9]

[36: 1.1]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Fri Jul 12 17:07:16 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
50.2.2.3.4
Zero clearance to limited-combustible materials shall be permitted where protected by one of the following:

1. Metal lath and plaster
2. Ceramic tile
3. Quarry tile
4. Other noncombustible materials or assembly of noncombustible materials that are listed for the purpose of reducing clearance
5. Other materials and products that are listed for the purpose of reducing clearance.

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Mon Aug 19 14:21:31 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
Second Revision No. 382-NFPA 1-2013 [ Section No. 50.4.4.3.1 ]

50.4.4.3.1 *
In existing dry or wet chemical systems and non-UL 300 wet chemical systems, when changes in the cooking media not in compliance with ANSI/UL 300 from animal oils and fats to vegetable oils occur, positioning of cooking equipment occur, replacement of cooking equipment occur, or the equipment is no longer supported by the manufacturer, the fire-extinguishing system should be made to comply with 50.4.4.3-[96:10.2.3.1] when any of the following occurs:

(1) The cooking medium is changed from animal oils and fats to vegetable oils.
(2) The positioning of the cooking equipment is changed.
(3) Cooking equipment is replaced.
(4) The equipment is no longer supported by the manufacturer.

[96: 10.2.3.1]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Mon Aug 19 14:25:37 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
Second Revision No. 383-NFPA 1-2013 [Section No. 50.4.4.3.2]

50.4.4.3.2
Effective January 1, 2016, all existing fire-extinguishing systems shall meet the requirements of 50.4.4.3. [96:10.2.3.2]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Mon Aug 19 14:28:21 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
Fixed pipe extinguishing systems in a single hazard area (see 3.3.45.4 of NFPA 96 for the definition of single hazard area) shall be arranged for simultaneous automatic operation upon actuation of any one of the systems. [96:10.3.1]
50.4.7.1.1
At least one manual actuation device shall be located a minimum of 10 ft (3 m) and a maximum of 20 ft (6 m) from the protected hood exhaust system(s) within the path of egress, or at an alternate location determined acceptable to the AHJ. [96:10.5.1.1]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Mon Aug 19 14:35:16 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
Second Revision No. 386-NFPA 1-2013 [ Section No. 50.4.7.1.2 ]

50.4.7.1.2
Manual actuation using a cable-operated pull station shall not require more than 40 lb (178 N) of force, with a pull movement not to exceed 14 in. (356 mm) to activate the automatic fire-extinguishing equipment. [96:10.5.1.2]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Mon Aug 19 14:37:07 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
Class K fire extinguishers shall be provided for cooking appliance hazards that involve combustible cooking media (vegetable oils and animal oils and fats). [96:10.10.2]
50.5.6.1*

Upon inspection, if the exhaust system is found to be contaminated with deposits from grease-laden vapors, the contaminated portions of the exhaust system shall be cleaned in accordance with IKECA/ANSI C-10 or equivalent standard by a properly trained, qualified, and certified person(s) acceptable to the AHJ. [96:11.6.1]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Mon Aug 19 14:48:34 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
Second Revision No. 389-NFPA 1-2013 [ New Section after 50.6.1.2.1 ]

<table>
<thead>
<tr>
<th>50.6.1.2.1.1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solid fuel used for flavoring within a gas-operated appliance shall be in a solid fuel holder (smoker box) that is listed with the equipment. [ 96: 12.1.2.1.1]</td>
</tr>
</tbody>
</table>

Submitter Information Verification

- **Submitter Full Name:** Gregory Harrington
- **Organization:** National Fire Protection Assoc

Committee Statement

- **Committee Statement:** Extract update.
- **Response Message:**
50.6.1.2.2.1
A solid fuel holder shall not be added to an existing appliance until the fire-extinguishing system has been evaluated by the fire-extinguishing system service provider. [96: 12.1.2.2.1]

Submitter Information Verification

Submitter Full Name: Gregory Harrington  
Organization: National Fire Protection Assoc
Street Address:  
City:  
State:  
Zip:  
Submittal Date: Mon Aug 19 14:58:07 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
Commercial Kitchen Cooking Oil Storage Tank Systems.

Storage of cooking oil (grease) in commercial cooking operations utilizing aboveground tanks installed within a building to store cooking oils with a capacity greater than 60 gal (227 L) shall also comply with 50.6.3.1 through 50.6.3.6. Commercial kitchen cooking oil storage tank systems shall comply with 66.19.7.

### 50.6.3.1 Cooking Oil Classification.

For purposes of this section, cooking oil shall be classified as a Class IIIIB liquid unless otherwise determined by testing.

### 50.6.3.2 Aboveground Storage Tanks.

#### 50.6.3.2.1 Metallic cooking oil storage tanks shall be listed in accordance with ANSI/UL 142, *Standard for Steel Aboveground Tanks for Flammable and Combustible Liquids*, or ANSI/UL 80, *Standard for Steel Tanks for Oil-Burner Fuels and Other Combustible Liquids*.

#### 50.6.3.2.2 Nonmetallic cooking oil storage tanks shall be in accordance with all of the following:

2. Tanks shall not exceed 200 gallons per tank.
3. Tanks shall be suitable for use with cooking oil and the maximum temperature to which the tank will be exposed during use.

### 50.6.3.3 Cooking Oil Storage System Components.

Cooking oil storage system components shall include, but are not limited to, piping, tubing, hoses, pumps, connections, fittings, valves, vents, and other related components used for the transfer of cooking oil and are permitted to be of either metallic or nonmetallic construction.

#### 50.6.3.3.1 Design Standards.

The design, fabrication, and assembly of system components shall be suitable for the working pressures and structural stresses to be encountered by the components.

#### 50.6.3.3.2 Components in Contact with Heated Oil.

Any system component that comes in contact with heated cooking oil shall be rated for the maximum intermittent and continuous operating temperatures expected in the system.

#### 50.6.3.3.3 Plenums.

Installation of nonmetallic cooking oil system components shall be prohibited in concealed interstitial spaces used as return air plenums unless the components are fully enclosed within continuous noncombustible raceways or enclosures, approved gypsum board assemblies, or within materials listed and labeled for such application.

### 50.6.3.4 Tank Venting.

Normal and emergency venting shall be provided for cooking oil storage tanks.

#### 50.6.3.4.1 Normal Vents.

#### 50.6.3.4.1.1 Normal venting shall be located above the maximum normal liquid line.

#### 50.6.3.4.2 Emergency Vents.

Emergency relief venting shall be in the form of construction or a device or devices that will relieve excessive internal pressure caused by an exposure fire.
50.6.3.5 Heating of Cooking Oil
Electrical equipment used for heating cooking oil shall be listed to ANSI/UL 499, Standard for Electric Heating Appliances, and shall comply with NFPA 70, National Electrical Code. Use of electrical immersion heaters shall be prohibited in nonmetallic tanks.

50.6.3.6 Electrical Equipment
Electrical equipment used for the operation of cooking oil storage systems shall comply with NFPA 70.

Submitter Information Verification

Submitter Full Name: Kristin Bigda
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Fri Oct 25 17:03:00 EDT 2013

Committee Statement

Committee Statement: Cooking oil storage tank systems fall under the jurisdiction of NFPA 30. Subsection 66.19.7 was updated to contain the new provisions contained in NFPA 30 regarding these types of systems.
Response Message:
Public Comment No. 37-NFPA 1-2013 [Section No. 50.6.3.2.2]
53.1.1.1*
Refrigeration unit and system installations having a refrigerant circuit containing more than 220 lb (100 kg) of Group A1 or 30 lb (13.6 kg) of any other group refrigerant shall be in accordance with Chapter 53 and the mechanical code.

Supplemental Information

<table>
<thead>
<tr>
<th>File Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SR609_A.53.1.1.1_102813.docx</td>
<td>SR609 associated Annex A text.</td>
</tr>
</tbody>
</table>

Submitter Information Verification

Submitter Full Name: Kristin Bigda
Organization: National Fire Protection Assoc
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Sat Oct 26 14:08:24 EDT 2013

Committee Statement

Committee Statement: Annex A material is being added to 53.1.1.1. Annex language provides guidance on the classification of refrigerant safety groups.
Response Message:
A.53.1.1.1
Refrigerant safety groups are established by ANSI/ASHRAE 34, Designation and Safety Classification of Refrigerants. Safety groups are based on the relative safety with respect to toxicity and flammability. The classification groups include a letter designation that indicates the toxicity (A is “lower toxicity” and B is “higher toxicity”) and a number that indicates flammability (1 indicates no flame propagation in air when tested by prescribed methods at specified conditions, 2 is “lower flammability,” and 3 is “higher flammability”).
53.1.2 Definitions and Classification of Refrigerant Groups.
Definitions and classifications of refrigerant groups shall be defined according to the mechanical code and Chapter 3. (For general definitions, see Chapter 3.)

Submitter Information Verification
Submitter Full Name: Kristin Bigda
Organization: National Fire Protection Assoc
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Sat Oct 26 14:12:29 EDT 2013

Committee Statement
Committee Statement: The Code does not contain a definition for "refrigerant groups." Guidance on the classification of refrigerant safety groups can be found in the proposed new Annex language associated with 53.1.1.1.
Response Message:
53.2.3.1.4* Emergency Shutoff Interface.
Where the quantity of a Group A2, B2, A3, or B3 refrigerant, other than ammonia, in an independent circuit would exceed 25 percent of the LFL if released to the surrounding room, either of the following shall apply:

(1) Electrical equipment shall comply with the requirements of NFPA 70 for Class I, Division 2.

(2) The refrigerant vapor detection system required by 53.2.3.1 shall automatically de-energize all electrical power within the space at vapor concentrations at or above 25 percent of the LFL.

Supplemental Information

<table>
<thead>
<tr>
<th>File Name</th>
<th>Description</th>
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<tbody>
<tr>
<td>SR611_A.53.2.3.1.4_102813.docx</td>
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Submitter Information Verification

Submitter Full Name: Kristin Bigda
Organization: National Fire Protection Assoc
Street Address:  
City:  
State:  
Zip:  
Submittal Date: Sat Oct 26 15:37:54 EDT 2013

Committee Statement

Committee Statement: Annex A material is being added. Annex language provides a pointer to annex language regarding the classification of refrigerant safety groups.

Response Message:  

A.53.2.3.1.4
See A.53.1.1.1.
53.2.3.2* Prohibited Sources of Ignition.
Open flames or devices having an exposed surface temperature exceeding 800°F (427°C) shall be prohibited in refrigeration machinery rooms except as follows:

1. Momentary temperature excursions such as electrical contacts in Group A1 and B1 systems shall be permitted.

2. Open flames or devices having an exposed surface temperature exceeding 800°F (427°C) shall be permitted in refrigeration machinery rooms used exclusively for direct-fired absorption equipment.

3. Existing nonconforming installations shall be permitted where approved by the AHJ, where the combustion system is interlocked with the refrigerant detection system to shut off at the permissible exposure limit (PEL).

4. Direct-vented combustion equipment shall be permitted in accordance with the mechanical code.
A.53.2.3.2
See A.53.1.1.1.
Second Revision No. 549-NFPA 1-2013 [ Section No. 53.2.3.3.13.1 ]

53.2.3.3.13.1
A treatment system shall not be required when an approved engineering analysis of plume dispersion demonstrates that the limiting value will not be exceeded at the property line.

Submitter Information Verification

Submitter Full Name: Gregory Harrington  
Organization: National Fire Protection Assoc  
Street Address:  
City:  
State:  
Zip:  
Submittal Date: Fri Aug 23 17:34:50 EDT 2013

Committee Statement

Committee Statement: It's a plume, not a plum.
Response Message:
Second Revision No. 613-NFPA 1-2013 [Section No. 53.3.1.1]

53.3.1.1 General.
Refrigeration systems shall be operated and maintained in a safe and operable condition, free from accumulations of oil, dirt, waste, excessive corrosion, other debris, or leaks, and in accordance with ASHRAE 15 and the mechanical code. Ammonia refrigerator systems shall be maintained in accordance with ANSI/IIAR 7, *Developing Operating Procedures for Closed-Circuit Ammonia Mechanical Refrigerating Systems*.

Submitter Information Verification

Submitter Full Name: Kristin Bigda
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Sat Oct 26 15:49:44 EDT 2013

Committee Statement

Committee Statement: Referenced publication provides important safety information on the maintenance, inspection and operation of ammonia refrigeration systems not currently covered elsewhere and are suitable for adoption and enforcement. A public input was submitted regarding this publication.

Response Message:
60.1.2 Subjects Not Regulated.

Buildings, and portions thereof, containing high hazard contents limited to any of the following shall not be required to comply with this chapter:

1. Flammable and combustible liquids associated with application of flammable finishes and complying with Chapter 43.
2. Flammable and combustible liquids associated with wholesale and retail sales and storage in mercantile occupancies and complying with Chapter 66.
3. Class IIIA and Class IIIB combustible liquid solvents in closed systems employing listed cleaning equipment complying with Chapter 24.
4. Refrigerants and refrigerant oil contained within closed-cycle refrigeration systems complying with Chapter 53 and the building code.
5. Flammable and combustible liquid beverages in liquor stores and distributors without bulk storage.
6. High hazard contents stored or used in farm buildings or similar occupancies for on-premise agricultural use.
7. Corrosive materials in stationary batteries utilized for facility emergency power, uninterrupted power supply, or similar purposes, provided that the batteries are provided with safety venting caps and ventilation is provided in accordance with Chapter 52.
8. Corrosive materials displayed in original packaging in mercantile occupancies and intended for personal or household use or as building materials.
9. Aerosol products in storage or mercantile occupancies and complying with Chapter 61.
10. Flammable and combustible liquids storage tank buildings meeting the requirements of 2.3.4 of NFPA 30.
11. Flammable and combustible liquids storage tank vaults meeting the requirements of 2.2.7 of NFPA 30.
12. Flammable and combustible liquids process buildings meeting the requirements of Section 5.3 of NFPA 30.
13. Installation of fuel gas distribution systems and associated equipment in accordance with Section 11.4 and Chapter 69 as referenced in the building code.
14. Consumer fireworks, 1.4G, in mercantile occupancies complying with Section 65.10 [5000: 34.1.1.2].
For all occupancies not covered by 60.4.2.1.2 through 60.4.2.1.13, the MAQ of hazardous materials per control area shall be as specified in Table 60.4.2.1.1.3.

Table 60.4.2.1.1.3 Maximum Allowable Quantity (MAQ) of Hazardous Materials per Control Area

<table>
<thead>
<tr>
<th>Material</th>
<th>Class</th>
<th>High Hazard Protection Level</th>
<th>Storage</th>
<th>Use — Closed Systems</th>
<th>Use — Open Systems</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Solid Pounds</td>
<td>Liquid Gallons (lb)</td>
<td>Solid Pounds</td>
</tr>
<tr>
<td>Physical Hazard Materials</td>
<td>See note</td>
<td></td>
<td>See note</td>
<td>See note</td>
<td>See note</td>
</tr>
<tr>
<td>Combustible liquid</td>
<td>See note</td>
<td></td>
<td>See note</td>
<td>See note</td>
<td>See note</td>
</tr>
<tr>
<td>Consumer fireworks</td>
<td>See note</td>
<td></td>
<td>See note</td>
<td>See note</td>
<td>See note</td>
</tr>
<tr>
<td>Combustible metals</td>
<td>See note</td>
<td></td>
<td>See note</td>
<td>See note</td>
<td>See note</td>
</tr>
<tr>
<td>Cryogenic fluid [55: Table 6.3.1]</td>
<td>Flammable</td>
<td>2</td>
<td>N/A</td>
<td>45 j,k</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Oxidizing</td>
<td>3</td>
<td>N/A</td>
<td>45 c,d</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Inert</td>
<td>N/A</td>
<td>N/A</td>
<td>NL</td>
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</tr>
<tr>
<td>Explosives</td>
<td>See note</td>
<td></td>
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<td>See note</td>
<td>See note</td>
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<tr>
<td>Flammable gas [55: Table 6.3.1]</td>
<td>Gaseous</td>
<td>2</td>
<td>N/A</td>
<td>1000 c,d</td>
<td>N/A</td>
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<tr>
<td></td>
<td>Liquefied</td>
<td>2</td>
<td>N/A</td>
<td>(150) c,d</td>
<td>N/A</td>
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<td>Liquefied Petroleum (LP)</td>
<td>See note</td>
<td>See note</td>
<td>See note</td>
<td>See note</td>
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<tr>
<td>Flammable liquid</td>
<td>IA</td>
<td>See note</td>
<td>See note</td>
<td>See note</td>
<td>See note</td>
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<tr>
<td></td>
<td>IB and IC</td>
<td></td>
<td>See note</td>
<td>See note</td>
<td>See note</td>
</tr>
<tr>
<td></td>
<td>Combination (IA, IB, IC)</td>
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<td>See note</td>
<td>See note</td>
<td>See note</td>
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<tr>
<td>Flammable solid</td>
<td>N/A</td>
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<td>125 c,d</td>
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<td>Inert gas</td>
<td>Gaseous</td>
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<td>NL</td>
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<tr>
<td>Organic peroxide</td>
<td>UD I</td>
<td>1</td>
<td>1c,i</td>
<td>(1)c,i</td>
<td>1/4 i</td>
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<tr>
<td></td>
<td>I</td>
<td>1</td>
<td>5c,d</td>
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<tr>
<td>Material</td>
<td>Class</td>
<td>High Hazard Protection Level</td>
<td>Storage</td>
<td>Use — Closed Systems</td>
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</tr>
<tr>
<td>----------</td>
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<td></td>
<td></td>
<td></td>
<td>Solid (lb)</td>
<td>Liquid Gallons (lb)</td>
<td>Gas b scf (lb)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Solid (lb)</td>
<td>Liquid Gallons (lb)</td>
<td>Gas b scf (lb)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Solid (lb)</td>
<td>Liquid Gallons (lb)</td>
<td>Gas b scf (lb)</td>
</tr>
</tbody>
</table>

UD: Unclassified detonable

For SI units, 1 lb = 0.454 kg; 1 gal = 3.785 L; 1 scf = 0.0283 Nm³.

N/A: Not applicable. NL: Not limited. NP: Not permitted.

Note: The hazardous material categories and MAQs that are shaded in this table are not regulated by Chapter 60 or NFPA 400 but are provided here for informational purposes. See Chapter 2 for the reference code or standard governing these materials and establishing the MAQs. In accordance with 1.1.1.2 of NFPA 400, materials having multiple hazards that fall within the scope of NFPA 400 shall comply with NFPA 400.

1. Table values in parentheses correspond to the unit name in parentheses at the top of the column. The aggregate quantity in use and storage is not permitted to exceed the quantity listed for storage.

2. Measured at NTP or 70°F (21°C) and 14.7 psia (101.3 kPa).

3. Quantities are permitted to be increased 100 percent where stored or used in approved cabinets, gas cabinets, exhausted enclosures, gas rooms explosives magazines, or safety cans, as appropriate for the material stored, in accordance with this Code. Where footnote d also applies, the increase for both footnote c and footnote d is permitted to be applied accumulatively.

4. Maximum quantities are permitted to be increased 100 percent in buildings equipped throughout with an automatic sprinkler system in accordance with NFPA 13, Standard for the Installation of Sprinkler Systems. Where footnote c also applies, the increase for both footnote c and footnote d is permitted to be applied accumulatively.

5. The permitted quantities are not limited in a building equipped throughout with an automatic sprinkler system in accordance with NFPA 13.

6. A maximum quantity of 200 lb (91 kg) of solid or 20 gal (76 L) of liquid Class 3 oxidizer is permitted where such materials are necessary for maintenance purposes, operation, or sanitation of equipment. Storage containers and the manner of storage are required to be approved.

7. Allowed only where stored or used in gas rooms or approved cabinets, exhausted gas cabinets or exhausted enclosures, as specified in this Code. [5000:Table 34.1.3.1]

8. Conversion. Where quantities are indicated in pounds and when the weight per gallon of the liquid is not provided to the AHJ, a conversion factor of 10 lb/gal (1.2 kg/L) shall be used.

9. Permitted only in buildings equipped throughout with an automatic sprinkler system in accordance with NFPA 13.

10. None allowed in unsprinklered buildings unless stored or used in gas rooms or in approved gas cabinets or exhausted enclosures, as specified in this Code.

11. With pressure-relief devices for stationary or portable containers vented directly outdoors or to an exhaust hood. [55:Table 6.3.1.1]

12. Flammable gases in the fuel tanks of mobile equipment or vehicles are permitted to exceed the MAQ where the equipment is stored and operated in accordance with the fire code this Code. [400:Table 5.2.1.1.3]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address: National Fire Protection Association Report http://submittals.nfpa.org/TerraViewWeb/ContentFetcher?commentPara...
Committee Statement

Committee Statement: Extract update. NOTE: Shade all rows having table entries reading 'See note' as is done in NFPA 400, Table 5.2.1.1.3.
60.4.2.1.2 Assembly Occupancies.
The MAQ of hazardous materials per control area in assembly occupancies shall be as specified in Table 60.4.2.1.2. \[400:5.2.1.2\]

<table>
<thead>
<tr>
<th>Material</th>
<th>Class</th>
<th>Solid</th>
<th>Liquid$^k$</th>
<th>Gas$^a$ (at NTP)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammable and combustible liquid$^{b,c,l}$</td>
<td>See note</td>
<td>See note</td>
<td>See note</td>
<td>See note</td>
</tr>
<tr>
<td>Cryogenic fluid</td>
<td>Flammable</td>
<td>NA</td>
<td>10 gal</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>Oxidizing</td>
<td>NA</td>
<td>10 gal</td>
<td>NA</td>
</tr>
<tr>
<td>Explosives$^{d,e,f,g}$</td>
<td>See note</td>
<td>See note</td>
<td>See note</td>
<td>See note</td>
</tr>
<tr>
<td>Flammable gas$^{c,h}$</td>
<td>Gaseous</td>
<td>NP</td>
<td>NP</td>
<td>NP</td>
</tr>
<tr>
<td></td>
<td>Liquefied</td>
<td>NP</td>
<td>20 lb</td>
<td>NA</td>
</tr>
<tr>
<td>Consumer fireworks</td>
<td>See note</td>
<td>See note</td>
<td>See note</td>
<td>See note</td>
</tr>
<tr>
<td>Flammable solid</td>
<td>NA</td>
<td>5 lb</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Oxidizers</td>
<td>4</td>
<td>NP</td>
<td>NP</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>10 lb$^i$</td>
<td>1 gal$^i$</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>250 lb</td>
<td>25 gal</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>4,000 lb</td>
<td>400 gal</td>
<td>NA</td>
</tr>
<tr>
<td>Oxidizing gas$^h$</td>
<td>Gaseous</td>
<td>NA</td>
<td>NA</td>
<td>NP</td>
</tr>
<tr>
<td></td>
<td>Liquefied</td>
<td>NA</td>
<td>NP</td>
<td>NA</td>
</tr>
<tr>
<td>Organic peroxides</td>
<td>I</td>
<td>NP</td>
<td>NP</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>II</td>
<td>NP</td>
<td>NP</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>III</td>
<td>1,500 lb</td>
<td>1,500 lb</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>IV</td>
<td>100,000 lb</td>
<td>100,000 lb</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>V</td>
<td>NL</td>
<td>NL</td>
<td>NA</td>
</tr>
<tr>
<td>Pyrophoric materials</td>
<td>NA</td>
<td>1 lb</td>
<td>1 lb</td>
<td>NP</td>
</tr>
<tr>
<td>Unstable reactives</td>
<td>4</td>
<td>¼ lb</td>
<td>¼ lb</td>
<td>NP</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>1 lb</td>
<td>1 lb</td>
<td>NP</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>10 lb</td>
<td>10 lb</td>
<td>NP$^h$</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>NL</td>
<td>NL</td>
<td>NP</td>
</tr>
<tr>
<td>Water-reactive</td>
<td>3</td>
<td>1 lb</td>
<td>1 lb</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>10 lb</td>
<td>10 lb</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>NL</td>
<td>NL</td>
<td>NA</td>
</tr>
<tr>
<td>Corrosives</td>
<td>NA</td>
<td>1,000 lb</td>
<td>100 gal</td>
<td>NP</td>
</tr>
<tr>
<td>Highly toxic</td>
<td>NA</td>
<td>3 lb</td>
<td>3 lb</td>
<td>NP$^j$</td>
</tr>
<tr>
<td>Toxic</td>
<td>NA</td>
<td>125 lb</td>
<td>125 lb</td>
<td>NP$^j$</td>
</tr>
</tbody>
</table>

For SI units, 1 lb = 0.454 kg; 1 gal = 3.785 L. NTP: Normal temperature and pressure [measured at 70°F (21°C) and 14.7 psi (101 kPa)]. \(\text{NA} N/A\) : Not applicable. NP: Not permitted. NL: Not limited.

Note: The hazardous material categories and MAQs that are shaded in this table are not regulated by Chapter 60 or NFPA 400 but are provided here for informational purposes. See Chapter 2 of NFPA 400 for the reference code or standard governing these materials and establishing the MAQs. In accordance with 1.1.1.2 of NFPA 400, materials having multiple hazards that fall within the scope of NFPA 400 shall comply with NFPA 400.
Unlimited amounts of gas are permitted to be used for personal medical or emergency medical use.

Storage in excess of 10 gal (38 L) of Class I and Class II liquids combined or 60 gal (227 L) of Class IIIA liquids is permitted where stored in safety cabinets with an aggregate quantity not to exceed 180 gal (681 L).

Fuel in the tank of operating mobile equipment is permitted to exceed the specified quantity where the equipment is operated in accordance with this Code.

The use of explosive materials required by federal, state, or municipal agencies while engaged in normal or emergency performance of duties is not required to be limited. The storage of explosive materials is required to be in accordance with the requirements of NFPA 495, Explosive Materials Code.

The storage and use of explosive materials in medicines and medicinal agents in the forms prescribed by the official United States Pharmacopoeia or the National Formulary are not required to be limited.

The storage and use of propellant-actuated devices or propellant-actuated industrial tools manufactured, imported, or distributed for their intended purposes are required to be limited to 50 lb (23 kg) net explosive weight.

The storage and use of small arms ammunition, and components thereof, are permitted where in accordance with NFPA 495, Explosive Materials Code.

Containers, cylinders, or tanks not exceeding 250 ft³ (7.1 m³) content at normal temperature and pressure (NTP), measured at 70°F (21°C) and 14.7 psi (101 kPa) and used for maintenance purposes, patient care, or operation of equipment shall be permitted.

A maximum quantity of 200 lb (91 kg) of solid or 20 gal (76 L) of liquid Class 3 oxidizer is permitted where such materials are necessary for maintenance purposes, operation, or sanitation of equipment. Storage containers and the manner of storage are required to be approved.

Gas cylinders not exceeding 20 ft³ (0.57 m³) at NTP measured at 70°F (21°C) and 14.7 psi (101 kPa) are permitted in gas cabinets or fume hoods. [5000: Table 34.1.3.2(a)]

Conversion. Where quantities are indicated in pounds and when the weight per gallon of the liquid is not provided to the AHJ, a conversion factor of 10 lb/gal (1.2 kg/L) shall be used.

The quantities of alcohol-based hand rubs classified as Class I and II liquids and Level 1 aerosols are not limited when installed in individual dispensers in accordance with 66.18.6. [400: Table 5.2.1.2]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Wed Jul 17 14:15:06 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
60.4.2.1.3 Educational Occupancies.
The MAQ of hazardous materials per control area in educational occupancies shall be as specified in Table 60.4.2.1.3. [400:5.2.1.3]

Table 60.4.2.1.3 Maximum Allowable Quantities (MAQ) of Hazardous Materials per Control Area in Educational Occupancies

<table>
<thead>
<tr>
<th>Material</th>
<th>Class</th>
<th>Solid</th>
<th>Liquid</th>
<th>Gas (at NTP)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammable and combustible liquid</td>
<td>See note</td>
<td>See note</td>
<td>See note</td>
<td>See note</td>
</tr>
<tr>
<td>Cryogenic fluid</td>
<td>Flammable</td>
<td>NA</td>
<td>N/A</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>Oxidizing</td>
<td>NA</td>
<td>N/A</td>
<td>NA</td>
</tr>
<tr>
<td>Explosives</td>
<td>See note</td>
<td>See note</td>
<td>See note</td>
<td>See note</td>
</tr>
<tr>
<td>Flammable gas</td>
<td>Gaseous</td>
<td>NP</td>
<td>NP</td>
<td>NP</td>
</tr>
<tr>
<td></td>
<td>Liquefied</td>
<td>NP</td>
<td>20 lb</td>
<td>NA</td>
</tr>
<tr>
<td>Consumer fireworks</td>
<td>See note</td>
<td>See note</td>
<td>See note</td>
<td>See note</td>
</tr>
<tr>
<td>Flammable solid</td>
<td>NA</td>
<td>5 lb</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Oxidizers</td>
<td>4</td>
<td>NP</td>
<td>NP</td>
<td>NA N/A</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>10 lb</td>
<td>1 gal</td>
<td>NA N/A</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>250 lb</td>
<td>25 gal</td>
<td>NA N/A</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>4,000 lb</td>
<td>400 gal</td>
<td>NA</td>
</tr>
<tr>
<td>Oxidizing gas</td>
<td>Gaseous</td>
<td>NA</td>
<td>N/A</td>
<td>NP</td>
</tr>
<tr>
<td></td>
<td>Liquefied</td>
<td>NA</td>
<td>N/A</td>
<td>NP</td>
</tr>
<tr>
<td>Organic peroxides</td>
<td>I</td>
<td>NP</td>
<td>NP</td>
<td>NA N/A</td>
</tr>
<tr>
<td></td>
<td>II</td>
<td>NP</td>
<td>NP</td>
<td>NA N/A</td>
</tr>
<tr>
<td></td>
<td>III</td>
<td>1,500 lb</td>
<td>1,500 lb</td>
<td>NA N/A</td>
</tr>
<tr>
<td></td>
<td>IV</td>
<td>100,000 lb</td>
<td>100,000 lb</td>
<td>NA N/A</td>
</tr>
<tr>
<td></td>
<td>V</td>
<td>NL</td>
<td>NL</td>
<td>NA N/A</td>
</tr>
<tr>
<td>Pyrophoric materials</td>
<td>NA N/A</td>
<td>1 lb</td>
<td>1 lb</td>
<td>NP</td>
</tr>
<tr>
<td>Unstable reactives</td>
<td>4</td>
<td>¼ lb</td>
<td>¼ lb</td>
<td>NP</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>1 lb</td>
<td>1 lb</td>
<td>NP</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>10 lb</td>
<td>10 lb</td>
<td>NP</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>NL</td>
<td>NL</td>
<td>NP</td>
</tr>
<tr>
<td>Water-reactive</td>
<td>3</td>
<td>1 lb</td>
<td>1 lb</td>
<td>NA N/A</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>10 lb</td>
<td>10 lb</td>
<td>NA N/A</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>NL</td>
<td>NL</td>
<td>NA N/A</td>
</tr>
<tr>
<td>Corrosives</td>
<td>NA N/A</td>
<td>1,000 lb</td>
<td>100 gal</td>
<td>NP</td>
</tr>
<tr>
<td>Highly toxic</td>
<td>NA N/A</td>
<td>3 lb</td>
<td>3 lb</td>
<td>NP</td>
</tr>
<tr>
<td>Toxic</td>
<td>NA N/A</td>
<td>125 lb</td>
<td>125 lb</td>
<td>NP</td>
</tr>
</tbody>
</table>

For SI units, 1 lb = 0.454 kg; 1 gal = 3.785 L; 1 ft³ = 0.0283 m³.
NTP: Normal temperature and pressure [measured at 70°F (21°C) and 14.7 psi (101 kPa)]. NA N/A: Not applicable. NP: Not permitted. NL: Not limited.

Note: The hazardous material categories and MAQs that are shaded in this table are not regulated by Chapter 60 or NFPA 400 but are provided here for informational purposes. See Chapter 2 of NFPA 400 for the reference code or standard governing these materials and establishing the MAQs. In accordance with 1.1.1.2 of NFPA 400, materials having multiple hazards that fall within the scope of NFPA 400 shall comply with NFPA 400.
Unlimited amounts of gas are permitted to be used for personal medical or emergency medical use.

Storage in excess of 10 gal (38 L) of Class I and Class II liquids combined or 60 gal (227 L) of Class IIIA liquids is permitted where stored in safety cabinets with an aggregate quantity not to exceed 180 gal (681 L).

Fuel in the tank of operating mobile equipment is permitted to exceed the specified quantity where the equipment is operated in accordance with this Code.

The use of explosive materials required by federal, state, or municipal agencies while engaged in normal or emergency performance of duties is not required to be limited. The storage of explosive materials is required to be in accordance with the requirements of NFPA 495, Explosive Materials Code.

The storage and use of explosive materials in medicines and medicinal agents in the forms prescribed by the official United States Pharmacopoeia or the National Formulary are not required to be limited.

The storage and use of propellant-actuated devices or propellant-actuated industrial tools manufactured, imported, or distributed for their intended purposes are required to be limited to 50 lb (23 kg) net explosive weight.

The storage and use of small arms ammunition, and components thereof, are permitted where in accordance with NFPA 495, Explosive Materials Code.

Containers, cylinders or tanks not exceeding 250 ft³ scf (7.1 m³) content at normal temperature and pressure (NTP) measured at 70°F (21°C) and 14.7 psi (101 kPa) and used for maintenance purposes, patient care, or operation of equipment shall be permitted.

A maximum quantity of 200 lb (91 kg) of solid or 20 gal (76 L) of liquid Class 3 oxidizer is permitted where such materials are necessary for maintenance purposes, operation, or sanitation of equipment. Storage containers and the manner of storage shall be approved.

The permitted quantities are not limited in a building protected throughout by automatic sprinkler systems in accordance with NFPA 13, Standard for the Installation of Sprinkler Systems.

Storage in laboratories only; additional 20 lb (9 kg) units are permitted where minimum 20 ft (6.1 m) separation is provided.

Gas cylinders not exceeding 20 ft³ scf (0.57 m³) at NTP measured at 70°F (21°C) and 14.7 psi (101 kPa) are permitted in gas cabinets or fume hoods. [5000: Table 34.1.3.2(d)]

Conversion. Where quantities are indicated in pounds and when the weight per gallon of the liquid is not provided to the AHJ, a conversion factor of 10 lb/gal (1.2 kg/L) shall be used.

The quantities of alcohol-based hand rubs classified as Class I and II liquids and Level 1 aerosols are not limited when installed in individual dispensers in accordance with 66.18.6. [400: Table 5.2.1.3]
Response Message:
60.4.2.1.4 Day-Care Occupancies.
The MAQ of hazardous materials per control area in day-care occupancies shall be as specified in Table 60.4.2.1.4. [400:5.2.1.4]

Table 60.4.2.1.4 Maximum Allowable Quantities (MAQ) of Hazardous Materials per Control Area in Day-Care Occupancies

<table>
<thead>
<tr>
<th>Material</th>
<th>Class</th>
<th>Solid</th>
<th>Liquid</th>
<th>Gas^a (at NTP)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammable and combustible liquid^b,c,l</td>
<td>See note</td>
<td>See note</td>
<td>See note</td>
<td>See note</td>
</tr>
<tr>
<td>Cryogenic fluid</td>
<td>Flammable</td>
<td>NA N/A</td>
<td>10 gal</td>
<td>NA N/A</td>
</tr>
<tr>
<td></td>
<td>Oxidizing</td>
<td>NA N/A</td>
<td>10 gal</td>
<td>NA N/A</td>
</tr>
<tr>
<td>Explosives^d,e,f,g</td>
<td>See note</td>
<td>See note</td>
<td>See note</td>
<td>See note</td>
</tr>
<tr>
<td>Flammable gas^c,h</td>
<td>Gaseous</td>
<td>NP</td>
<td>NP</td>
<td>NP</td>
</tr>
<tr>
<td></td>
<td>Liquefied</td>
<td>NP</td>
<td>20 lb</td>
<td>NA N/A</td>
</tr>
<tr>
<td>Consumer fireworks</td>
<td>See note</td>
<td>See note</td>
<td>See note</td>
<td>See note</td>
</tr>
<tr>
<td>Flammable solid</td>
<td>NA N/A</td>
<td>5 lb</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Oxidizers</td>
<td>4</td>
<td>NP</td>
<td>NP</td>
<td>NA N/A</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>10 lb^i</td>
<td>1 gal^i</td>
<td>NA N/A</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>250 lb</td>
<td>25 gal</td>
<td>NA N/A</td>
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<tr>
<td></td>
<td>1</td>
<td>4,000 lb</td>
<td>400 gal</td>
<td>NA N/A</td>
</tr>
<tr>
<td>Oxidizing gas^h</td>
<td>Gaseous</td>
<td>NA N/A</td>
<td>NA N/A</td>
<td>NP</td>
</tr>
<tr>
<td></td>
<td>Liquefied</td>
<td>NA N/A</td>
<td>NP</td>
<td>NA N/A</td>
</tr>
<tr>
<td>Organic peroxides</td>
<td>I</td>
<td>NP</td>
<td>NP</td>
<td>NA N/A</td>
</tr>
<tr>
<td></td>
<td>II</td>
<td>NP</td>
<td>NP</td>
<td>NA N/A</td>
</tr>
<tr>
<td></td>
<td>III</td>
<td>1,500 lb</td>
<td>1,500 lb</td>
<td>NA N/A</td>
</tr>
<tr>
<td></td>
<td>IV</td>
<td>100,000 lb</td>
<td>100,000 lb</td>
<td>NA N/A</td>
</tr>
<tr>
<td></td>
<td>V</td>
<td>NL</td>
<td>NL</td>
<td>NA N/A</td>
</tr>
<tr>
<td>Pyrophoric materials</td>
<td>NA N/A</td>
<td>1 lb</td>
<td>1 lb</td>
<td>NP</td>
</tr>
<tr>
<td>Unstable reactives</td>
<td>4</td>
<td>¼ lb</td>
<td>¼ lb</td>
<td>NP</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>1 lb</td>
<td>1 lb</td>
<td>NP</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>10 lb</td>
<td>10 lb</td>
<td>NP^h</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>NL</td>
<td>NL</td>
<td>NP</td>
</tr>
<tr>
<td>Water-reactive</td>
<td>3</td>
<td>1 lb</td>
<td>1 lb</td>
<td>NA N/A</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>10 lb</td>
<td>10 lb</td>
<td>NA N/A</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>NL</td>
<td>NL</td>
<td>NA N/A</td>
</tr>
<tr>
<td>Corrosives</td>
<td>NA N/A</td>
<td>1,000 lb</td>
<td>100 gal</td>
<td>NP</td>
</tr>
<tr>
<td>Highly toxic</td>
<td>NA N/A</td>
<td>3 lb</td>
<td>3 lb</td>
<td>NP^i</td>
</tr>
<tr>
<td>Toxic</td>
<td>NA N/A</td>
<td>125 lb</td>
<td>125 lb</td>
<td>NP^j</td>
</tr>
</tbody>
</table>

For SI units, 1 lb = 0.454 kg; 1 gal = 3.785 L.

NTP: Normal temperature and pressure [measured at 70°F (21°C) and 14.7 psi (101 kPa)]. NA N/A: Not applicable. NP: Not permitted. NL: Not limited.

Note: The hazardous material categories and MAQs that are shaded in this table are not regulated by NFPA 400 but are provided here for informational purposes. See Chapter 2 of NFPA 400 for the reference code or standard governing these materials and establishing the MAQs. In accordance with 1.1.1.2 of NFPA 400, materials having multiple hazards that fall within the scope of NFPA 400 shall comply with NFPA 400.
Unlimited amounts of gas are permitted to be used for personal medical or emergency medical use.

Storage in excess of 10 gal (38 L) of Class I and Class II liquids combined or 60 gal (227 L) of Class IIIA liquids is permitted where stored in safety cabinets with an aggregate quantity not to exceed 180 gal (681 L).

Fuel in the tank of operating mobile equipment is permitted to exceed the specified quantity where the equipment is operated in accordance with this Code.

The use of explosive materials required by federal, state, or municipal agencies while engaged in normal or emergency performance of duties is not required to be limited. The storage of explosive materials is required to be in accordance with the requirements of NFPA 495, Explosive Materials Code.

The storage and use of explosive materials in medicines and medicinal agents in the forms prescribed by the official United States Pharmacopeia or the National Formulary are not required to be limited.

The storage and use of propellant-actuated devices or propellant-actuated industrial tools manufactured, imported, or distributed for their intended purposes are required to be limited to 50 lb (23 kg) net explosive weight.

Containers, cylinders, or tanks not exceeding 250 ft³ (7.1 m³) content at normal temperature and pressure (NTP measured at 70°F (21°C) and 14.7 psi (101 kPa)) and used for maintenance purposes, patient care, or operation of equipment shall be permitted.

The permitted quantities are not limited in a building protected throughout by automatic sprinkler systems in accordance with NFPA 13, Standard for the Installation of Sprinkler Systems.

A maximum quantity of 200 lb (91 kg) of solid or 20 gal (76 L) of liquid Class 3 oxidizer is permitted where such materials are necessary for maintenance purposes, operation, or sanitation of equipment. Storage containers and the manner of storage are required to be approved.

Gas cylinders not exceeding 20 ft³ (0.57 m³) at NTP measured at 70°F (21°C) and 14.7 psi (101 kPa) are permitted in gas cabinets or fume hoods. [5000: Table 34.1.3.2(e)]

Conversion. Where quantities are indicated in pounds and when the weight per gallon of the liquid is not provided to the AHJ, a conversion factor of 10 lb/gal (1.2 kg/L) shall be used.

The quantities of alcohol-based hand rubs classified as Class I and Class II liquids and Level 1 aerosols are not limited when installed in individual dispensers in accordance with 66.18.6. [400: Table 5.2.1.4]
60.4.2.1.5 Health Care Occupancies.
The MAQ of hazardous materials per control area in health care occupancies shall be as specified in Table 60.4.2.1.5. [400:5.2.1.5]

Table 60.4.2.1.5 Maximum Allowable Quantities (MAQ) of Hazardous Materials per Control Area in Health Care Occupancies

<table>
<thead>
<tr>
<th>Material</th>
<th>Class</th>
<th>Solid</th>
<th>Liquid^k</th>
<th>Gas^a (at NTP)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammable and combustible liquid^b,c,\d</td>
<td>See note</td>
<td>See note</td>
<td>See note</td>
<td>See note</td>
</tr>
<tr>
<td>Cryogenic fluid</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flammable</td>
<td>NA N/A</td>
<td>10 gal</td>
<td>NA N/A</td>
<td></td>
</tr>
<tr>
<td>Oxidizing</td>
<td>NA N/A</td>
<td>10 gal</td>
<td>NA N/A</td>
<td></td>
</tr>
<tr>
<td>Explosives^d,e,f</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flammable gas^c,g</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gaseous</td>
<td>NA N/A</td>
<td>NA N/A</td>
<td>NP</td>
<td></td>
</tr>
<tr>
<td>Liquefied</td>
<td>NA N/A</td>
<td>20 gal</td>
<td>NA N/A</td>
<td></td>
</tr>
<tr>
<td>Consumer fireworks</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flammable solid</td>
<td>NA N/A</td>
<td>5 lb</td>
<td>NA N/A</td>
<td>NA N/A</td>
</tr>
<tr>
<td>Oxidizers</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>NP</td>
<td>NP</td>
<td>NA N/A</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>10 lb^h</td>
<td>1 gal^h</td>
<td>NA N/A</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>250 lb</td>
<td>25 gal</td>
<td>NA N/A</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>4,000 lb^i</td>
<td>400 gal^i</td>
<td>NA N/A</td>
<td></td>
</tr>
<tr>
<td>Oxidizing gas</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gaseous</td>
<td>NA N/A</td>
<td>NA N/A</td>
<td>Per NFPA 99 NP^h</td>
<td></td>
</tr>
<tr>
<td>Liquefied</td>
<td>NA N/A</td>
<td>15 gal</td>
<td>NA N/A</td>
<td></td>
</tr>
<tr>
<td>Organic peroxides</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>NP</td>
<td>NP</td>
<td>NA N/A</td>
<td></td>
</tr>
<tr>
<td>II</td>
<td>NP</td>
<td>NP</td>
<td>NA N/A</td>
<td></td>
</tr>
<tr>
<td>III</td>
<td>1,500 lb</td>
<td>1,500 lb</td>
<td>NA N/A</td>
<td></td>
</tr>
<tr>
<td>IV</td>
<td>100,000 lb</td>
<td>100,000 lb</td>
<td>NA N/A</td>
<td></td>
</tr>
<tr>
<td>V</td>
<td>NL</td>
<td>NL</td>
<td>NA N/A</td>
<td></td>
</tr>
<tr>
<td>Pyrophoric materials</td>
<td>NA N/A</td>
<td>NP</td>
<td>NP</td>
<td>NP</td>
</tr>
<tr>
<td>Unstable reactives</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>NP</td>
<td>NP</td>
<td>NP</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>NP</td>
<td>NP</td>
<td>NP</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>10 lb^g</td>
<td>10 lb</td>
<td>NP^g</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>NL</td>
<td>NL</td>
<td>NP</td>
<td></td>
</tr>
<tr>
<td>Water-reactive</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>1 lb</td>
<td>1 lb</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>10 lb</td>
<td>10 lb</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>NL</td>
<td>NL</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>Corrosives</td>
<td>NA N/A</td>
<td>1,000 lb</td>
<td>100 gal</td>
<td>NP</td>
</tr>
<tr>
<td>Highly toxic</td>
<td>NA N/A</td>
<td>3 lb</td>
<td>3 lb</td>
<td>NP^j</td>
</tr>
<tr>
<td>Toxic</td>
<td>NA N/A</td>
<td>125 lb</td>
<td>125 lb</td>
<td>NP^j</td>
</tr>
</tbody>
</table>

For SI units, 1 lb = 0.454 kg; 1 gal = 3.785 L.

NTP: Normal temperature and pressure [measured at 70°F (21°C) and 14.7 psi (101 kPa)]. NA N/A: Not applicable. NP: Not permitted. NL: Not limited.

Note: The hazardous material categories and MAQs that are shaded in this table are not regulated by NFPA 400 but are provided here for informational purposes. See Chapter 2 of NFPA 400 for the reference code or standard governing these materials and establishing the MAQs. In accordance with 1.1.1.2 of NFPA 400, materials having multiple hazards that fall within the scope of NFPA 400 shall comply with NFPA 400.
a. Unlimited amounts of gas are permitted to be used for personal medical or emergency medical use.

b. Storage in excess of 10 gal (38 L) of Class I and Class II liquids combined or 60 gal (227 L) of Class IIIA liquids is permitted where stored in safety cabinets with an aggregate quantity not to exceed 180 gal (681 L).

c. Fuel in the tank of operating mobile equipment is permitted to exceed the specified quantity where the equipment is operated in accordance with this Code.

d. The use of explosive materials required by federal, state, or municipal agencies while engaged in normal or emergency performance of duties is not required to be limited. The storage of explosive materials is required to be in accordance with the requirements of NFPA 495, Explosive Materials Code.

e. The storage and use of explosive materials in medicines and medicinal agents in the forms prescribed by the official United States Pharmacopeia or the National Formulary are not required to be limited.

f. The storage and use of propellant-actuated devices or propellant-actuated industrial tools manufactured, imported, or distributed for their intended purposes are required to be limited to 50 lb (23 kg) net explosive weight.

g. Containers, cylinders, or tanks not exceeding 250 ft³ (7.1 m³) content at normal temperature and pressure (NTP) measured at 70°F (21°C) and 14.7 psi (101 kPa) and used for maintenance purposes, patient care, or operation of equipment shall be permitted.

h. A maximum quantity of 200 lb (91 kg) of solid or 20 gal (76 L) of liquid Class 3 oxidizer is permitted where such materials are necessary for maintenance purposes, operation, or sanitation of equipment. Storage containers and the manner of storage are required to be approved.

i. The permitted quantities are not limited in a building protected throughout by automatic sprinkler systems in accordance with NFPA 13, Standard for the Installation of Sprinkler Systems.

j. Gas cylinders not exceeding 20 ft³ (0.57 m³) at NTP measured at 70°F (21°C) and 14.7 psi (101 kPa) are permitted in gas cabinets or fume hoods. {5000: Table 34.1.3.2(f)}

k. Conversion. Where quantities are indicated in pounds and when the weight per gallon of the liquid is not provided to the AHJ, a conversion factor of 10 lb/gal (1.2 kg/L) shall be used.

l. The quantities of alcohol-based hand rubs classified as Class I and Class II liquids and Level 1 aerosols are not limited when installed in individual dispensers in accordance with 66.18.6. [400: Table 5.2.1.5]
60.4.2.1.6 Ambulatory Health Care Occupancies.
The MAQ of hazardous materials per control area in ambulatory health care occupancies shall be as specified in Table 60.4.2.1.6. \([400:5.2.1.6]\)

### Table 60.4.2.1.6 Maximum Allowable Quantities (MAQ) of Hazardous Materials per Control Area in Ambulatory Health Care Occupancies \(^a\)

<table>
<thead>
<tr>
<th>Material</th>
<th>Class</th>
<th>Solid</th>
<th>Liquid(^k)</th>
<th>Gas(^a) (at NTP)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammable and combustible liquid(^b,c,l)</td>
<td>See note</td>
<td>See note</td>
<td>See note</td>
<td>See note</td>
</tr>
<tr>
<td>Cryogenic fluid</td>
<td>Flammable</td>
<td>NA</td>
<td>10 gal</td>
<td>NA N/A</td>
</tr>
<tr>
<td></td>
<td>Oxidizing</td>
<td>NA</td>
<td>10 gal</td>
<td>NA N/A</td>
</tr>
<tr>
<td>Explosives(^d,e,f)</td>
<td>See note</td>
<td>See note</td>
<td>See note</td>
<td>See note</td>
</tr>
<tr>
<td>Flammable gas(^c,g)</td>
<td>Gaseous</td>
<td>NA</td>
<td>NA N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Liquefied</td>
<td>NA N/A</td>
<td>20 lb</td>
<td>N/A</td>
<td>N/A N/A</td>
</tr>
<tr>
<td></td>
<td>Liquefied Petroleum</td>
<td>N/A</td>
<td>N/A</td>
<td>(20)</td>
</tr>
<tr>
<td>Consumer fireworks</td>
<td>See note</td>
<td>See note</td>
<td>See note</td>
<td>See note</td>
</tr>
<tr>
<td>Flammable solid</td>
<td>NA N/A</td>
<td>5 lb</td>
<td>NA N/A</td>
<td>N/A N/A</td>
</tr>
<tr>
<td>Oxidizers</td>
<td>4</td>
<td>NP</td>
<td>NP</td>
<td>NP</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>10 lb</td>
<td>1 gal</td>
<td>NP</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>250 lb</td>
<td>25 gal</td>
<td>NP</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>4,000 lb</td>
<td>400 gal</td>
<td>NP</td>
</tr>
<tr>
<td>Oxidizing gas</td>
<td>Gaseous</td>
<td>NA</td>
<td>NA N/A</td>
<td>Per NFPA 99 NP h</td>
</tr>
<tr>
<td>Liquefied</td>
<td>NA N/A</td>
<td>15 gal</td>
<td>N/A</td>
<td>NA NP h</td>
</tr>
<tr>
<td>Organic peroxides</td>
<td>I</td>
<td>NP</td>
<td>NP</td>
<td>NA N/A</td>
</tr>
<tr>
<td></td>
<td>II</td>
<td>NP</td>
<td>NP</td>
<td>NA N/A</td>
</tr>
<tr>
<td></td>
<td>III</td>
<td>1,500 lb</td>
<td>1,500 lb (25)</td>
<td>NA N/A</td>
</tr>
<tr>
<td></td>
<td>IV</td>
<td>400,000 lb</td>
<td>400,000 lb</td>
<td>NA N/A</td>
</tr>
<tr>
<td></td>
<td>V</td>
<td>NL</td>
<td>NL</td>
<td>NA N/A</td>
</tr>
<tr>
<td>Pyrophoric materials</td>
<td>NA N/A</td>
<td>NP</td>
<td>NP</td>
<td>NP</td>
</tr>
<tr>
<td>Unstable reactives</td>
<td>4</td>
<td>NP</td>
<td>NP</td>
<td>NP</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>NP</td>
<td>NP</td>
<td>NP</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>10 lb</td>
<td>10 lb</td>
<td>NP</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>NL</td>
<td>NL</td>
<td>NP</td>
</tr>
<tr>
<td>Water-reactive</td>
<td>3</td>
<td>1 lb</td>
<td>1 lb (1)</td>
<td>NA N/A</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>10 lb</td>
<td>10 lb</td>
<td>NA N/A</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>NL</td>
<td>NL</td>
<td>NA N/A</td>
</tr>
<tr>
<td>Corrosives</td>
<td>NA N/A</td>
<td>1,000 lb</td>
<td>100 gal</td>
<td>NP</td>
</tr>
<tr>
<td>Highly toxic</td>
<td>NA N/A</td>
<td>3 lb</td>
<td>2 lb (3)</td>
<td>NP</td>
</tr>
<tr>
<td>Toxic</td>
<td>NA N/A</td>
<td>125 lb</td>
<td>425 lb (125)</td>
<td>NP</td>
</tr>
</tbody>
</table>

For SI units, 1 lb = 0.454 kg; 1 gal = 3.785 L.
NTP: Normal temperature and pressure \([70°F (21°C) and 14.7 psi (101 kPa)]\). \(\text{NA N/A}\): Not applicable. NP: Not permitted. NL: Not limited.
Note: The hazardous material categories and MAQs that are shaded in this table are not regulated by NFPA 400 but are provided here for informational purposes. See Chapter 2 of NFPA 400 for the reference code or standard governing these materials and establishing the MAQs. In accordance with 1.1.1.2 of NFPA 400, materials having multiple hazards that fall within the scope of NFPA 400 shall comply with NFPA 400.

a Unlimited amounts of gas are permitted to be used for personal medical or emergency medical use.

b Storage in excess of 10 gal (38 L) of Class I and Class II liquids combined or 60 gal (227 L) of Class IIIA liquids is permitted where stored in safety cabinets with an aggregate quantity not to exceed 180 gal (681 L).

c Fuel in the tank of operating mobile equipment is permitted to exceed the specified quantity where the equipment is operated in accordance with this Code.

d The use of explosive materials required by federal, state, or municipal agencies while engaged in normal or emergency performance of duties is not required to be limited. The storage of explosive materials is required to be in accordance with the requirements of NFPA 495, Explosive Materials Code.

e The storage and use of explosive materials in medicines and medicinal agents in the forms prescribed by the official United States Pharmacopoeia or the National Formulary are not required to be limited.

f The storage and use of propellant-actuated devices or propellant-actuated industrial tools manufactured, imported, or distributed for their intended purposes are required to be limited to 50 lb (23 kg) net explosive weight.

g Containers, cylinders, or tanks not exceeding 250 ft³ scf (7.1 m³) content at normal temperature and pressure (NTP) measured at 70°F (21°C) and 14.7 psi (101 kPa) and used for maintenance purposes, patient care, or operation of equipment shall be permitted.

h A maximum quantity of 200 lb (91 kg) of solid or 20 gal (76 L) of liquid Class 3 oxidizer is permitted where such materials are necessary for maintenance purposes, operation, or sanitation of equipment. Storage containers and the manner of storage are required to be approved.

i The permitted quantities are not limited in a building protected through by automatic sprinkler systems in accordance with NFPA 13, Standard for the Installation of Sprinkler Systems.

j Gas cylinders not exceeding 20 ft³ scf (0.57 m³) at NTP are permitted in gas cabinets or fume hoods measured at 70°F (21°C) and 14.7 psi (101 kPa) are permitted in gas cabinets or fume hoods. [5000: Table 34.1.3.2(b)]

k Conversion. Where quantities are indicated in pounds and when the weight per gallon of the liquid is not provided to the AHJ, a conversion factor of 10 lb/gal (1.2 kg/L) shall be used.

l The quantities of alcohol-based hand rubs classified as Class I and Class II liquids and Level 1 aerosols are not limited when installed in individual dispensers in accordance with 66.18.6. [400: Table 5.2.1.6]
Committee Statement: Extract update.
Response Message:
60.4.2.1.7 Detention and Correctional Occupancies.
The MAQ of hazardous materials per control area in detention and correctional occupancies shall be as specified in Table 60.4.2.1.7. [400:5.2.1.7]

### Table 60.4.2.1.7 Maximum Allowable Quantities (MAQ) of Hazardous Materials per Control Area in Detention and Correctional Occupancies

<table>
<thead>
<tr>
<th>Material</th>
<th>Class</th>
<th>Solid</th>
<th>Liquid</th>
<th>Gas[^a] (at NTP)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammable and combustible liquid[^b,c,l]</td>
<td>See note</td>
<td>See note</td>
<td>See note</td>
<td>See note</td>
</tr>
<tr>
<td>Cryogenic fluid</td>
<td>Flammable</td>
<td>NA N/A</td>
<td>10-gal</td>
<td>NA N/A</td>
</tr>
<tr>
<td></td>
<td>Oxidizing</td>
<td>NA N/A</td>
<td>10-gal</td>
<td>NA N/A</td>
</tr>
<tr>
<td>Explosives[^d,e,f,g]</td>
<td>See note</td>
<td>See note</td>
<td>See note</td>
<td>See note</td>
</tr>
<tr>
<td>Flammable gas[^c,h]</td>
<td>Gaseous</td>
<td>NA N/A</td>
<td>NA N/A</td>
<td>NP</td>
</tr>
<tr>
<td></td>
<td>Liquefied</td>
<td>NA N/A</td>
<td>20-lb N/A</td>
<td>NA (20)</td>
</tr>
<tr>
<td></td>
<td>Liquefied Petroleum</td>
<td>N/A</td>
<td>N/A</td>
<td>(20)</td>
</tr>
<tr>
<td>Consumer fireworks</td>
<td>See note</td>
<td>See note</td>
<td>See note</td>
<td>See note</td>
</tr>
<tr>
<td>Flammable solid</td>
<td>NA N/A</td>
<td>5 lb</td>
<td>NA N/A</td>
<td>NA N/A</td>
</tr>
<tr>
<td>Oxidizers</td>
<td>4</td>
<td>NP</td>
<td>NP</td>
<td>NA N/A</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>10 lb[^i]</td>
<td>1 gal[^i]</td>
<td>NA N/A</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>250 lb</td>
<td>25 gal</td>
<td>NA N/A</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>4,000 lb</td>
<td>400 gal</td>
<td>NA N/A</td>
</tr>
<tr>
<td>Oxidizing gas[^h]</td>
<td>Gaseous</td>
<td>NA N/A</td>
<td>NA N/A</td>
<td>NP</td>
</tr>
<tr>
<td></td>
<td>Liquefied</td>
<td>NA N/A</td>
<td>15-gal N/A</td>
<td>NA N/A</td>
</tr>
<tr>
<td>Organic peroxides</td>
<td>I</td>
<td>NP</td>
<td>NP</td>
<td>NA N/A</td>
</tr>
<tr>
<td></td>
<td>II</td>
<td>NP</td>
<td>NP</td>
<td>NA N/A</td>
</tr>
<tr>
<td></td>
<td>III</td>
<td>1,500 lb</td>
<td>1,500 lb (25)</td>
<td>NA N/A</td>
</tr>
<tr>
<td></td>
<td>IV</td>
<td>100,000 lb</td>
<td>100,000 lb</td>
<td>NA N/A</td>
</tr>
<tr>
<td></td>
<td>V</td>
<td>NL</td>
<td>NL</td>
<td>NA N/A</td>
</tr>
<tr>
<td>Pyrophoric materials</td>
<td>NA N/A</td>
<td>NP 1</td>
<td>NP (1)</td>
<td>NP</td>
</tr>
<tr>
<td>Unstable reactives</td>
<td>4</td>
<td>NP ¹⁄₄</td>
<td>NP (¹⁄₄)</td>
<td>NP</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>NP 1</td>
<td>NP (1)</td>
<td>NP</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>10 lb</td>
<td>10 lb[^h]</td>
<td>NP[^h]</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>NL</td>
<td>NL</td>
<td>NP</td>
</tr>
<tr>
<td>Water-reactive</td>
<td>3</td>
<td>1 lb</td>
<td>1 lb (1)</td>
<td>NA N/A</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>10 lb</td>
<td>40 lb (10)</td>
<td>NA N/A</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>NL</td>
<td>NL</td>
<td>NA N/A</td>
</tr>
<tr>
<td>Corrosives</td>
<td>NA N/A</td>
<td>1,000 lb</td>
<td>100 gal</td>
<td>NP</td>
</tr>
<tr>
<td>Highly toxic</td>
<td>NA N/A</td>
<td>3 lb</td>
<td>3 lb</td>
<td>NP[^j]</td>
</tr>
<tr>
<td>Toxic</td>
<td>NA N/A</td>
<td>125 lb</td>
<td>125 lb</td>
<td>NP[^j]</td>
</tr>
</tbody>
</table>

For SI units, 1 lb = 0.454 kg; 1 gal = 3.785 L.

NTP: Normal temperature and pressure [measured at 70°F (21°C) and 14.7 psi (101 kPa)]. NA N/A: Not applicable. NP: Not permitted. NL: Not limited.

Note: The hazardous material categories and MAQs that are shaded in this table are not regulated by...
Chapter 60 or NFPA 400 but are provided here for informational purposes. See Chapter 2 of NFPA 400 for the reference code or standard governing these materials and establishing the MAQs. In accordance with 1.1.1.2 of NFPA 400, materials having multiple hazards that fall within the scope of NFPA 400 shall comply with NFPA 400.

a Unlimited amounts of gas are permitted to be used for personal medical or emergency medical use.

b Storage in excess of 10 gal (38 L) of Class I and Class II liquids combined or 60 gal (227 L) of Class IIIA liquids is permitted where stored in safety cabinets with an aggregate quantity not to exceed 180 gal (681 L).

c Fuel in the tank of operating mobile equipment is permitted to exceed the specified quantity where the equipment is operated in accordance with this Code.

d The use of explosive materials required by federal, state, or municipal agencies while engaged in normal or emergency performance of duties is not required to be limited. The storage of explosive materials is required to be in accordance with the requirements of NFPA 495, Explosive Materials Code.

e The storage and use of explosive materials in medicines and medicinal agents in the forms prescribed by the official United States Pharmacopeia or the National Formulary are not required to be limited.

f The storage and use of propellant-actuated devices or propellant-actuated industrial tools manufactured, imported, or distributed for their intended purposes are required to be limited to 50 lb (23 kg) net explosive weight.

g The storage and use of small arms ammunition, and components thereof, are permitted where in accordance with NFPA 495, Explosive Materials Code.

h Containers, cylinders, or tanks not exceeding 250 ft³ scf (7.1 m³) content at normal temperature and pressure (NTP) measured at 70°F (21°C) and 14.7 psi (101 kPa) and used for maintenance purposes, patient care, or operation of equipment shall be permitted.

i A maximum quantity of 200 lb (91 kg) of solid or 20 gal (76 L) of liquid Class 3 oxidizer is permitted where such materials are necessary for maintenance purposes, operation, or sanitation of equipment. Storage containers and the manner of storage are required to be approved.

j Gas cylinders not exceeding 20 ft³ scf (0.57 m³) at NTP measured at 70°F (21°C) and 14.7 psi (101 kPa) are permitted in gas cabinets or fume hoods. [Table 34.1.3.2(g)]

k Conversion. Where quantities are indicated in pounds and when the weight per gallon of the liquid is not provided to the AHJ, a conversion factor of 10 lb/gal (1.2 kg/L) shall be used.

l The quantities of alcohol-based hand rubs classified as Class I and Class II liquids and Level 1 aerosols are not limited when installed in individual dispensers in accordance with 66.18.6. [Table 5.2.1.7]
60.4.2.1.8 Residential Occupancies.
The MAQ of hazardous materials per control area in residential occupancies, including lodging and rooming houses, hotels, dormitories, apartments, and residential board and care facilities, shall be as specified in Table 60.4.2.1.8.  

Table 60.4.2.1.8 Maximum Allowable Quantities of Hazardous Materials per Control Area in Residential Occupancies Consisting of Lodging and Rooming Houses, Hotels, Dormitories, Apartments, and Residential Board and Care Facilities

<table>
<thead>
<tr>
<th>Material</th>
<th>Class</th>
<th>Solid</th>
<th>Liquid</th>
<th>Gas (^a) (at NTP)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammable and combustible liquid</td>
<td>See note</td>
<td>See note</td>
<td>See note</td>
<td>See note</td>
</tr>
<tr>
<td>Cryogenic fluid</td>
<td>Flammable</td>
<td>NA N/A</td>
<td>10-gal</td>
<td>NA N/A</td>
</tr>
<tr>
<td></td>
<td>Oxidizing</td>
<td>NA N/A</td>
<td>10 gal</td>
<td>NA N/A</td>
</tr>
<tr>
<td>Explosives (^d),(^e),(^f),(^g)</td>
<td>See note</td>
<td>See note</td>
<td>See note</td>
<td>See note</td>
</tr>
<tr>
<td>Flammable gas (^c),(^h)</td>
<td>Gaseous</td>
<td>NA N/A</td>
<td>NA N/A</td>
<td>NP</td>
</tr>
<tr>
<td></td>
<td>Liquefied</td>
<td>NA N/A</td>
<td>N/A 20 lb</td>
<td>NA (20)</td>
</tr>
<tr>
<td>Consumer fireworks</td>
<td>See note</td>
<td>See note</td>
<td>See note</td>
<td>See note</td>
</tr>
<tr>
<td>Flammable solid</td>
<td>NA N/A</td>
<td>5 lb</td>
<td>NA N/A</td>
<td>NA N/A</td>
</tr>
<tr>
<td>Oxidizers</td>
<td>4</td>
<td>NP</td>
<td>NP</td>
<td>NA N/A</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>10 lb</td>
<td>1 gal</td>
<td>NA N/A</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>250 lb</td>
<td>25 gal</td>
<td>NA N/A</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>4,000 lb</td>
<td>4000 gal</td>
<td>NA N/A</td>
</tr>
<tr>
<td>Oxidizing gas (^h)</td>
<td>Gaseous</td>
<td>NA N/A</td>
<td>NA N/A</td>
<td>NP</td>
</tr>
<tr>
<td></td>
<td>Liquefied</td>
<td>NA N/A</td>
<td>15-gal</td>
<td>NA N/A</td>
</tr>
<tr>
<td>Organic peroxides</td>
<td>I</td>
<td>NP</td>
<td>NP</td>
<td>NA N/A</td>
</tr>
<tr>
<td></td>
<td>II</td>
<td>NP</td>
<td>NP</td>
<td>NA N/A</td>
</tr>
<tr>
<td></td>
<td>III</td>
<td>1,500 lb</td>
<td>1,500 lb (25)</td>
<td>NA N/A</td>
</tr>
<tr>
<td></td>
<td>IV</td>
<td>100,000 lb</td>
<td>NL 100,000 lb</td>
<td>NA N/A</td>
</tr>
<tr>
<td></td>
<td>V</td>
<td>NL</td>
<td>NL</td>
<td>NA N/A</td>
</tr>
<tr>
<td>Pyrophoric materials</td>
<td>NA N/A</td>
<td>1-lb</td>
<td>1-lb (1)</td>
<td>NP</td>
</tr>
<tr>
<td>Unstable reactives</td>
<td>4</td>
<td>¼ lb</td>
<td>(¼ lb)</td>
<td>NP</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>1 lb</td>
<td>4-lb (1)</td>
<td>NP</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>10 lb</td>
<td>(10) 10 lb</td>
<td>Np(^h)</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>NL</td>
<td>NL</td>
<td>NP</td>
</tr>
<tr>
<td>Water-reactive</td>
<td>3</td>
<td>1 lb</td>
<td>1-lb (1)</td>
<td>NA N/A</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>10 lb</td>
<td>(10) 10 lb</td>
<td>NA N/A</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>NL</td>
<td>NL</td>
<td>NA N/A</td>
</tr>
<tr>
<td>Corrosives</td>
<td>NA N/A</td>
<td>1000 lb</td>
<td>100 gal</td>
<td>NP</td>
</tr>
<tr>
<td>Highly toxic</td>
<td>NA N/A</td>
<td>3 lb</td>
<td>(3) 3 lb</td>
<td>Np(^k)</td>
</tr>
<tr>
<td>Toxic</td>
<td>NA N/A</td>
<td>125 lb</td>
<td>(125) 125 lb</td>
<td>Np(^k)</td>
</tr>
</tbody>
</table>

For SI units, 1 lb = 0.454 kg; 1 gal = 3.785 L.

NTP: Normal temperature and pressure [measured at 70°F (21°C) and 14.7 psi (101 kPa)]. NA N/A: Not Available.
Note: The hazardous material categories and MAQs that are shaded in this table are not regulated by Chapter 60 or NFPA 400 but are provided here for informational purposes. See Chapter 2 of NFPA 400 for the reference code or standard governing these materials and establishing the MAQs. In accordance with 1.1.1.2 of NFPA 400, materials having multiple hazards that fall within the scope of NFPA 400 shall comply with NFPA 400.

a. Unlimited amounts of gas are permitted to be used for personal medical or emergency medical use.

b. Storage in excess of 10 gal (38 L) of Class I and Class II liquids combined or 60 gal (227 L) of Class IIIA liquids are permitted where stored in safety cabinets with an aggregate quantity not to exceed 180 gal (681 L).

c. Fuel in the tank of operating mobile equipment is permitted to exceed the specified quantity where the equipment is operated in accordance with this Code.

d. The use of explosive materials required by federal, state, or municipal agencies while engaged in normal or emergency performance of duties is not required to be limited. The storage of explosive materials is required to be in accordance with the requirements of NFPA 495, *Explosive Materials Code*.

e. The storage and use of explosive materials in medicines and medicinal agents in the forms prescribed by the official United States *Pharmacopoeia* or the National Formulary are not required to be limited.

f. The storage and use of propellant-actuated devices or propellant-actuated industrial tools manufactured, imported, or distributed for their intended purposes are required to be limited to 50 lb (23 kg) net explosive weight.

g. The storage and use of small arms ammunition, and components thereof, are permitted where in accordance with NFPA 495, *Explosive Materials Code*.

h. Containers, cylinders, or tanks not exceeding 250 ft³ (7.1 m³) content at normal temperature and pressure (NTP) measured at 70°F (21°C) and 14.7 psi (101 kPa) and used for maintenance purposes, patient care, or operation of equipment shall be permitted.

i. A maximum quantity of 200 lb (91 kg) of solid or 20 gal (76 L) of liquid Class 3 oxidizer is permitted where such materials are necessary for maintenance purposes, operation, or sanitation of equipment. Storage containers and the manner of storage are required to be approved.

j. Storage containers are not permitted to exceed 0.325 ft³ (0.0092 m³) capacity.

k. Gas cylinders not exceeding 20 ft³ (0.57 m³) at NTP measured at 70°F (21°C) and 14.7 psi (101 kPa) are permitted in gas cabinets or fume hoods. [5000: Table 34.1.3.2(h)]

l. Conversion. Where quantities are indicated in pounds and when the weight per gallon of the liquid is not provided to the AHJ, a conversion factor of 10 lb/gal (1.2 kg/L) shall be used.

m. The quantities of alcohol-based hand rubs classified as Class I and Class II liquids and Level 1 aerosols are not limited when installed in individual dispensers in accordance with 66.18.6. [400: Table 5.2.1.8]
<table>
<thead>
<tr>
<th>Submittal Date:</th>
<th>Thu Jul 18 10:44:04 EDT 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Committee Statement</strong></td>
<td>Extract update. NOTE: Shade rows having entries reading 'See note'.</td>
</tr>
</tbody>
</table>
| **Response Message:** | }
The MAQ of hazardous materials per control area in business occupancies, other than laboratories, shall be as specified in Table 60.4.2.1.10.1. [400:5.2.1.10.1]

Table 60.4.2.1.10.1 Maximum Allowable Quantities (MAQ) of Hazardous Materials per Control Area in Business Occupancies

<table>
<thead>
<tr>
<th>Material</th>
<th>Class</th>
<th>Solid</th>
<th>Liquid$^{d}$</th>
<th>Gas$^{a,i}$ (at NTP)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammable and combustible liquid$^{b,c,k}$</td>
<td>See note</td>
<td>See note</td>
<td>See note</td>
<td>See note</td>
</tr>
<tr>
<td>Cryogenic fluid</td>
<td>Flammable</td>
<td>NA N/A</td>
<td>10 gal</td>
<td>NA N/A</td>
</tr>
<tr>
<td></td>
<td>Oxidizing</td>
<td>NA N/A</td>
<td>10 gal</td>
<td>NA N/A</td>
</tr>
<tr>
<td>Explosives$^{d,e,f,g}$</td>
<td>See note</td>
<td>See note</td>
<td>See note</td>
<td>See note</td>
</tr>
<tr>
<td>Flammable gas$^{c}$</td>
<td>Gaseous</td>
<td>NA N/A</td>
<td>NA N/A</td>
<td>1000 ft$^3$</td>
</tr>
<tr>
<td></td>
<td>Liquefied</td>
<td>NA N/A</td>
<td>20 lb N/A</td>
<td>NA (20)</td>
</tr>
<tr>
<td>Liquefied Petroleum</td>
<td>N/A</td>
<td>N/A</td>
<td>(20)</td>
<td></td>
</tr>
<tr>
<td>Consumer fireworks</td>
<td>See note</td>
<td>See note</td>
<td>See note</td>
<td>See note</td>
</tr>
<tr>
<td>Flammable solid</td>
<td>NA N/A</td>
<td>5 lb</td>
<td>NA N/A</td>
<td>NA N/A</td>
</tr>
<tr>
<td>Oxidizers</td>
<td>4</td>
<td>NP</td>
<td>NP</td>
<td>NP</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>10 lb$^h$</td>
<td>1 gal$^h$</td>
<td>NP</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>250 lb</td>
<td>25 gal</td>
<td>NP</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>4,000 lb</td>
<td>4000 gal</td>
<td>NP</td>
</tr>
<tr>
<td>Oxidizing gas</td>
<td>Gaseous</td>
<td>NA N/A</td>
<td>NA N/A</td>
<td>1500 ft$^3$</td>
</tr>
<tr>
<td></td>
<td>Liquefied</td>
<td>NA N/A</td>
<td>15 gal</td>
<td>NA N/A</td>
</tr>
<tr>
<td>Organic peroxides</td>
<td>I</td>
<td>NP</td>
<td>NP</td>
<td>NA N/A</td>
</tr>
<tr>
<td></td>
<td>II</td>
<td>NP</td>
<td>NP</td>
<td>NA N/A</td>
</tr>
<tr>
<td></td>
<td>III</td>
<td>1500 lb</td>
<td>1500 lb</td>
<td>NA N/A</td>
</tr>
<tr>
<td></td>
<td>IV</td>
<td>100,000 lb</td>
<td>100,000 lb</td>
<td>NA N/A</td>
</tr>
<tr>
<td></td>
<td>V</td>
<td>NL</td>
<td>NL</td>
<td>NA N/A</td>
</tr>
<tr>
<td>Pyrophoric materials</td>
<td>NA N/A</td>
<td>1 lb</td>
<td>1 lb (1)</td>
<td>10 ft$^3$</td>
</tr>
<tr>
<td>Unstable reactives</td>
<td>4</td>
<td>¼ lb</td>
<td>(½ lb$^{1/2}$)</td>
<td>2 ft$^3$</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>1 lb</td>
<td>1 lb (1)</td>
<td>10 ft$^3$</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>10 lb</td>
<td>10 lb (10)</td>
<td>750 ft$^3$</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>NL</td>
<td>NL</td>
<td>NL</td>
</tr>
<tr>
<td>Water-reactive</td>
<td>3</td>
<td>1 lb</td>
<td>1 lb (1)</td>
<td>NA N/A</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>10 lb</td>
<td>10 lb (10)</td>
<td>NA N/A</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>NL</td>
<td>NL</td>
<td>NA N/A</td>
</tr>
<tr>
<td>Corrosives</td>
<td>NA N/A</td>
<td>1000 lb</td>
<td>(100 gal)</td>
<td>810 ft$^3$</td>
</tr>
<tr>
<td>Highly toxic$^{i}$</td>
<td>NA N/A</td>
<td>3 lb</td>
<td>3 lb (3)</td>
<td>20 ft$^3$</td>
</tr>
<tr>
<td>Toxic$^{i}$</td>
<td>NA N/A</td>
<td>125 lb</td>
<td>(125 lb)</td>
<td>810 ft$^3$</td>
</tr>
</tbody>
</table>

For SI units, 1 lb = 0.454 kg; 1 gal = 3.785 L; 1 ft$^3$ scf = 0.0283 m$^3$.

NTP: Normal temperature and pressure [measured at 70°F (21°C) and 14.7 psi (101 kPa)], NA N/A: Not applicable. NP: Not permitted. NL: Not limited.

Note: The hazardous material categories and MAQs that are shaded in this table are not regulated by NFPA 400 but are provided here for informational purposes. See Chapter 2 of NFPA 400 for the reference code or standard governing these materials and establishing the MAQs. In accordance with 1.1.1.2 of National Fire Protection Association Report http://submittals.nfpa.org/TerraViewWeb/ContentFetcher?commentPara...
NFPA 400, materials having multiple hazards that fall within the scope of NFPA 400 shall comply with NFPA 400.

a Unlimited amounts of gas are permitted to be used for personal medical or emergency medical use.

b Storage in excess of 10 gal (38 L) of Class I and Class II liquids combined or 60 gal (227 L) of Class IIIA liquids is permitted where stored in safety cabinets with an aggregate quantity not to exceed 180 gal (681 L).

c Fuel in the tank of operating mobile equipment is permitted to exceed the specified quantity where the equipment is operated in accordance with this Code.

d The use of explosive materials required by federal, state, or municipal agencies while engaged in normal or emergency performance of duties is not required to be limited. The storage of explosive materials is required to be in accordance with the requirements of NFPA 495, Explosive Materials Code.

e The storage and use of explosive materials in medicines and medicinal agents in the forms prescribed by the official United States Pharmacopeia or the National Formulary are not required to be limited.

f The storage and use of propellant-actuated devices or propellant-actuated industrial tools manufactured, imported, or distributed for their intended purposes are required to be limited to 50 lb (23 kg) net explosive weight.

g The storage and use of small arms ammunition, and components thereof, are permitted where in accordance with NFPA 495, Explosive Materials Code.

h A maximum quantity of 200 lb (91 kg) of solid or 20 gal (76 L) of liquid Class 3 oxidizer is permitted where such materials are necessary for maintenance purposes, operation, or sanitation of equipment. Storage containers and the manner of storage are required to be approved.

i Gas cylinders not exceeding 20 ft\(^3\) scf (0.57 m\(^3\)) at NTP measured at 70°F (21°C) and 14.7 psi (101 kPa) are permitted in gas cabinets or fume hoods. [5000: Table 34.1.3.2(e)]

j Conversion. Where quantities are indicated in pounds and when the weight per gallon of the liquid is not provided to the AHJ, a conversion factor of 10 lb/gal (1.2 kg/L) shall be used.

k The quantities of alcohol-based hand rubs classified as Class I and Class II liquids and Level 1 aerosols are not limited when installed in individual dispensers in accordance with 66.18.6. [400: Table 5.2.1.10.1]
The MAQ of hazardous materials per control area in laboratories classified as business occupancies shall be as specified in Table 60.4.2.1.1.3. [400:5.2.1.10.2]
60.4.2.1.11 Industrial Occupancies.
The MAQ of hazardous materials per control area in industrial occupancies shall be as specified in Table 60.4.2.1.1.3, with increased quantities permitted where storage areas comply with 60.4.2.1.13.

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Thu Jul 18 11:23:50 EDT 2013

Committee Statement

Committee Statement: Editorial.
Response Message:
60.4.2.2.1 Number of Control Areas.
The maximum number of control areas within a building shall be in accordance with Table 60.4.2.2.1.

Table 60.4.2.2.1 Design and Number of Control Areas

<table>
<thead>
<tr>
<th>Floor Level</th>
<th>Maximum Allowable Quantity per Control Area (%)</th>
<th>Number of Control Areas per Floor</th>
<th>Fire Resistance Rating for Fire Barriers† (hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Above grade plane</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt;9</td>
<td>5.0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>7–9</td>
<td>5.0</td>
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<td>Lower than 2</td>
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NP: Not permitted. N/A: Not applicable.

*Percentages represent the MAQ per control area shown in Table 60.4.2.1.1.3, with all the increases permitted in the footnotes of that table.

†Fire barriers are required to include floors and walls, as necessary, to provide a complete separation from other control areas. [400: Table 5.2.2.1]
60.4.4.1.1.1
Hazardous materials shall be permitted to be stored or used in outdoor control areas in accordance with 60.4.5.1.2 and 60.4.5.1.3. [400:5.4.1.1.1]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Fri Aug 23 10:57:47 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
60.4.4.1.2 Maximum Allowable Quantity per Outdoor Control Area.
Table 60.4.4.1.2 Maximum Allowable Quantities of Hazardous Materials per Outdoor Control Area

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<td>Liquid Gallons (lb)</td>
<td>Gas scf (lb)</td>
<td>Solid Pounds</td>
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<td>Liquid Gallons (lb)</td>
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<td>--------------</td>
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<td></td>
</tr>
</tbody>
</table>

For SI units, 1 lb = 0.454 kg; 1 gal = 3.785 L; 1 scf = 0.0283 Nm$^3$.

N/A: Not applicable. NL: Not limited.

Notes:
1. Table values in parentheses correspond to the unit name in parentheses at the top of the column.
2. For gallons of liquids, divide the amount in pounds by 10.
3. The aggregate quantities in storage and use shall not exceed the quantity listed for storage.
4. The aggregate quantity of nonflammable solid and nonflammable or noncombustible liquid hazardous materials allowed in outdoor storage per single property under the same ownership or control used for retail or wholesale sales is permitted to exceed the MAQ when such storage is in accordance with 60.4.2.1.13.3.

*Permitted only where stored or used in approved exhausted gas cabinets, exhausted enclosures, or fume hoods. [400: Table 5.4.1.2]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Thu Jul 18 11:40:24 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
60.5.2
Where permitted by Chapters 11 through 43 of NFPA 101, Life Safety Code, alcohol-based hand-rub dispensers shall be permitted provided they meet all of the following criteria:

(1) The maximum individual dispenser fluid capacity shall be as follows:
   (a) 0.32 gal (1.2 L) for dispensers in corridors and areas open to corridors
   (b) 0.53 gal (2.0 L) for dispensers in rooms or suites of rooms separated from corridors

(2) Where aerosol containers are used, the maximum capacity of the aerosol dispenser shall be 18 oz. (0.51 kg) and shall be limited to Level 1 aerosols as defined in NFPA 30B, Code for the Manufacture and Storage of Aerosol Products.

(3) Dispensers shall be separated from each other by horizontal spacing of not less than 48 in. (1220 mm).

(4) Not more than an aggregate 10 gal (37.8 L) of alcohol-based hand-rub solution or 1135 oz (32.2 kg) of Level 1 aerosols, or a combination of liquids and Level 1 aerosols not to exceed, in total, the equivalent of 10 gal (37.8 L) or 1135 oz (32.2 kg,) shall be in use outside of a storage cabinet in a single smoke compartment or fire compartment or story, whichever is less in area. One dispenser complying with 60.5.2 (1) per room and located in that room shall not be included in the aggregated quantity.

(5) Storage of quantities greater than 5 gal (18.9 L) in a single smoke compartment or fire compartment or story, whichever is less in area, shall meet the requirements of NFPA 30, Flammable and Combustible Liquids Code.

(6) Dispensers shall not be installed in the following locations:
   (a) Above an ignition source for a horizontal distance of 1 in. (25 mm) to each side of the ignition source
   (b) To the side of an ignition source within a 1 in. (25 mm) horizontal distance from the ignition source
   (c) Beneath an ignition source within a 1 in. (25 mm) vertical distance from the ignition source

(7) Dispensers installed directly over carpeted floors shall be permitted only in sprinklered areas of the building.

(8) The alcohol-based hand-rub solution shall not exceed 95 percent alcohol content by volume.

(9) Operation of the dispenser shall comply with the following criteria:
   (a) The dispenser shall not release its contents except when the dispenser is activated, either manually or automatically by touch-free activation.
   (b) Any activation of the dispenser shall only occur when an object is placed within 4 in. (100 mm) of the sensing device.
   (c) An object placed within the activation zone and left in place shall not cause more than one activation.
   (d) The dispenser shall not dispense more solution than the amount required for hand hygiene consistent with label instructions.
   (e) The dispenser shall be designed, constructed, and operated in a manner that ensures accidental or malicious activation of the dispensing device is minimized.
   (f) The dispenser shall be tested in accordance with the manufacturer’s care and use instructions each time a new refill is installed.

[101 : 8.7.3.3]

Submitter Information Verification
Submitter Full Name: Kristin Bigda
Organization: National Fire Protection Assoc
### Committee Statement

<table>
<thead>
<tr>
<th>Committee Statement</th>
<th>The extracted requirements from NFPA 101 provide guidance on alcohol-based hand-rub dispensers that was not provided in previous editions of the Code.</th>
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Page 451 of 866
61.1.3* Classification of Aerosol Products in Metal Containers of Capacity Less Than or Equal to Not More Than 33.8 fl oz (1000 ml) and in Plastic or Glass Containers of Capacity Less Than or Equal to Not More Than 4 fl oz (118 ml).

See Annex E of NFPA 30B. [30B:1.7]

61.1.3.1 Aerosol products shall be classified by means of the calculation of their chemical or theoretical heats of combustion and shall be designated Level 1, Level 2, or Level 3 in accordance with 61.1.3.2 through 61.1.3.4 and Table 61.1.3.1. [30B:1.7.1]

Table 61.1.3.1 Aerosol Product Classification

<table>
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<tr>
<th>If the chemical heat of combustion is</th>
<th>Aerosol Classification Level</th>
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<tr>
<td>&gt; 20 kJ/g (8,600 Btu/lb)</td>
<td>1</td>
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<tr>
<td>20 kJ/g (8,600 Btu/lb)</td>
<td>2</td>
</tr>
<tr>
<td>30 kJ/g (13,000 Btu/lb)</td>
<td>3</td>
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[30B:Table 1.7.1]

61.1.3.1.1 In lieu of classification by means of the chemical heats of combustion, aerosol products shall be permitted to be classified by means of data obtained from properly conducted full-scale fire tests that utilize a 12-pallet test array. [30B:1.7.1.1]

Exception: This shall not apply to aerosol cooking spray products. [See 61.1.3.5.] [30B: 1.7.1.1]

61.1.3.2 Level 1 Aerosol Products.

Level 1 aerosol products shall be defined as those products with a total chemical heat of combustion that is less than or equal to 20 kJ/g (8600 Btu/lb). [30B:1.7.2]

61.1.3.3 Level 2 Aerosol Products.

Level 2 aerosol products shall be defined as those products with a total chemical heat of combustion that is greater than 20 kJ/g (8600 Btu/lb), but less than or equal to 30 kJ/g (13,000 Btu/lb). [30B:1.7.3]

61.1.3.4 Level 3 Aerosol Products.

Level 3 aerosol products shall be defined as those products with a total chemical heat of combustion that is greater than 30 kJ/g (13,000 Btu/lb). [30B:1.7.4]

61.1.3.5 Aerosol Cooking Spray Products.

Aerosol cooking spray products shall be defined as those aerosol products designed to deliver a vegetable oil or a solid or nonflammable liquid to reduce sticking on cooking and baking surfaces or to be applied to food or both. These products have a chemical heat of combustion that is greater than 20 kJ/g (8600 Btu/lb) and contain not more than 18 percent by weight of flammable propellant. [30B: 1.7.5]

61.1.3.5.1 If the aerosol cooking spray product has a chemical heat of combustion that does not exceed 20 kJ/g (8600 Btu/lb), it shall be considered a Level 1 aerosol product. [30B: 1.7.5.1]

61.1.3.5.2 If the aerosol cooking spray product contains more than 18 percent by weight of flammable propellant, it shall be classified in accordance with its chemical heat of combustion, as set forth in Table 61.1.3.1. [30B: 1.7.5.2]
### Supplemental Information

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<th>File Name</th>
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### Submitter Information Verification

- **Submitter Full Name:** Gregory Harrington  
- **Organization:** National Fire Protection Assoc  
- **Street Address:**  
- **City:**  
- **State:**  
- **Zip:**  
- **Submittal Date:** Tue Oct 22 07:38:08 EDT 2013

### Committee Statement

- **Committee Statement:** Extract update. New Annex A text provided in attachment.
- **Response Message:**

---

**61.1.3.6 Aerosol Products in Plastic Containers Larger Than 4 fl oz (118 ml).**  
Storage and display of aerosol products in plastic containers larger than 4 fl oz (118 ml) are covered in Section 6.4 of NFPA 30B. [30B: 1.8]
A.61.1.4.1(3)

Fire testing with alcohol and water at this percentage in plastic bottles has been successful. Small-scale burn tests of aerosol products in plastic containers have shown the aerosol with a nonflammable propellant to behave the same as the aerosol with no propellant. [30B: A.1.8.1(3)]

A.61.1.4.1(4)

A fire test with a formula of this type using liquefied petroleum gas was successful. An emulsion, in an aerosol product, would be a mixture of two or more liquids in which one is present as droplets, of microscopic or ultramicroscopic size, distributed throughout the other. Emulsions are formed from the component liquids either spontaneously or, more often, by mechanical means, such as agitation, provided that the liquids that are mixed have no (or a very limited) mutual solubility. Emulsions are stabilized by agents that form films at the surface of the droplets (e.g., soap molecules) or that impart to them a mechanical stability (e.g., colloidal carbon or bentonite). Colloidal distributions or suspension of one or more liquid(s) with another will have a shelf life that varies with the efficiency of the recipe used. [30B: A.1.8.1(4)]
Second Revision No. 587-NFPA 1-2013 [Section No. 61.3.1.1]

61.3.1.1
The protection criteria in Section 61.3 shall apply to the following:

1. Level 1 aerosol products in metal containers not more than 33.8 fl oz (1000 ml) capacity, in accordance with 61.3.2

2. Level 2 and Level 3 aerosol products in metal containers up to 1000 ml (Aerosol cooking spray products in metal containers 33.8 fl oz) not more than 33.8 fl oz (1000 ml) capacity, in accordance with 61.3.3

3. Aerosol products in glass and plastic containers up to 118 ml (4 fl oz) capacity, in accordance with 61.3.3 Level 2 and Level 3 aerosol products in metal containers not more than 33.8 fl oz (1000 ml) capacity, in accordance with Section 6.4 of NFPA 30B

4. Limited-quantity storage of aerosol products in plastic containers greater than 118 ml (4 fl oz) capacity, in accordance with 6.3.3 of NFPA 30B Aerosol products in glass and plastic containers not more than 4 fl oz (118 ml) capacity, in accordance with Section 6.4

5. Aerosol products in plastic containers greater than 118 ml (4 fl oz) capacity, in accordance with Section 6.4 of NFPA 30B Aerosol products in plastic containers greater than 4 fl oz (118 ml) capacity and not more than 33.8 fl oz (1000 ml) capacity, in accordance with Section 6.5 of NFPA 30B

[30B:6.1.1]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Tue Oct 22 08:06:16 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
Second Revision No. 588-NFPA 1-2013 [Section No. 61.3.1.2]

61.3.1.2
All outer packaging of aerosol products, including cartons, trays, shrouds, or other packaging, of aerosol products shall be identified on at least one side with the classification of the aerosol products in accordance with Section 1.9 of NFPA 30B and with one of the following, whichever is appropriate:

1. Level ___ Aerosols
2. Aerosol Cooking Spray
3. Plastic Aerosol 1 (or X)

[30B:6.1.2] LEVEL _____ AEROSOLS

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Tue Oct 22 08:16:47 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
61.3.3 Storage of Aerosol Cooking Spray Products.
61.3.3.1 General.
Aerosol cooking spray products shall be permitted to be stored in a general-purpose warehouse. [30B: 6.3.1.1]

61.3.3.2 Fire Protection.
Encapsulated storage of cartoned aerosol cooking spray products shall be protected as uncartoned storage. [30B: 6.3.2.1]

61.3.3.2.2 Stretch-wrapping of cartons of aerosol cooking spray products shall be protected as cartoned storage. [30B: 6.3.2.2]

61.3.3.2.3 Wet-pipe automatic sprinkler protection shall be provided in accordance with, Table 61.3.3.2.3(a) or Table 61.3.3.2.3(b), for cartoned aerosol cooking spray products stored in open frame racks without solid shelves or stored as palletized or solid pile storage. [30B: 6.3.2.3]

Table 61.3.3.2.3(a) Rack, Palletized and Solid Pile Storage of Cartoned Aerosol Cooking Spray Products (Metric Units)

<table>
<thead>
<tr>
<th>Maximum Ceiling Height(m)</th>
<th>Maximum Storage Height(m)</th>
<th>Sprinkler Type / Nominal Orifice(L/min / bar 0.5)</th>
<th>Response / Nominal Temperature Rating</th>
<th>Design(# sprinklers @ discharge pressure)</th>
<th>Hose Stream Demand(L/min)</th>
<th>Water Supply Duration(hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.1</td>
<td>7.6</td>
<td>ESFR-pendent K = 200</td>
<td>FR / Ordinary</td>
<td>12 @ 5.2 bar</td>
<td>950</td>
<td>1</td>
</tr>
</tbody>
</table>

[30B: Table 6.3.2.3(a)]

Table 61.3.3.2.3(b) Rack, Palletized and Solid Pile Storage of Cartoned Aerosol Cooking Spray Products (English Units)

<table>
<thead>
<tr>
<th>Maximum Ceiling Height (ft)</th>
<th>Maximum Storage Height (ft)</th>
<th>Sprinkler Type / Nominal Orifice (gpm/psi 0.5)</th>
<th>Response / Nominal Temperature Rating</th>
<th>Design (# sprinklers @ discharge pressure)</th>
<th>Hose Stream Demand (gpm)</th>
<th>Water Supply Duration (hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>25</td>
<td>ESFR-pendent K = 14.0</td>
<td>FR / Ordinary</td>
<td>12 @ 75 psi</td>
<td>250</td>
<td>1</td>
</tr>
</tbody>
</table>

[30B: Table 6.3.2.3(b)]

61.3.3.2.4 Rack storage shall be arranged so that a minimum aisle width of 8 ft (2.4 m) is maintained between rows of racks and between racks and adjacent solid pile or palletized storage. [30B: 6.3.2.4]

61.3.3.2.5 Solid pile and palletized storage shall be arranged so that no storage is more than 25 ft (7.6 m) from an aisle. Aisles shall be not less than 4 ft (1.2 m) wide. [30B: 6.3.2.5]
61.3.3.2.6
Aerosol cooking spray product that is stored uncartoned shall be protected in accordance with Section 6.4 of NFPA 30B using the criteria for a Level 2 or Level 3 aerosol product, based on the product’s chemical heat of combustion. [30B: 6.3.2.6]

61.3.3.2.7
Protection criteria that are developed based on full-scale fire tests performed at an approved facility shall be considered an acceptable alternative to the protection criteria set forth in Table 61.3.3.2.3(a) or Table 61.3.3.2.3(b). [30B: 6.3.2.7]

61.3.3.2.8
Storage in occupancies other than warehouses or mercantile occupancies, such as in assembly, business, educational, industrial, and institutional occupancies, shall be permitted up to a maximum of 1000 lb (454 kg) net weight. [30B: 6.3.2.8]

61.3.3.2.9
Solid pile, palletized, or rack storage of aerosol cooking spray product shall be permitted in a general-purpose warehouse that is either unsprinklered or not protected in accordance with this Code, up to a maximum of 2500 lb (1135 kg). [30B: 6.3.2.9]

Supplemental Information

<table>
<thead>
<tr>
<th>File Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SR-589_Attachment_61.3.3_Tables.1382446015405.doc</td>
<td>Tables 61.3.3.2.3(a) and 61.3.3.2.3(b)</td>
</tr>
</tbody>
</table>

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
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City: 
State: 
Zip: 
Submittal Date: Tue Oct 22 08:27:25 EDT 2013

Committee Statement

Committee Statement: Extract update. Tables provided in attachment. Renumber subsequent paragraphs accordingly.

Response Message:
### Table 61.3.3.2.3(a) Rack, Palletized and Solid Pile Storage of Cartoned Aerosol Cooking Spray Products (Metric Units)

<table>
<thead>
<tr>
<th>Maximum Ceiling Height (m)</th>
<th>Maximum Storage Height (m)</th>
<th>Ceiling Sprinkler Protection Criteria</th>
<th>Hose Stream Demand (L/min)</th>
<th>Water Supply Duration (hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.1</td>
<td>7.6</td>
<td>ESFR-pendent K = 200</td>
<td>950</td>
<td>1</td>
</tr>
</tbody>
</table>

### Table 61.3.3.2.3(b) Rack, Palletized and Solid Pile Storage of Cartoned Aerosol Cooking Spray Products (English Units)

<table>
<thead>
<tr>
<th>Maximum Ceiling Height (ft)</th>
<th>Maximum Storage Height (ft)</th>
<th>Ceiling Sprinkler Protection Criteria</th>
<th>Hose Stream Demand (gpm)</th>
<th>Water Supply Duration (hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>25</td>
<td>ESFR-pendent K = 14.0</td>
<td>250</td>
<td>1</td>
</tr>
</tbody>
</table>
61.3.4 Storage of Level 2 and Level 3 Aerosol Products.

61.3.4.1
The storage of Level 2 and Level 3 aerosol products shall be in accordance with NFPA 13. [30B:6.3.1.1 6.4.1.1] [30B:6.3.1.1 6.4.1.1]

61.3.4.1.1
Level 2 aerosol products in containers whose net weight is less than 1 oz (28 g) shall be considered to be equivalent to cartoned unexpanded Group A plastics, as defined in NFPA 13. [30B:6.3.1.1 6.4.1.1.1]

61.3.4.1.1.1
In cases where the storage of Level 2 aerosol products in containers whose net weight is less than 1 oz (28 g) is required to be protected, such storage shall be in accordance with the requirements set forth in NFPA 13 for cartoned unexpanded Group A plastics. [30B:6.3.1.1.1 6.4.1.1.1]

61.3.4.2 Fire Protection — Basic Requirements.

61.3.4.2.1
Storage of Level 2 and Level 3 aerosol products shall not be permitted in basement areas of warehouses. [30B:6.3.2.1 6.4.2.1]

61.3.4.2.2
Encapsulated storage of cartoned Level 2 and Level 3 aerosol products shall be protected as uncartoned. [30B:6.3.2.2 6.4.2.2]

61.3.4.2.2.1
Stretch-wrapping of cartons of aerosol products shall be permitted. [30B:6.3.2.2.1 6.4.2.2.1]

61.3.4.2.2.2
Encapsulated storage of uncartoned Level 2 and Level 3 aerosol products on slip sheets or in trays shall be permitted. [30B:6.3.2.2.2 6.4.2.2.2]

61.3.4.2.3
Level 2 and Level 3 aerosol products whose containers are designed to vent at gauge pressures of less than 210 psi (1450 kPa) shall not be stored. [30B:6.3.2.3 6.4.2.3]

61.3.4.2.4
Noncombustible draft curtains shall extend down a minimum of 2 ft (0.61 m) from the ceiling and shall be installed at the interface between ordinary and high-temperature sprinklers. [30B:6.3.2.4 6.4.2.4]

61.3.4.2.5
Storage of mixed commodities within or adjacent to aerosol product storage areas shall meet all applicable requirements of Chapter 6 of NFPA 30B. [30B:6.3.2.5 6.4.2.5]

61.3.4.2.6
Storage of idle or empty pallets shall meet all applicable requirements of NFPA 13. [30B:6.3.2.6 6.4.2.6]
Where required by Chapter 6 of NFPA 30B, wet-pipe automatic sprinkler protection shall be provided in accordance with Table 6.3.4.2.7(a) through Table 6.3.4.2.7(l) of NFPA 30B and Figure 6.3.4.2.7(a) through Figure 6.3.4.2.7(e) of NFPA 30B as designated in the corresponding table(s). Protection shall be based on the highest level of aerosol product present. No protection criteria have been established for the protection of palletized and solid piled storage of uncartoned Level 3 aerosol products. The tables are as follows:

1. Table 6.3.4.2.7(a) of NFPA 30B Palletized and Solid Pile Storage of Cartoned Level 2 and Level 3 Aerosol Products (Metric Units)
2. Table 6.3.4.2.7(b) of NFPA 30B Palletized and Solid Pile Storage of Cartoned Level 2 and Level 3 Aerosol Products (English Units)
3. Table 6.3.4.2.7(c) of NFPA 30B Palletized and Solid Pile Storage of Uncarton Level 2 Aerosol Products (Metric Units)
4. Table 6.3.4.2.7(d) of NFPA 30B Palletized and Solid Pile Storage of Uncarton Level 2 Aerosol Products (English Units)
5. Table 6.3.4.2.7(e) of NFPA 30B Rack Storage of Cartoned Level 2 Aerosol Products (Metric Units)
6. Table 6.3.4.2.7(f) of NFPA 30B Rack Storage of Cartoned Level 2 Aerosol Products (English Units)
7. Table 6.3.4.2.7(g) of NFPA 30B Rack Storage of Cartoned Level 3 Aerosol Products (Metric Units)
8. Table 6.3.4.2.7(h) of NFPA 30B Rack Storage of Cartoned Level 3 Aerosol Products (English Units)
9. Table 6.3.4.2.7(i) of NFPA 30B Rack Storage of Uncarton Level 2 Aerosol Products (Metric Units)
10. Table 6.3.4.2.7(j) of NFPA 30B Rack Storage of Uncarton Level 2 Aerosol Products (English Units)
11. Table 6.3.4.2.7(k) of NFPA 30B Rack Storage of Uncarton Level 3 Aerosol Products (Metric Units)
12. Table 6.3.4.2.7(l) of NFPA 30B Rack Storage of Uncarton Level 3 Aerosol Products (English Units)

[30B: 6.4.2.7]

61.3.4.2.7.1
The protection criteria in Tables 6.3.4.2.7(a) through 6.3.4.2.7(l) of NFPA 30B shall only be used with ceilings having a pitch of 2 in 12 or less. [30B: 6.3.4.2.7.1]

61.3.4.2.7.2
Fire protection requirements for more demanding commodity and clearance situations shall be permitted to be used for less demanding situations. [30B: 6.3.4.2.7.2]

61.3.4.2.7.3
The ordinary-temperature design criteria correspond to ordinary-temperature rated sprinklers and shall be used for sprinklers with ordinary- and intermediate-temperature classification. [30B: 6.3.4.2.7.3]

61.3.4.2.7.4
The high-temperature design criteria correspond to high-temperature rated sprinklers and shall be used for sprinklers having a high-temperature rating. [30B: 6.3.4.2.7.4]

61.3.4.2.8
Protection criteria that are developed based on full-scale fire tests performed at an approved test facility shall be considered an acceptable alternative to the protection criteria set forth in Table 6.3.4.2.7(a) through Table 6.3.4.2.7(l) of NFPA 30B. Such alternative protection criteria shall be subject to the approval of the AHJ. [30B: 6.3.4.2.8]

61.3.4.2.9
Installation of in-rack sprinklers shall be in accordance with NFPA 13, Standard for the Installation of Sprinkler Systems, as modified by Table 6.3.4.2.7(e) through Table 6.3.4.2.7(l) of NFPA 30B. [30B: 6.3.4.2.9]
61.3.4.2.9.1
The in-rack sprinkler water demand shall be based on the simultaneous operation of the most hydraulically remote sprinklers as follows:

(1) Sprinkler design parameters shall be in accordance with Table 6.3.4.2.7(a) through Table 6.3.4.2.7(l) of NFPA 30B, whichever is applicable.

(2) In-rack design flows indicated in Table 6.3.4.2.7(e) through Table 6.3.4.2.7(l) of NFPA 30B shall be provided, but in no case shall the end-sprinkler discharge be less than 10 psi (0.69 bar).

(3) Eight (8) sprinklers where only one level of in-rack sprinklers is provided.

(4) Twelve (12) sprinklers [six (6) sprinklers on two levels] where only two levels of in-rack sprinklers are provided.

(5) Eighteen (18) sprinklers [six (6) sprinklers on the top three levels] where more than two levels of in-rack sprinklers are provided. [30B: 6.3.2.9.1]

61.3.4.2.9.2
Where in-rack sprinklers are not shielded by horizontal barriers, water shields shall be provided above the sprinklers or listed intermediate level/rack sprinklers shall be used. [30B: 6.3.4.2.9.2]

61.3.4.2.9.3
When in-rack sprinklers are necessary to protect a higher hazard commodity that occupies only a portion of the length of a rack, the following shall apply:

(1) In-rack sprinklers shall be extended a minimum of 2.4 m (8 ft) or one bay, whichever is greater, in each direction along the rack on either side of the higher hazard.

(2) The in-rack sprinklers protecting the higher hazard shall not be required to be extended across the aisle. [30B: 6.3.2.9.3]

61.3.4.2.9.4
Where a storage rack, due to its length, requires less than the number of in-rack sprinklers specified, only those in-rack sprinklers in a single rack need to be included in the calculation. [30B: 6.3.4.2.9.4]

61.3.4.2.9.5*
In-rack sprinklers shall be located at an intersection of the transverse and longitudinal flues while not exceeding the maximum spacing rules. [30B: 6.3.4.2.9.5]

61.3.4.2.9.5.1
Where no transverse flues exist, in-rack sprinklers shall not exceed the maximum spacing rules. [30B: 6.3.4.2.9.5.1]

61.3.4.2.9.6
A minimum 150 mm (6 in.) vertical clearance shall be maintained between the sprinkler deflectors and the top of the tier of storage. [30B: 6.3.4.2.9.6]

61.3.4.2.9.7
Horizontal barriers used in conjunction with in-rack sprinklers to impede vertical fire development shall be constructed of minimum 22 ga sheet metal, 10 mm (⅜ in.) plywood, or similar material and shall extend the full length and depth of the rack. [30B: 6.3.4.2.9.7]

61.3.4.2.9.7.1
Barriers shall be fitted within 50 mm (2 in.) horizontally around rack uprights. [30B: 6.3.4.2.9.7.1]

61.3.4.2.10
Installations of hose connections shall meet the requirements of NFPA 13. [30B: 6.3.4.2.10]

61.3.4.2.10.1
Subject to the approval of the AHJ, hose stations shall not be required to be installed in storage areas. [30B: 6.3.4.2.10.1]

61.3.4.2.11
Storage height and building heights shall comply with Table 6.3.4.2.7(a) through Table 6.3.4.2.7(l) of NFPA 30B. [30B: 6.3.4.2.11]

61.3.4.2.12

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Solid shelving shall comply with 61.3.4.2.12.1 through 61.3.4.2.12.3. [30B:6.3.4.2.12.1]

61.3.4.2.12.1
Solid shelving that is installed in racks that contain Level 2 and Level 3 aerosol products shall be protected in accordance with Table 6.3.4.2.7(e) through Table 6.3.4.2.7(l) of NFPA 30B, whichever is applicable. [30B:6.3.4.2.12.1]

61.3.4.2.12.2
In addition to the in-rack sprinklers shown in Figure 6.3.4.2.7(a) through Figure 6.3.4.2.7(e) of NFPA 30B, whichever is applicable, a face sprinkler shall be provided directly below the solid shelf or the elevation of the solid shelf if the face sprinkler is located in a transverse flue. [30B:6.3.4.2.12.2]

61.3.4.2.12.3
The face sprinklers below the shelving required by 61.3.4.2.12.2 shall be not greater than 8 ft (2.4 m) apart as far as the solid shelving level extends. [30B:6.3.4.2.12.3]

61.3.4.2.13
Where spray sprinklers are utilized for ceiling protection, sprinkler spacing shall not exceed 100 ft² (9.3 m²) unless otherwise permitted by 61.3.4.2.14. [30B:6.3.4.2.13]

61.3.4.2.14
Ordinary or intermediate temperature rated K = 25.2 extended-coverage spray sprinklers shall be permitted to be used for all density spray sprinkler design criteria in Table 6.3.4.2.7(l) of NFPA 30B when installed in accordance with their listing. [30B:6.3.4.2.14]

61.3.4.2.15
The ceiling heights in Table 6.3.4.2.7(e) through Table 6.3.4.2.7(l) of NFPA 30B shall be permitted to be increased by a maximum of 10 percent if an equivalent percent increase in ceiling sprinkler design density is provided. This shall only apply to spray sprinkler protection criteria. [30B:6.3.4.2.15]

61.3.4.2.16
Protection systems that are designed and developed based on full-scale fire tests performed at an approved test facility or on other engineered protection schemes shall be considered an acceptable alternative to the protection criteria set forth in Section 6.3 of NFPA 30B. Such alternative protection systems shall be approved by the AHJ. [30B:6.3.4.2.16]

61.3.4.2.17
Rack storage shall be arranged so that a minimum aisle width of 8 ft (2.4 m) is maintained between rows of racks and between racks and adjacent solid pile or palletized storage. [30B:6.3.4.2.17]

61.3.4.2.18
Where protection is provided by ESFR sprinklers, aisle width shall be not less than 4 ft (1.2 m). [30B:6.3.4.2.18]

61.3.4.2.19
Solid pile and palletized storage shall be arranged so that no storage is more than 25 ft (7.6 m) from an aisle. Aisles shall be not less than 4 ft (1.2 m) wide. [30B:6.3.4.2.19]
61.4 Mercantile Occupancies.
   
61.4.1 Plastic Aerosol X Products.
Plastic aerosol X products shall be permitted to be stored in mercantile occupancies up to a maximum quantity of 100 lb (45 kg) net weight. [30B: 7.1]

61.4.2 Sales Display Areas — Aerosol Product Storage Not Exceeding 8 ft (2.4 m) High.
   
61.4.2.1 Level 1 aerosol products and plastic aerosol 1 products, in sales display areas shall not be limited. [30B:7.1.2.1]

61.4.2.2 Aerosol cooking spray products, Level 2 aerosol products, and Level 3 aerosol products shall be removed from combustible cartons, or the cartons shall be display-cut, when located in sales display areas. [30B:7.1.2.2]

61.4.2.2.1 Cartoned display of aerosol cooking spray products shall be permitted provided the area is protected in accordance with Table 6.3.2.3(a) or Table 6.3.2.3(b) of NFPA 30B, or the area is protected in accordance with Table 6.4.2.7(a) through Table 6.4.2.7(l) of NFPA 30B, or the maximum quantity of cartoned display complies with 61.4.2.3.1. [30B: 7.2.2.1]

61.4.2.2.2 Cartoned display of Level 2 aerosol products and Level 3 aerosol products shall be permitted, provided the area is either protected in accordance with Table 6.3.4.2.7(a) through Table 6.3.4.2.7(l) of NFPA 30B or the maximum quantity of cartoned display complies with 61.4.2.3.1. [30B: 7.1.2.2.1]

61.4.2.3 Aerosol cooking spray products, Level 2 aerosol products, and Level 3 aerosol products in sales display areas shall not exceed the maximum quantities given in Table 61.4.2.3.1 according to the protection provided. [30B: 7.1.2.3]

61.4.2.3.1 In sales display areas that are nonsprinklered or whose sprinkler system does not meet the requirements of Table 61.4.2.3.2, the total aggregate quantity of aerosol cooking spray products, Level 2 aerosol products, and Level 3 aerosol products in plastic containers shall not exceed 2 lb/ft² (9.8 kg/m²) of total sales display area, up to the quantities specified in Table 61.4.2.3.1. [30B: 7.1.2.3.1]

Table 61.4.2.3.1 Maximum Quantity per Floor of Aerosol Cooking Spray Products, Level 2 Aerosol Products, and Level 3 Aerosol Products, and Aerosol Products in Plastic Containers

<table>
<thead>
<tr>
<th>Floor</th>
<th>Max. Net Weight per Floor</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>lb</td>
</tr>
<tr>
<td>Basement</td>
<td>Not Permitted</td>
</tr>
<tr>
<td>Ground</td>
<td>2500</td>
</tr>
<tr>
<td>Upper</td>
<td>500</td>
</tr>
</tbody>
</table>

[30B: Table 7.1.2.3.1]

61.4.2.3.1.1 No single 10 ft x 10 ft (3 m x 3 m) section of sales display area shall contain an aggregate quantity of more than 1000 lb (454 kg) net weight of Level 2 aerosol cooking spray products, Level 2 aerosol products, and Level 3 aerosol products and aerosol products in plastic containers. [30B: 7.1.2.3.1.1]

61.4.2.3.2 In sales display areas that are sprinklered in accordance with NFPA 13, for at least Ordinary Hazard (Group 2) occupancies, the total aggregate quantity of Level 2 aerosol cooking spray products, Level 2 aerosol products, and Level 3 aerosol products shall not exceed 2 lb/ft² (9.8 kg/m²) of total sales display area. [30B: 7.1.2.3.2]
61.4.2.3.2.1
No single 10 ft × 10 ft (3 m × 3 m) section of sales display area shall contain an aggregate quantity of more than 1000 lb (454 kg) net weight of Level 2 aerosol cooking spray products, Level 2 aerosol products, and Level 3 aerosol products. [30B:7.1.3.2.1]

61.4.2.4
Level 2 Aerosol cooking spray products, Level 2 aerosol products, and Level 3 aerosol products shall be securely stacked to not more than 6 ft (1.8 m) high from base to top of the storage array unless on fixed shelving. [30B:7.4.2.4]

61.4.2.4.1
Shelving shall be of stable construction and storage shall not exceed 8 ft (2.4 m) in height. [30B:7.1.3.2.1]

61.4.3 Sales Display Areas — Aerosol Products Storage Exceeding 8 ft (2.4 m) High.

61.4.3.1
Storage and display of Level 1 aerosol products and plastic aerosol products in sales display areas shall not be limited. [30B:7.2.3.1]

61.4.3.2
Uncarton or display-cut (case-cut) Level 2 aerosol cooking spray products, Level 2 aerosol products, and Level 3 aerosol products that are stored for display no more than 6 ft (1.8 m) above the floor shall be permitted where protection is installed in accordance with 61.4.3.3 based on the highest level of aerosol product in the array and the packaging method of the storage above 6 ft (1.8 m). [30B:7.2.3.2]

61.4.3.3 Protection.

61.4.3.3.1
The storage and display of aerosol cooking spray products in metal containers only shall be protected in accordance with Table 6.3.2.3(a) or Table 6.3.2.3(b) of NFPA 30B, or shall be protected in accordance with Table 6.4.2.7(a) through Table 6.4.2.7(l) of NFPA 30B. The storage and display of Level 2 and Level 3 aerosol products in metal containers only shall be protected in accordance with Table 6.3.2.7(a) through Table 6.3.2.7(l) of NFPA 30B, whichever is applicable. [30B:7.2.3.3.1]

61.4.3.3.1.1
Where in-rack sprinklers are required by Table 6.4.2.7(e) through Table 6.4.2.7(l) of NFPA 30B and where the Level 2 aerosol cooking spray products, Level 2 aerosol products, and Level 3 aerosol products are stored for display below the 6 ft (1.8 m) level, the first tier of in-rack sprinklers shall be installed above the display, but not more than 6 ft (1.8 m) above the floor level. [30B:7.2.3.3.1.1]

61.4.3.3.2
Noncombustible draft curtains shall extend down a minimum of 2 ft (0.61 m) from the ceiling and shall be installed at the interface between ordinary and high-temperature sprinklers. [30B:7.2.3.3.2]

61.4.3.4
Storage and display of Level 2 aerosol cooking spray products, Level 2 aerosol products, and Level 3 aerosol products shall not exceed 10,000 lb (4,540 kg) net weight within any 25,000 ft² (2,323 m²) of sales display area. [30B:7.2.4.4]

61.4.3.4.1
Level 2 Aerosol cooking spray products, Level 2 aerosol products, and Level 3 aerosol product display areas shall be separated from each other by a minimum of 25 ft (7.6 m). [30B:7.2.4.1]

61.4.3.5
The area of the design for the required ceiling sprinkler system shall extend 20 ft (6 m) beyond the Level 2 area devoted to storage of aerosol cooking spray products or Level 2 aerosol product display and storage area products. [30B:7.2.3.5]

61.4.3.6
Storage and display of Level 2 aerosol cooking spray products, Level 2 aerosol products, and Level 3 aerosol products shall be separated from the storage of flammable and combustible liquids by a minimum distance of 25 ft (7.6 m) or by a segregating wall or noncombustible barrier. [30B:7.2.3.6]

61.4.3.6.1
Where Level 2 aerosol cooking spray products, Level 2 aerosol products, and Level 3 aerosol products are stored within 25 ft (7.6 m) of flammable and combustible liquids, beneath the noncombustible barrier shall be liquidtight at the floor to prevent spilled liquids from flowing beneath the aerosol products. [30B:7.2.3.6.1]
61.4.3.7
The sales display area shall meet the requirements for mercantile occupancies in NFPA 101. [30B:7.2.3.7]

61.4.4 Back Stock Storage Areas.

61.4.4.1 Where back stock areas are separated from sales display areas by construction having a minimum 1-hour fire resistance rating, storage of Level 2 aerosol cooking spray products, Level 2 aerosol products, and Level 3 aerosol products shall meet the requirements of Chapter 6 of NFPA 30B. [30B:7.3.4.1]

61.4.4.2 Where back stock areas are not separated from sales display areas by construction having a minimum 1-hour fire resistance rating, the quantity of Level 2 aerosol cooking spray products, Level 2 aerosol products, and Level 3 aerosol products in back stock areas shall be included in the total allowable quantities specified in 61.4.2.3 61.4.2.361.4.2.361.4.1.3 or 61.4.3.4 61.4.3.461.4.3.461.4.2.4. [30B:7.3.4.2]

61.4.4.2.1 Protection shall be provided in accordance with 61.4.3.3 61.4.3.361.4.3.361.4.2.3. [30B:7.3.2.1]

61.4.4.3 An additional quantity of Level 2 aerosol cooking spray products, Level 2 aerosol products, and Level 3 aerosol products, up to a maximum of 500 lb (227 kg) net weight, shall be permitted in back stock areas where the additional quantities are stored in flammable liquid storage cabinets that meet the requirements of Section 9.5 of NFPA 30. [30B:7.3.4.3]

61.4.4.4 Storage of Level 2 aerosol cooking spray products, Level 2 aerosol products, and Level 3 aerosol products in separate, inside flammable liquids storage rooms shall meet the requirements of 6.3.7 of NFPA 30B. [30B:7.3.4.4]

Submitter Information Verification

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Committee Statement

Committee Statement: Extract update based on 30B SR-17 and SR-29.
Response Message:
61.5.6.3 Maintenance.

61.5.6.3.1 Deflagration vent closure maintenance shall be performed after every act of nature or process upset condition to ensure that the closure has not been physically damaged and there are no obstructions, including but not limited to snow, ice, water, mud, or process material, that could lessen or impair the efficiency of the vent closure.

61.5.6.3.2 An inspection shall be performed in accordance with 11.4.4 of NFPA 68, Standard on Explosion Protection by Deflagration Venting, after every process maintenance turnaround.

61.5.6.3.3 If process material has a tendency to adhere to the vent closure, the vent closure shall be cleaned periodically to maintain vent efficiency.

61.5.6.3.4 Process interlocks, if provided, shall be verified.

61.5.6.3.5 Known potential ignition sources shall be inspected and maintained.

61.5.6.3.6 Records shall be kept of any maintenance and repairs performed.

Submitter Information Verification

Submitter Full Name: Gregory Harrington
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Committee Statement

Committee Statement: Extract update.
Response Message:
Second Revision No. 62-NFPA 1-2013 [ Section No. 63.1.3.29 ]

63.1.3.29  Gaseous Hydrogen System.
See 3.3.146 3.3.147 [55, 2013]

Submitter Information Verification

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Committee Statement

Committee Statement: Editorial correction.
Response Message:
Second Revision No. 63-NFPA 1-2013 [ Section No. 63.1.3.36 ]

63.1.3.36 Manual Emergency Shutoff Valve.
See 3.3.175 [55, 2013]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
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Committee Statement

Committee Statement: Editorial correction.
Response Message:
Second Revision No. 64-NFPA 1-2013 [ Section No. 63.1.3.37 ]

63.1.3.37 Mechanical Code.
See 3.3.54.3 3.3.54.33.3.53.3. {55, 2013}

Submitter Information Verification

Submitter Full Name: Gregory Harrington
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Submittal Date: Mon Jul 15 09:52:13 EDT 2013

Committee Statement

Committee Statement: Editorial correction.
Response Message:
63.2.2.1 Construction Requirements.
Control areas shall be separated from each other by fire barriers in accordance with Table 63.2.2.1 [5000:34.2.5.1.1]

<table>
<thead>
<tr>
<th>Floor Level</th>
<th>Maximum Allowable Quantity per Control Area (%)†</th>
<th>Number of Control Areas per Floor</th>
<th>Fire Resistance Rating for Fire Barriers‡ (hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Above grade plane</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt;9</td>
<td>5</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>7–9</td>
<td>5</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>4–6</td>
<td>12.5</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>50</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>75</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>1</td>
<td>100</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Below grade plane</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>75</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>50</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>I lower than 2</td>
<td>NP</td>
<td>NP</td>
<td>N/A</td>
</tr>
</tbody>
</table>

NP: Not Permitted.
N/A: Not Applicable.
†Percentages represent the maximum allowable quantities MAQ per control area shown in Table 6.3.1.1 60.4.2.1.1.3, with all of the increases permitted in the footnotes of that table.
‡Fire barriers are required to include floors and walls, as necessary, to provide a complete separation from other control areas.

Submitter Information Verification
Submitter Full Name: Gregory Harrington
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Submittal Date: Thu Aug 22 16:08:07 EDT 2013

Committee Statement
Committee Statement: Extract update.
Response Message:
63.2.2.4 Quantities Less Than or Equal to the MAQ.

Indoor control areas with compressed gases or cryogenic fluids stored or used in quantities less than or equal to those shown in Table 63.2.3.1.1 shall be in accordance with 6.3.1.6, 6.3.1.7, and Sections 6.1, 6.7, 6.8, 6.12, 6.15, and 6.16 63.2.1, 63.2.3.1.6, 63.2.3.1.7, 63.2.7, 63.2.8, 63.2.12, 63.2.15, 63.2.16, and the applicable provisions of Chapters 1 through 5 and Chapters 7 through 15 of NFPA 55. [55:6.2.4]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
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Street Address:
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Submittal Date: Mon Jul 15 09:57:53 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
63.2.3.1.1 Threshold Exceedences.
Where the quantities of compressed gases or cryogenic fluids stored or used within an indoor control area exceed those shown in Table 63.2.3.1.1, the area shall meet the requirements for Protection Levels 1 through 5 in accordance with the building code, based on the requirements of 63.2.3.2. [55:6.3.1.1]

Table 63.2.3.1.1 Maximum Allowable Quantity (MAQ) of Hazardous Materials per Control Area (Quantity Thresholds for Gases Requiring Special Provisions)

<table>
<thead>
<tr>
<th>Material</th>
<th>Class</th>
<th>High Hazard Protection Level</th>
<th>Storage</th>
<th>Use — Closed Systems</th>
<th>Use — Open Systems</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Solid Pounds</td>
<td>Liquid Gallons</td>
<td>Gas scf (lb)</td>
</tr>
<tr>
<td>Cryogenic fluid</td>
<td>Flammable</td>
<td>2</td>
<td>NA</td>
<td>45 b,c</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>Oxidizing</td>
<td>3</td>
<td>NA</td>
<td>45 d,e</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>Inert</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Flammable, gas</td>
<td>Gaseous</td>
<td>2</td>
<td>NA</td>
<td>1000 d,e</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>Liquefied</td>
<td>2</td>
<td>NA</td>
<td>(150) d,e</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>LP</td>
<td>2</td>
<td>NA</td>
<td>(300) g,h,i</td>
<td>NA</td>
</tr>
<tr>
<td>Inert gas</td>
<td>Gaseous</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>Liquefied</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Oxidizing gas</td>
<td>Gaseous</td>
<td>3</td>
<td>NA</td>
<td>1500 d,e</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>Liquefied</td>
<td>3</td>
<td>NA</td>
<td>(150) d,e</td>
<td>NA</td>
</tr>
<tr>
<td>Pyrophoric gas</td>
<td>Gaseous</td>
<td>2</td>
<td>NA</td>
<td>50 d,j</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>Liquefied</td>
<td>2</td>
<td>NA</td>
<td>(4) d,j</td>
<td>NA</td>
</tr>
<tr>
<td>Unstable (reactive) gas</td>
<td>Gaseous</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4 or 3 detonable</td>
<td>1</td>
<td>NA</td>
<td>10 d,j</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>3 nondetonable</td>
<td>2</td>
<td>NA</td>
<td>50 d,e</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>3</td>
<td>NA</td>
<td>750 d,e</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>NA</td>
<td>NA</td>
<td>NL</td>
<td>NA</td>
</tr>
<tr>
<td>Unstable (reactive) gas</td>
<td>Liquefied</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4 or 3 detonable</td>
<td>1</td>
<td>NA</td>
<td>(1) d,j</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>3 nondetonable</td>
<td>2</td>
<td>NA</td>
<td>(2) d,e</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>3</td>
<td>NA</td>
<td>(150) d,e</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>NA</td>
<td>NA</td>
<td>NL</td>
<td>NA</td>
</tr>
<tr>
<td>----------</td>
<td>-------</td>
<td>-------------------------------</td>
<td>--------------</td>
<td>---------------</td>
<td>---------------</td>
</tr>
</tbody>
</table>

NA: Not applicable within the context of NFPA 55 (refer to the applicable building or fire code for additional information on these materials).

NL: Not limited in quantity.

Notes:

(1) For use of control areas, see Section 6.2 of NFPA 55.

(2) Table values in parentheses or brackets correspond to the unit name in parentheses or brackets at the top of the column.

(3) The aggregate quantity in use and storage is not permitted to exceed the quantity listed for storage. In addition, quantities in specific occupancies are not permitted to exceed the limits in the building code.

a Measured at NTP [70°F (20°C) and 14.7 psi (101.3 kPa)].

b None allowed in unsprinklered buildings unless stored or used in gas rooms or in approved gas cabinets or exhausted enclosures, as specified in this code.

c With pressure-relief devices for stationary or portable containers vented directly outdoors or to an exhaust hood.

d Quantities are permitted to be increased 100 percent where stored or used in approved cabinets, gas cabinets, exhausted enclosures, gas rooms, as appropriate for the material stored. Where Footnote e also applies, the increase for the quantities in both footnotes is permitted to be applied accumulatively.

e Maximum quantities are permitted to be increased 100 percent in buildings equipped throughout with an automatic sprinkler system in accordance with NFPA 13, Standard for the Installation of Sprinkler Systems. Where Footnote d also applies, the increase for the quantities in both footnotes is permitted to be applied accumulatively.

f Flammable gases in the fuel tanks of mobile equipment or vehicles are permitted to exceed the MAQ where the equipment is stored and operated in accordance with the applicable fire code.

g See NFPA 58, Liquefied Petroleum Gas Code, and Chapter 69, for requirements for liquefied petroleum gas (LP-Gas). LP-Gas is not within the scope of NFPA 55 or Chapter 63.

h Additional storage locations are required to be separated by a minimum of 300 ft (92 m).

i In mercantile occupancies, storage of LP-Gas is limited to a maximum of 200 lb (91 kg) in nominal 1 lb (0.45 kg) LP-Gas containers.

j Permitted only in buildings equipped throughout with an automatic sprinkler system in accordance with NFPA 13.

k Allowed only where stored or used in gas rooms or in approved gas cabinets or exhausted enclosures, as specified in this code.

[55:Table 6.3.1.1]
**Committee Statement**

Committee Statement: Extract update. NOTE: The only changes are to Note (1) and Footnote 'g'.

Response Message:
63.2.3.1.6.2

Containers, cylinders, or tanks not exceeding 250 ft$^3$ scf (7.1 m$^3$) content at normal temperature and pressure (NTP) and used for maintenance purposes, patient care, or operation of equipment shall be permitted. [55:6.3.1.6.2]
63.2.11 Lighting.

Approved lighting by natural or artificial means shall be provided for areas of storage or use. [55:6.11]
Indoor storage and use areas and storage buildings for compressed gases and cryogenic fluids shall be provided with mechanical exhaust ventilation or fixed natural ventilation, where natural ventilation is shown to be acceptable for the material as stored. [55:63.2.16 6.16 ]

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Submittal Date: Mon Jul 15 12:23:02 EDT 2013

Committee Statement
Committee Statement: Extract update.
Response Message:
63.3.1.6 Containers, Cylinders, and Tanks.

63.3.1.6.1 Design and Construction.
Containers, cylinders, and tanks shall be designed, fabricated, tested, and marked (stamped) in accordance with regulations of DOT, Transport Canada (TC) Transportation of Dangerous Goods Regulations, or the ASME Boiler and Pressure Vessel Code, "Rules for the Construction of Unfired Pressure Vessels," Section VIII. [55:7.1.6.1]

63.3.1.6.2 Defective Cylinders, Containers, and Tanks.

63.3.1.6.2.1 Defective cylinders, containers, and tanks shall be returned to the supplier. [55:7.1.6.2.1]

63.3.1.6.2.2 Suppliers shall either repair the cylinders, containers, and tanks, remove them from service, or dispose of them in an approved manner. [55:7.1.6.2.2]

63.3.1.6.2.3 Suppliers shall ensure that defective cylinders, containers, and tanks that have been repaired are evaluated by qualified individuals to verify that the needed repairs and any required testing has been performed and that those repaired or tested are in a serviceable condition before returning them to service. [55:7.1.6.2.3]

63.3.1.6.3 Supports.
Stationary cylinders, containers, and tanks shall be provided with engineered supports of noncombustible material on noncombustible foundations. [55:7.1.6.3]

63.3.1.6.4 Cylinders, Containers, and Tanks Containing Residual Gas.
Compressed gas cylinders, containers, and tanks containing residual product shall be treated as full except when being examined, serviced, or refilled by a gas manufacturer, authorized cylinder requalifier, or distributor. [55:7.1.6.4]

63.3.1.6.5 Pressure Relief Devices.

63.3.1.6.5.1 When required by 63.3.1.6.5.2, pressure relief devices shall be provided to protect containers and systems containing compressed gases from rupture in the event of overpressure from thermal exposure. [55:7.1.6.5.1]

63.3.1.6.5.2 Pressure relief devices to protect containers shall be designed and provided in accordance with CGA S-1.1, Pressure Relief Device Standards – Part 1 – Cylinders for Compressed Gases, for cylinders; CGA S-1.2, Pressure Relief Device Standards – Part 2 – Cargo and Portable Tanks for Compressed Gases, for portable tanks; and CGA S-1.3, Pressure Relief Device Standards – Part 3 – Stationary Storage Containers for Compressed Gases, for stationary tanks or in accordance with applicable equivalent requirements in the country of use. [55:7.1.6.5.2]

63.3.1.6.5.3 Pressure relief devices shall be sized in accordance with the specifications to which the container was fabricated. [55:7.1.6.5.3]

63.3.1.6.5.4 The pressure relief device shall have the capacity to prevent the maximum design pressure of the container or system from being exceeded. [55:7.1.6.5.4]

63.3.1.6.5.5 Pressure relief devices shall be arranged to discharge unobstructed to the open air in such a manner as to prevent any impingement of escaping gas upon the container, adjacent structures, or personnel. This requirement shall not apply to DOT specification containers having an internal volume of 2.0 $^3 \text{ scf}$ ($0.057 \text{ N m}^3$) or less. [55:7.1.6.5.5]
Pressure relief devices or vent piping shall be designed or located so that moisture cannot collect and freeze in a manner that would interfere with operation of the device. [55:7.1.6.5.6]
63.3.1.11.9 Exposure to Chemicals.

Compressed gas containers, cylinders, and tanks shall not be exposed to corrosive chemicals or fumes that could damage containers, cylinders, tanks, or valve-protective caps. [55:7.1.11.9]

Submitter Information Verification

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Submittal Date: Mon Jul 15 12:34:54 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
63.3.1.19  Cleaning and Purging of Gas Piping Systems.

63.3.1.19.1  General.

63.3.1.19.1.1  Piping systems shall be cleaned and purged in accordance with the requirements of 63.3.1.19 when one or more of the following conditions exist:

1. When the system is installed and prior to being placed into service.
2. When there is a change in service.
3. When there are alterations or repair of the system involving the replacement of parts or addition to the piping system and prior to returning the system to service.
4. Where specified by the design standards or written procedures.

[55: 7.1.19.1.1]

63.3.1.19.2  Cleaning and purging of the internal surfaces of piping systems shall be conducted by qualified individuals trained in cleaning and purging operations and procedures, including the recognition of potential hazards associated with cleaning and purging. [55: 7.1.19.1.2]

63.3.1.19.3  A written cleaning or purging procedure shall be provided to establish the requirements for the cleaning and purging operations to be conducted. [55: 7.1.19.1.3]

63.3.1.19.3.1  An independent or third-party review of the written procedure shall be conducted after the procedure has been written and shall:

1. evaluate hazards, errors, and malfunctions related to each step in the procedure
2. review the measures prescribed in the procedure for applicability
3. make recommendations for additional hazard mitigation measures if deemed to be necessary.

[55: 7.1.19.1.3.1]

63.3.1.19.3.2  The completed written procedure shall be:

1. maintained on site by the facility owner/operator
2. provided to operating personnel engaged in cleaning or purging operations
3. made available to the AHJ upon request.

[55: 7.1.19.1.3.2]

63.3.1.19.3.3  Where generic cleaning or purging procedures have been established, a job-specific operating procedure shall not be required. [55: 7.1.19.1.3.3]

63.3.1.19.3.4  Generic procedures shall be reviewed when originally published or when the procedure or operation is changed. [55: 7.1.19.1.3.4]

63.3.1.19.4  Written procedures to manage a change in process materials, technology, equipment, procedures, and facilities shall be established by the facility owner/operator. [55: 7.1.19.1.4]
The management-of-change procedures shall ensure that the following topics are addressed prior to any change in the configuration or design of the piping system:

1. The technical basis for the proposed change.
2. The safety and health implications.
3. Whether the change is permanent or temporary.
4. Whether modifications to the cleaning and purging procedures are required as a result of the changes identified.

When modifications to the cleaning and purging procedures are required, the written procedure shall be updated to incorporate any elements identified by the management-of-change procedures.

Prior to cleaning or purging, piping systems shall be inspected and tested to determine that the installation, including the materials of construction, and method of fabrication, comply with the requirements of the design standard used and the intended application for which the system was designed.

Inspection and testing of piping systems shall not be required to remove a system from service.

Purging of piping systems shall not be required for systems that are utilized for operations designated by written operating procedures when systems are utilized in accordance with the requirements of the cleaning or purging procedure specified in 63.3.1.19.1.1.

Personnel in the affected area(s), as determined by the cleaning or purging procedure, shall be informed of the hazards associated with the operational activity and notified prior to the initiation of any such activity.

Cleaning.
Piping system designs shall be documented to specify the requirements for the internal cleaning of the piping system prior to installation and initial use.

The internal surfaces of gas piping systems shall be cleaned to ensure that the required standard of cleanliness specified by the design is met prior to placing the gas piping system into service.

When piping systems are cleaned in stages during installation or assembly, the interior of the cleaned piping shall be protected against the infiltration of unwanted contaminants.

Piping systems used to contain gases with a physical or health hazard in any of the categories specified by 63.1.4 shall be purged prior to being placed into service for initial use.
63.3.1.19.3.1
Piping systems shall be purged to remove the internal contents preceding the following activities or operations to:

1. activate or place a piping system into service
2. deactivate or remove a piping system from service
3. change the service of a piping system from one gas to another, except when such gas is supplied to a manifold or piping system designed for the purpose of filling or otherwise processing cylinders, containers, or tanks in a process with established procedures
4. perform service, maintenance or modifications on a system where personnel or designated areas will potentially be exposed to the internal contents of the piping system
5. perform hot work including but not limited to welding, cutting or brazing on the piping system.

[55: 7.1.19.3.1]

63.3.1.19.3.2
The termination point for the release of purged gases shall be in accordance with 63.2.15.

[55: 7.1.19.3.2]

63.3.1.19.3.2.1
The release of purged gases or mixtures containing any quantity of corrosive, toxic, or highly toxic gases shall be through a treatment system in accordance with the applicable requirements of 63.3.5.3.4 or 63.3.9.3.[55: 7.1.19.3.2.1]

63.3.1.19.3.2.2
The termination point for the release of purged gases resultant from the purging of piping systems out of service, other than those in accordance with 63.3.1.19.3.2.1, shall not be required to be in accordance with 63.2.15 where the contained volume of the piping system when released to indoor areas does not result in a concentration in the room or area that exceeds any of the following limits or that will reduce the oxygen concentration in the room or area below a level of 19.5%:

1. Ceiling Limit
2. Permissible Exposure Limit
3. Short Term Exposure Limit
4. 25% of the Lower Flammable Limit

[55: 7.1.19.3.2.2]

Supplemental Information

<table>
<thead>
<tr>
<th>File Name</th>
<th>Description</th>
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<tbody>
<tr>
<td>SR599_A.63.3.1.19_102813.docx</td>
<td>Annex A text corresponding to 63.3.1.19</td>
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</tbody>
</table>

Submitter Information Verification

Submitter Full Name: Kristin Bigda
Organization: National Fire Protection Assoc
Street Address: City:
State: Zip: Submittal Date: Fri Oct 25 14:50:42 EDT 2013

Committee Statement

Committee Statement: Extract update. Text is being added from NFPA 55, 2013 TIA-13-2. Annex A text is also being added. Text is being added from NFPA 55, 2013 TIA-13-2 for consistency with the extracts.
Response
Message:
A.63.3.1.19.1.1(c)
The replacement of parts in a system to repair leaks, the addition of gaskets, and similar routine maintenance is not intended to establish the need for cleaning of the entire piping system. Conversely, when a piping system is extended, or when the system needs to be rendered safe for maintenance purposes, purging the system before disassembly will likely be required as will internal cleaning if new piping or materials of construction are introduced. [55: A.7.1.19.1.1(c)]

A.63.3.1.19.1.1(d)
Cleaning and purging of piping systems can be conducted as individual functions, i.e., just cleaning or just purging, or in combination as required to satisfy the requirements of the procedures. [55: A.7.1.19.1.1(d)]

A.63.3.1.19.1.3
It is not intended that a new written procedure be required each time the activity occurs within a facility. [55: A.7.1.19.1.3]

A.63.3.1.19.1.3.1
The review of the written procedures should not be performed solely by the same person or persons responsible for developing the procedures. It can be performed by an independent person or group within the company or department or by a third-party consultant. [55: A.7.1.19.1.3.1]

A.63.3.1.19.1.5.3
The notification is given to warn personnel that such procedures are about to occur so that they will be out of zones potentially affected by the cleaning or purging procedure. The intended notification is to be commensurate with the operation to be conducted and the timing of the notification should be relevant to the activity conducted so that personnel in the area can respond in a timely manner. Notification could consist of sounding of an audible and/or visible alarm, or it could consist of an announcement over a public address system, private network, radio, or similar and reliable means of electronic transmission.
Verbal notification can be used in operations where the piping system is limited to the area occupied by those that will be conducting the cleaning or purging procedures and related operating personnel. These areas are frequently found in occupancies where the gas used to charge the piping system is supplied from portable containers, as well as those areas where the piping system is primarily located in the occupied work area. [55: A.7.1.19.1.5.3]

A.63.3.1.19.2
For additional information on cleaning techniques used for stainless steel parts and equipment, see ASTM A380, *Standard Practice for Cleaning, Descaling, and Passivation of Stainless Steel Parts, Equipment, and Systems.* [55: A.7.1.19.2]

A.63.3.1.19.2.2
During construction, visual inspection should be performed on sections of pipe as the piping system is assembled to ensure that no gross contamination is left in the pipe.
When the standard of cleanliness is high, fabrication techniques should be utilized that do not introduce contamination into the pipe. Examples of these techniques can include, but are not limited to, constant inert gas purging, or assembly in a particulate controlled environment. The use of piping and components with a high quality interior surface finish, and materials of construction all have an effect on the ability to maintain a high degree of cleanliness. Cleaning after construction can typically be accomplished by applying one or more of the following methods:

1. pigging
2. mechanical scraping
3. high velocity gas flow
4. liquid washing
5. use of cleaning media
6. application of high vacuum
7. solvent cleaning
8. water washing
9. steam cleaning.

A.63.3.1.19.3
Purging can be accomplished by continuous media or gas flow, evacuation or vacuum, or repeated pressurizing and venting cycles commonly referred to as pulse or cycle purging. In some cases purge procedures can involve more than one type of purging technique. Purging can be accomplished by manual or automatic means. The use of automated purge panels or manifold systems operated by a programmable logic controller is common as a means to enhance the results of a purging process where high purity gas delivery systems are employed.
63.3.3.1.1 Applicability.
The use and handling of compressed gas containers, cylinders, containers, tanks, and systems shall be in accordance with 63.3.3.1. [55:7.3.1.1]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Mon Jul 15 12:37:41 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
63.3.3.1.6.1
Compressed gas cylinders, containers, and tanks containing flammable liquefied gas, except those designed for use in a horizontal position and those compressed gas containers, cylinders, and tanks containing nonliquefied gases, shall be used in a “valve end up” upright position. [55:7.3.1.6.1]
Where compressed gases having a hazardous ranking in one or more of the following hazard classes in accordance with NFPA 704 are carried in pressurized piping above a gauge pressure of 15 psi (103 kPa), an approved means of either leak detection with emergency shut off or excess flow control shall be provided:

1. Health hazard Class 3 or Class 4
2. Flammability Class 4
3. Reactivity Instability Class 3 or Class 4

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
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Submittal Date: Mon Jul 15 12:40:19 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
63.3.6.3 Reserved. Indoor Non-Bulk Hydrogen Compressed Gas System Location.

63.3.6.3.1 Hydrogen systems of less than 3500 scf (99 Nm$^3$) and greater than the MAQ, where located inside buildings, shall be in accordance with the following:

1. In a ventilated area in accordance with the provisions of 63.2.16
2. Separated from incompatible materials in accordance with the provisions of 7.1.11.2 of NFPA 55
3. A distance of 25 ft (7.6 m) from open flames and other sources of ignition
4. A distance of 50 ft (15 m) from intakes of ventilation, air-conditioning equipment, and air compressors located in the same room or area as the hydrogen system
   a. The distance shall be permitted to be reduced to 10 ft (3.1 m) where the room or area in which the hydrogen system is installed is protected by a listed detection system per Article 500.7(K) of NFPA 70, National Electrical Code, and the detection system shuts down the fuel supply in the event of a leak that results in a concentration that exceeds 25 percent of the LFL.
   b. Emergency shutoff valves shall be provided in accordance with 63.3.3.1.11.
5. A distance of 50 ft (15 m) from other flammable gas storage
6. Protected against damage in accordance with the provisions of 63.3.1.9.3.

63.3.6.3.2 Systems Installed in One Room.

63.3.6.3.2.1 More than one system of 3500 scf (99 Nm$^3$) or less shall be permitted to be installed in the same room or area, provided the systems are separated by at least 50 ft (15 m) or a full-height fire-resistive partition having a minimum fire resistance rating of 2 hours is located between the systems. [55: 7.6.3.2.1]

63.3.6.3.2.2 The separation distance between multiple systems of 3500 scf (99 Nm$^3$) or less shall be permitted to be reduced to 25 ft (7.6 m) in buildings where the space between storage areas is free of combustible materials and protected with a sprinkler system designed for Extra Hazard, Group 1 in accordance with the requirements of Section 6.10 of NFPA 55. [55: 7.6.3.2.2]

63.3.6.3.2.3 The required separation distance between individual portable systems in the process of being filled or serviced in facilities associated with the manufacture or distribution of hydrogen and its mixtures shall not be limited by 63.3.6.3.2.1 or 63.3.6.3.2.2 when such facilities are provided with Protection Level 2 controls and the applicable requirements of Chapters 1 through 7 of NFPA 55. [55: 7.6.3.2.3]

Submitter Information Verification

Submitter Full Name: Kristin Bigda
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Fri Oct 25 14:29:56 EDT 2013

Committee Statement
Committee Statement: Extract update.

Response Message:
63.4.2.4.6.2 Portable Containers with Volume Less Than 2.0 $\text{ft}^3$ (0.057 $\text{m}^3$).

63.4.2.4.6.2.1 The arrangement of the discharge from pressure relief devices from DOT-specified containers with an internal water volume of 2.0 $\text{ft}^3$ (0.057 $\text{m}^3$) or less shall be incorporated in the design of the container. [55: 8.2.4.6.2.1]

63.4.2.4.6.2.2 Additional safeguards regarding placement or arrangement shall not be required. [55: 8.2.4.6.2.2]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Mon Jul 15 12:57:41 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Mon Jul 15 11:01:58 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
Cleaning and Purging of Gas Piping Systems.

Cleaning and purging of piping systems shall be in accordance with 63.3.1.19. [55: 8.14.1.5]

Submitter Information Verification

Submitter Full Name: Kristin Bigda
Organization: National Fire Protection Assoc
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Fri Oct 25 15:50:21 EDT 2013

Committee Statement

Response Message:
63.5 Bulk Oxygen Systems.

63.5.1 Bulk oxygen systems shall comply with Chapter 9 of NFPA 55.

63.5.2 Cleaning and purging of piping systems shall be in accordance with 63.3.1.19 [55: 9.4.1.9].

63.5.3 Cleaning of oxygen systems used in medical gas service shall be in accordance with NFPA 99, Health Care Facilities Code. (See also 9.4.3.1 of NFPA 55) [55: 9.4.1.9.1].

Submitter Information Verification

Submitter Full Name: Kristin Bigda
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Fri Oct 25 16:02:07 EDT 2013

Committee Statement

Response Message:
63.6 Bulk Gaseous Hydrogen Systems.

Bulk hydrogen compressed gas systems shall comply with NFPA 2, Hydrogen Technologies Code, and Chapter 10 of NFPA 55.

63.6.1
Bulk hydrogen compressed gas systems shall comply with NFPA 2, Hydrogen Technologies Code, and Chapter 10 of NFPA 55.

63.6.2
Cleaning and purging of piping systems shall be in accordance with 63.3.1.19. [55: 10.2.3.2]
63.7 Bulk Liquefied Hydrogen Systems.

Bulk liquefied hydrogen systems shall comply with NFPA 2, Hydrogen Technologies Code, and Chapter 11 of NFPA 55.

63.7.1 Bulk liquefied hydrogen systems shall comply with NFPA 2, Hydrogen Technologies Code, and Chapter 11 of NFPA 55.

63.7.2 Cleaning and purging of piping systems shall be in accordance with 63.3.1.19. [55: 11.2.3.9]

Submitter Information Verification

Submitter Full Name: Kristin Bigda
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Fri Oct 25 16:40:32 EDT 2013

Committee Statement


Response Message:
63.8 Gas Generation Systems.
Gas generation systems shall comply with NFPA 2, Hydrogen Technologies Code, and Chapter 12 of NFPA 55.
63.8.1 General.
Gas generation systems shall comply with NFPA 2, Hydrogen Technologies Code, and Chapter 12 of NFPA 55.
63.8.2 Process purging and vents shall conform to the following:

1. Pressure equipment and piping intended to be purged, pressure regulators, relief valves, and other potential sources of combustible gas shall be vented to the outside of the building in accordance with the applicable requirements of 63.2.15 or 63.3.1.19.

2. The vent shall be designed to prevent entry of water or foreign objects.

3. The vent gas shall be directed so as to not create additional hazards to the building openings, such as windows, doors, or HVAC intakes.

Submitter Information Verification

Submitter Full Name: Kristin Bigda
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Fri Oct 25 16:56:46 EDT 2013

Committee Statement

Response Message:
63.10 Storage, Handling, and Use of Ethylene Oxide for Sterilization and Fumigation.

Storage, handling, and use of ethylene oxide for sterilization and fumigation shall comply with Chapter 14 of NFPA 55.

63.10.1 General.
Storage, handling, and use of ethylene oxide for sterilization and fumigation shall comply with Chapter 14 of NFPA 55.

63.10.2 Cleaning and Purging of Gas Piping Systems.

63.10.2.1 Cleaning and purging of piping systems shall be in accordance with NFPA 55: 14.4.1.3

63.10.2.2 Piping and valves that have been used to transport ethylene oxide to or from a sterilizer to the emission control or release point shall be drained and purged in accordance with NFPA 55: 14.4.3.1 prior to dismantling.

Submitter Information Verification

Submitter Full Name: Kristin Bigda
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Fri Oct 25 16:59:38 EDT 2013

Committee Statement

Response Message:
65.10.3.1.1
The requirements of this chapter shall not apply to permanent CFRS facilities and Class A and Class B stores where the consumer fireworks are in packages, there are no quantities of aerial devices meeting the descriptions in C.3.1.2, of NFPA 1124, and the total quantity of consumer fireworks on hand does not exceed 125 lb (net) [56.8 kg] of pyrotechnic composition or, in a building protected throughout with an approved automatic sprinkler system installed in accordance with NFPA 13, Standard for the Installation of Sprinkler Systems, 250 lb (net) [113.6 kg] of pyrotechnic composition.

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Fri Aug 23 11:46:44 EDT 2013

Committee Statement

Committee Statement: Extract update - incorporates TIA 13-2 on NFPA 1124.
Response Message:
The requirements of this chapter shall not apply to temporary CFRS facilities and Class C stores where the consumer fireworks are in packages and where the total quantity of consumer fireworks on hand does not exceed 125 lb (net) [56.8 kg] of pyrotechnic composition or, in a building protected throughout with an approved automatic sprinkler system installed in accordance with NFPA 13, *Standard for the Installation of Sprinkler Systems*, 250 lb (net) [113.6 kg] of pyrotechnic composition, except as specified in 65.10.3.1.2.1. [1124:7.3.1.2]

Submitter Information Verification

Submitter Full Name: Gregory Harrington  
Organization: National Fire Protection Assoc  
Street Address:  
City:  
State:  
Zip:  
Submittal Date: Fri Aug 23 11:48:52 EDT 2013

Committee Statement

Committee Statement: Extract update - incorporates TIA 13-2 on NFPA 1124.  
Response Message:
65.10.3.1.2.1
Where the quantity of consumer fireworks on hand includes any quantity of aerial devices meeting the
descriptions in C.3.1.2 of NFPA 1124 in any quantity not exceeding the quantities specified in 65.10.3.1.2,
temporary CFRS facilities and Class C stores shall only be required to comply with the following sections
as applicable:

(1) 65.10.2.3 for mercantile occupancies per NFPA 101
(2) 65.10.3.8 for portable fire extinguishers
(3) 65.10.3.10.2 for No Smoking signs
(4) 65.10.3.14.1.1 for minimum number of exits
(5) 65.10.3.14.2 for egress travel distance
(6) 65.10.3.14.4.2.4 for dead end aisles
(7) 65.10.3.14.5 for doors and doorways
(8) 65.10.3.15.4.1 for covered fuses
(9) 65.10.3.15.5 for aerial devices (CFRS facilities)
(10) 65.10.3.16 for electrical equipment
(11) 65.10.3.17 for heating equipment
(12) 65.10.3.19 for operations
(13) 65.10.3.20 for housekeeping
(14) 65.10.3.21 for training
(15) 65.10.3.22 for under the influence
(16) 65.10.4.6.3 for fireworks discharge
(17) 65.10.4.9.3 for cooking equipment
(18) 65.10.5.1.2 for consumer fireworks in stores
(19) 65.10.6 for stands

[1124:7.3.1.2.1]
65.10.3.6*

An automatic sprinkler system designed and installed in accordance with Section 13.3 and NFPA 13 shall be provided throughout permanent CFRS facilities and stores in which CFRS are conducted in the following buildings: CFRS facilities and stores shall be limited to the following sizes:

1. New buildings greater than 3000 ft$^2$ $(278.7 \text{ m}^2)$ in area. New permanent CFRS facilities and stores in which CFRS are conducted shall be no greater than 3000 ft$^2$ $(278.7 \text{ m}^2)$ in area.

2. Existing buildings permanent CFRS facilities and stores in which CFRS are conducted shall be no greater than 7500 ft$^2$ $(694.68 \text{ m}^2)$ in area [1124:7.3.6]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
City:
State:
Street Address:
Zip:
Submittal Date: Fri Aug 23 11:52:09 EDT 2013

Committee Statement

Committee Statement: Extract update - incorporates TIA 13-2 on NFPA 1124.
Response Message:
Storage rooms containing consumer fireworks in a new permanent CFRS facility or store shall be protected with an automatic sprinkler system installed in accordance with NFPA 13 - Standard for the Installation of Sprinkler Systems, and separated from the retail sales area by a fire barrier having a fire resistance rating of not less than 1 hour to 2 hours. [1124:7.3.7]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Fri Aug 23 11:55:23 EDT 2013

Committee Statement

Committee Statement: Extract update - incorporates TIA 13-2 on NFPA 1124.
Response Message:
Door and window openings in the fire barrier wall shall be protected by self-closing fire doors or fixed fire windows having a fire protection rating of not less than 1 hour 90 minutes and shall be installed in accordance with Section 12.4 and NFPA 80, *Standard for Fire Doors and Other Opening Protectives*. [1124:7.3.7.1]

Submitter Information Verification

Submitter Full Name: Gregory Harrington  
Organization: National Fire Protection Assoc  
Street Address:  
City:  
State:  
Zip:  
Submittal Date: Fri Aug 23 11:57:11 EDT 2013

Committee Statement

Committee Statement: Extract update - incorporates TIA 13-2 on NFPA 1124.
Response Message:
65.10.3.10.2
At least one sign that reads as follows, in letters at least 2 in. (51 mm) high on a contrasting background, shall be conspicuously posted at each entrance or within 10 ft (3.05 m) of every aisle directly serving the CFRS area in a store:

\[1124: 7.3.10.2\]

FIREWORKS — NO SMOKING

[1124: 7.3.10.2]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Mon Jul 22 12:22:55 EDT 2013

Committee Statement

Committee Statement: Editorial correction.
Response Message:
Second Revision No. 530-NFPA 1-2013 [Section No. 65.10.4.4.2]

65.10.4.4.2
Where the new CFRS facility is protected per Section 13.3 and NFPA 13, the fire resistance rating of the fire barrier required by 65.10.4.4.1 shall be permitted to be not less than 1 hour. [1124: 7.4.4.2]

Submitter Information Verification
Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Fri Aug 23 11:58:42 EDT 2013

Committee Statement
Committee Statement: Extract update - incorporates TIA 13-2 on NFPA 1124. Also renumber 65.10.4.4.3 accordingly.
Response Message:
Section 65.10.4.5.1 Automatic Sprinkler System Alarm.

Any waterflow alarm devices, if installed, shall be arranged to activate audible and visual alarms throughout the CFRS facility in accordance with Section 13.7 and NFPA 72. [1124: 7.4.5.1]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Fri Aug 23 12:01:21 EDT 2013

Committee Statement

Committee Statement: Extract update - incorporates TIA 13-2 on NFPA 1124.
Response Message:
65.10.4.6.3 Fireworks Discharge.
At least one sign that reads as follows, in letters at least 4 in. (102 mm) high on a contrasting background, shall be conspicuously posted on the exterior of each side of the CFRS facility: NO FIREWORKS DISCHARGE WITHIN 300 FEET

Submitter Information Verification
Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Mon Jul 22 13:52:38 EDT 2013

Committee Statement
Committee Statement: Editorial.
Response Message:
65.10.5.4
Flame breaks shall be allowed to be omitted in stores protected throughout with an automatic sprinkler system installed in accordance with Section 13.3 and NFPA 13—[1124:7.5.4]

Submitter Information Verification
Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Fri Aug 23 12:03:15 EDT 2013

Committee Statement
Committee Statement: Extract update - incorporates TIA 13-2 on NFPA 1124.
Response Message:
This chapter shall not apply to the following:

1. Any liquid that has a melting point of 100°F (37.8°C) or greater
2. Any liquid that does not meet the criteria for fluidity given in the definition of liquid in 3.3.30 of NFPA 30 and Chapter 4 of NFPA 30
3. Any cryogenic fluid or liquefied gas, as defined in 3.3.143.8
4. Any liquid that does not have a flash point, but which is capable of burning under certain conditions
5. Any aerosol product
6. Any mist, spray, or foam
7. Transportation of flammable and combustible liquids as governed by the U.S. Department of Transportation
8. Storage, handling, and use of fuel oil tanks and containers connected with oil-burning equipment
9. Use and installation of alcohol-based hand rub (ABHR) dispensers. (See 60.5.2)

Submitter Information Verification

Submitter Full Name: Kristin Bigda
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Sat Oct 26 16:51:37 EDT 2013

Committee Statement

Committee Statement: Text provides a pointer back to the new section on alcohol-based hand-rub dispensers. Pointing the code user to new 60.5.2 further clarifies the application of Chapter 66 and alcohol-based hand-rub dispensers.

Response Message:
66.4.1 Definitions Specific to Liquids.
For the purposes of this chapter, the terms in this subsection shall have the definitions given. [30:4.2]
66.4.1.1* Boiling Point.
(See 3.3.28.) [30:4.2.1]
66.4.1.2 Combustible Liquid.
Any liquid that has a closed-cup flash point at or above 100°F (37.8°C). See 3.3.172.1. Combustible liquids shall be classified according to 66.4.2.2.
66.4.1.3 Flammable Liquid.
See 3.3.172.2. Flammable liquids shall be classified according to 66.4.2.1. [30:4.3.1]
66.4.1.4* Flash Point.
See 3.3.137 3.3.1373.3.136. [30:4.2.4]
66.4.1.5 Liquid.
Any material that (1) has a fluidity greater than that of 300 penetration asphalt when tested in accordance with ASTM D 5, Standard Test Method for Penetration of Bituminous Materials, or (2) is a viscous substance for which a specific melting point cannot be determined but that is determined to be a liquid in accordance with ASTM D 4359, Standard Test for Determining Whether a Material is a Liquid or a Solid. [30:4.2.5] See 3.3.172.
66.4.1.6* Vapor Pressure.
See 3.3.280 3.3.2803.3.277. [30:4.2.6]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Mon Jul 22 16:13:35 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
Second Revision No. 172-NFPA 1-2013 [ Section No. 66.9.4.1 [Excluding any Sub-Sections] ]
Only the following approved containers, intermediate bulk containers, and portable tanks shall be used for Class I, Class II, and Class IIIA liquids:

1. Metal containers, metal intermediate bulk containers, and metal portable tanks meeting the requirements of and containing products authorized by the U.S. Department of Transportation Hazardous Materials Regulations in Title 49, Code of Federal Regulations, Parts 100–199, or by Part 6 of the UN Recommendations on the Transport of Dangerous Goods.

2. Plastic or metal consumer-use containers meeting the requirements of and used within the scope of, one or more of the following specifications:
   a. ASTM F 852, Standard Specification for Portable Gasoline Containers for Consumer Use
   b. ASTM F 976, Standard Specification for Portable Kerosene and Diesel Containers for Consumer Use
   c. ANSI/UL 30, Standard for Metal Safety Cans
   d. ANSI/UL 1313, Standard for Nonmetallic Safety Cans for Petroleum Products
   e. FM Global, Approval Standard for Safety Containers and Filling, Supply, and Disposal Containers — Class Number 6051 and 6052

3. Nonmetallic or metallic commercial/industrial safety cans meeting the requirements of, and used within the scope of, one or more of the following specifications:
   a. ANSI/UL 30, Standard for Metal Safety Cans
   b. ANSI/UL 1313, Standard for Nonmetallic Safety Cans for Petroleum Products
   c. FM Global, Approval Standard for Safety Containers and Filling, Supply, and Disposal Containers — Class Number 6051 and 6052

4. Plastic containers that meet requirements set by and contain products authorized by the following:
   b. Items 256 or 258 of the National Motor Freight Classification (NMFC) for liquids that are not classified as hazardous by the U.S. Department of Transportation Hazardous Materials Regulations in Title 49, Code of Federal Regulations, Parts 100–199, or by Part 6 of the UN publication Recommendations on the Transport of Dangerous Goods.

5. Fiber drums that meet the following:
   a. Requirements of Items 294 and 296 of the National Motor Freight Classification (NMFC), or Rule 51 of the Uniform Freight Classification (UFC), for Types 2A, 3A, 3B-H, 3B-L, or 4A
   b. Requirements of, and containing liquid products authorized by, either the U.S. Department of Transportation Hazardous Materials Regulations in Title 49, Code of Federal Regulations, Chapter I, or by U.S. Department of Transportation exemption.

6. Rigid nonmetallic intermediate bulk containers that meet requirements set by and contain products authorized by the following:
   b. The National Motor Freight Classification (NMFC), or the International Safe Transit Association for liquids that are not classified as hazardous by the U.S. Department of Transportation Hazardous Materials Regulations in Title 49, Code of Federal Regulations, Parts 100–199, or by Part 6 of the UN publication Recommendations on the Transport of Dangerous Goods.

7. Glass containers up to the capacity limits stated in Table 66.9.4.3 and in accordance with U.S. Department of Transportation Hazardous Materials Regulations in Title 49, Code of Federal Regulations, Parts 100–199.
Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Mon Jul 22 16:30:40 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
Storage cabinets shall include the following marking: [30: 9.5.5]

WARNING:
FLAMMABLE
KEEP FIRE AWAY [30: 9.5.5]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Mon Jul 22 16:38:15 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
66.9.7.2
Control areas shall be separated from each other by fire barriers in accordance with Table 66.9.7.2.

Table 66.9.7.2 Design and Number of Control Areas

<table>
<thead>
<tr>
<th>Floor Level</th>
<th>Maximum Allowable Quantity per Control Area (percent)*</th>
<th>Number of Control Areas per Floor</th>
<th>Fire Resistance Rating for Fire Barriers (hr)†</th>
</tr>
</thead>
<tbody>
<tr>
<td>Above grade</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt;9</td>
<td>5</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>7–9</td>
<td>5</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>4–6</td>
<td>12.5</td>
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<td>2</td>
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<tr>
<td>3</td>
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<td>2</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>75</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>1</td>
<td>100</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Below grade</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>75</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>50</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Lower than 2</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

N/A: Not allowed. permitted. N/A: Not applicable.

* Percentages represent the maximum allowable quantities, MAQ, per control area shown in Table 66.9.6.1, with all of the increases permitted in the footnotes of that table.

† Fire barriers are required to include floors and walls, as necessary, to provide a complete separation from other control areas. [5000: Table 34.2.5.1.1]

Submitter Information Verification

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Committee Statement: Extract update.
Response Message:
66.9.17.3

Flammable The following shall apply where oxidizers are in segregated storage with flammable and combustible liquids shall be separated from oxidizers by at least 25 ft (7.6 m). [400: 15.2.12.13.1]:

(1) The oxidizer containers and flammable and combustible liquid containers shall be separated by at least 25 ft (7.6 m).

(2) The separation shall be maintained by dikes, drains, or floor slopes to prevent flammable liquid leakage from encroaching on the separation. [400: 15.2.12.13.1]
66.16.5.1.10
For the purposes of 66.16.5, the following shall apply to the in-rack sprinkler design layouts specified in Table 66.16.5.2.1 through Table 66.16.5.2.12:

(1) Layout 1, as referenced in Table 66.16.5.2.1, shall mean one line of in-rack sprinklers 8 ft (2.4 m) above the floor in the longitudinal flue space, with sprinklers spaced not more than 10 ft (3 m) on center.

(2) Layout 2, as referenced in Table 66.16.5.2.1, shall mean one line of in-rack sprinklers 6 ft (1.8 m) above the floor and one line of in-rack sprinklers 12 ft (3.6 m) above the floor in the longitudinal flue space, with sprinklers spaced not more than 10 ft (3 m) on center. Sprinklers shall be staggered vertically.

(3) Layout 3, as referenced in Table 66.16.5.2.1 and Table 66.16.5.2.1, shall mean one line of in-rack sprinklers in the longitudinal flue space, at every storage level above the floor except above the top tier, with sprinklers spaced not more than 10 ft (3 m) on center. Sprinklers shall be staggered vertically, where more than one level of in-rack sprinklers is installed.

(4) Layout 4, as referenced in Table 66.16.5.2.1 and Table 66.16.5.2.3, shall mean one line of in-rack sprinklers in the longitudinal flue space at every other storage level, except above the top tier, beginning above the first storage level, with sprinklers spaced not more than 10 ft (3 m) on center. Sprinklers shall be staggered vertically where more than one level of in-rack sprinklers is installed.

(5) Layout 5, as referenced in Table 66.16.5.2.1, shall mean one line of in-rack sprinklers in the longitudinal flue space at every storage level above the floor except above the top tier and face sprinklers at the first storage level at each rack upright. In-rack sprinklers shall be spaced not more than 9 ft (2.7 m) on center and shall be staggered vertically, where more than one level of in-rack sprinklers is installed.

(6) Layout 6, as referenced in Table 66.16.5.2.1, shall mean one line of in-rack sprinklers in the longitudinal flue space at every other storage level above the first storage level except above the top tier and face sprinklers at the first storage level at each rack upright. In-rack sprinklers shall be spaced not more than 10 ft (3 m) on center and shall be staggered vertically, where more than one level of in-rack sprinklers is installed.

(7) Layout 7, as referenced in Table 66.16.5.2.8, shall be as shown in Figure 66.16.6.4(a).

(8) Layout 8, as referenced in Table 66.16.5.2.8, shall be as shown in Figure 66.16.6.4(b) or Figure 66.16.6.4(c).

(9) Layout 9, as referenced in Table 66.16.5.2.8, shall be as shown in Figure 66.16.6.4(d) or Figure 66.16.6.4(e).

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Committee Statement
<table>
<thead>
<tr>
<th>Committee Statement:</th>
<th>Extract update.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Response Message:</td>
<td></td>
</tr>
</tbody>
</table>
Table 66.16.5.2.1 shall apply to the following:

1. Automatic sprinkler protection
2. Single- or double-row rack storage
3. Nonmiscible liquids and miscible liquids with concentration of flammable or combustible component greater than 50 percent by volume
4. Metal containers, metal portable tanks, metal intermediate bulk containers
5. Relieving- or nonrelieving-style containers

Table 66.16.5.2.1

Design Criteria for Sprinkler Protection of Single- and Double-Row Rack Storage of Liquids in Metal Containers, Portable Tanks, and IBCs

<table>
<thead>
<tr>
<th>Container Style and Capacity (gal)</th>
<th>Maximum Storage Height (ft)</th>
<th>Maximum Ceiling Height (ft)</th>
<th>Ceiling Sprinkler Protection</th>
<th>In-Rack Sprinkler Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Sprinkler Type</td>
<td>Sprinkler Response</td>
</tr>
<tr>
<td>NONRELIEVING-STYLE CONTAINERS — LIQUID CLASSES IB, IC, II, IIIA</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤ 5 gal</td>
<td>16</td>
<td>30</td>
<td>K ≥ 11.2, QR (HT)</td>
<td>0.60</td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>30</td>
<td>K ≥ 11.2, SR or QR (HT)</td>
<td>0.60</td>
</tr>
<tr>
<td>≤ 5 gal</td>
<td>25</td>
<td>30</td>
<td>K ≥ 8.0, SR or QR (HT)</td>
<td>0.30</td>
</tr>
<tr>
<td>&gt; 5 and ≤ 60 gal</td>
<td>25</td>
<td>30</td>
<td>K ≥ 11.2, SR (HT)</td>
<td>0.40</td>
</tr>
<tr>
<td>NONRELIEVING-STYLE CONTAINERS — LIQUID CLASS IIIB</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤ 5 gal</td>
<td>40</td>
<td>50</td>
<td>K ≥ 8.0, SR or QR (HT)</td>
<td>0.30</td>
</tr>
<tr>
<td>&gt; 5 and ≤ 60 gal</td>
<td>40</td>
<td>50</td>
<td>K ≥ 8.0, SR (HT)</td>
<td>0.30</td>
</tr>
<tr>
<td>RELIEVING-STYLE CONTAINERS — LIQUID CLASSES IB, IC, II, IIIA</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤ 5 gal</td>
<td>14</td>
<td>18</td>
<td>K ≥ 11.2, pendent only</td>
<td>0.65</td>
</tr>
<tr>
<td></td>
<td>25</td>
<td>30</td>
<td>K ≥ 8.0, SR or QR (HT)</td>
<td>0.30</td>
</tr>
<tr>
<td>&gt; 5 and ≤ 60 gal</td>
<td>25</td>
<td>30</td>
<td>K ≥ 11.2, SR (HT)</td>
<td>0.60</td>
</tr>
<tr>
<td>Portable tanks and IBCs</td>
<td>25</td>
<td>30</td>
<td>K ≥ 11.2, SR (HT)</td>
<td>0.60</td>
</tr>
<tr>
<td>RELIEVING-STYLE CONTAINERS — LIQUID CLASS IIIB</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤ 5 gal</td>
<td>40</td>
<td>50</td>
<td>K ≥ 8.0, SR or QR (HT)</td>
<td>0.30</td>
</tr>
<tr>
<td>&gt; 5 and ≤ 60 gal</td>
<td>40</td>
<td>50</td>
<td>K ≥ 8.0, SR (HT)</td>
<td>0.30</td>
</tr>
<tr>
<td>Portable tanks and IBCs</td>
<td>40</td>
<td>50</td>
<td>K ≥ 8.0, SR (HT)</td>
<td>0.30</td>
</tr>
</tbody>
</table>

For SI units, 1 gal = 3.8 L, 1 ft = 0.3 m, 1 ft² = 0.09 m², 1 gpm/ft² = 40.7 L/min/m² = 40.7 mm/min.
SR: Standard response sprinkler. QR: Quick response sprinkler. OT: Ordinary temperature. HT: High temperature. For definitions of abbreviations used in the Response column, see 66.16.5.1.9(4). See also 66.16.5.1.9(5).

(1) In-rack sprinkler design shall be based on 6 most hydraulically remote sprinklers in each of upper three levels or on 8 most hydraulically remote sprinklers, if only one level, the following:

(a) Where one level of in-rack sprinklers is installed, the design shall include the 8 most hydraulically remote sprinklers

(b) Where two levels of in-rack sprinklers are installed, the design shall include the 6 most hydraulically remote sprinklers on each level.

(c) Where three or more levels of in-rack sprinklers are installed, the design shall include the 6 most hydraulically remote sprinklers on the top three levels.

(2) Protection for uncartoned or case-cut nonsolid shelf display up to 6.5 ft (2 m) and storage above in pallets on in racking, and stored on shelf materials, including open wire mesh, or 2 in. × 6 in. (50 mm × 150 mm) wooden slats, spaced a minimum of 2 in. (50 mm) apart.

(3) For K=8.0 and larger ceiling sprinklers, increase ceiling density to 0.60 if more than one level of storage exists above the top level of in-rack sprinklers.

(4) Double-row racks limited to maximum 6 ft (1.8 m) width.

(5) For K=8.0 and larger ceiling sprinklers, increase ceiling density to 0.60 over 2000 ft² if more than one level of storage exists above the top level of in-rack sprinklers.

(6) Reduce in-rack sprinkler spacing to maximum 9 ft (2.7 m) centers.

(7) The minimum in-rack discharge pressure shall not be less than 10 psi.

[30:Table 16.5.2.1]

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Response Message:
Table 66.16.5.2.3 shall apply to the following:

(1) Foam water sprinkler protection

(2) Single- or double-row rack storage

(3) Nonmiscible liquids and miscible liquids with concentration of flammable or combustible component greater than 50 percent by volume

(4) Metal containers, metal portable tanks, metal intermediate bulk containers

(5) Relieving- or nonrelieving-style containers

Table 66.16.5.2.3 Design Criteria for Foam-Water Sprinkler Protection of Single- or Double-Row Rack Storage of Liquids in Metal Containers, Portable Tanks, and IBCs

<table>
<thead>
<tr>
<th>Container Style and Capacity (gal)</th>
<th>Maximum Storage Height (ft)</th>
<th>Maximum Ceiling Height (ft)</th>
<th>Ceiling Sprinkler Protection</th>
<th>In-Rack Sprinkler Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Sprinkler Design</td>
<td>Discharge Flow (gpm)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Sprinkler Type</td>
<td>Response</td>
</tr>
<tr>
<td>NONRELIEVING-STYLE CONTAINERS — LIQUID CLASSES IB, IC, II, IIIA</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤5</td>
<td>25</td>
<td>30</td>
<td>K≥8.0 SR or QR (HT)</td>
<td>0.30</td>
</tr>
<tr>
<td>&gt;5 and ≤60</td>
<td>25</td>
<td>30</td>
<td>K≥8.0 SR (HT)</td>
<td>0.30</td>
</tr>
<tr>
<td>NONRELIEVING-STYLE CONTAINERS — LIQUID CLASS IIIB</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤60</td>
<td>40</td>
<td>50</td>
<td>K≥8.0 SR (HT)</td>
<td>0.30</td>
</tr>
<tr>
<td>RELIEVING-STYLE CONTAINERS — LIQUID CLASSES IB, IC, II, IIIA</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤5</td>
<td>25</td>
<td>30</td>
<td>K≥8.0 SR or QR (HT)</td>
<td>0.30</td>
</tr>
<tr>
<td>&gt;5 and ≤60, portable tanks and IBCs</td>
<td>25</td>
<td>30</td>
<td>K≥8.0 SR (HT)</td>
<td>0.30</td>
</tr>
<tr>
<td>RELIEVING-STYLE CONTAINERS — LIQUID CLASS IIIB</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤60</td>
<td>40</td>
<td>50</td>
<td>K≥8.0 SR (HT)</td>
<td>0.30</td>
</tr>
</tbody>
</table>

For SI units, 1 gal = 3.8 L, 1 ft = 0.3 m, 1 ft² = 0.09 m², 1 gpm/ft² = 40.7 L/min/m² = 40.7 mm/min.

QR: Quick response sprinkler. SR: Standard response sprinkler. OT: Ordinary temperature. HT: High temperature. For definitions of abbreviations used in the Response column, see 66.16.5.1.9(4). See also 66.16.5.1.9(5).

Notes:

(1) In-rack sprinkler design based on the 6 most hydraulically remote sprinklers in each of the upper three levels.

(2) Design area can be reduced to 1500 ft² when using a pre-primed foam-water system installed in accordance with NFPA 16, Standard for the Installation of Foam-Water Sprinkler and Foam-Water Spray Systems, and maintained according to NFPA 25, Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems.
(3) Design area can be reduced to 2000 ft\(^2\) when using a pre-primed foam-water system installed in accordance with NFPA 16 and maintained according to NFPA 25.

(4) In-rack sprinkler hydraulic design can be reduced to three sprinklers operating per level, with three levels operating simultaneously, when using a pre-primed foam-water sprinkler system designed in accordance with NFPA 16 and maintained in accordance with NFPA 25.

(5) The minimum in-rack sprinkler discharge pressure shall not be less than a gauge pressure of 10 psi.

[30: Table 16.5.2.3]

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Response Message:
Table 66.16.5.2.8 shall apply to the following:

1) Automatic sprinkler protection
2) Single- or double-row rack storage or palletized storage
3) Nonmiscible liquids and miscible liquids with concentration of flammable or combustible component greater than 50 percent by volume
4) Relieving-style metal containers

**Table 66.16.5.2.8: Design Criteria for Single-Row Rack, Double-Row Rack, and Palletized Storage of Liquids in Relieving-Style Metal Containers**

<table>
<thead>
<tr>
<th>Container Style and Capacity (gal)</th>
<th>Maximum Storage Height (ft)</th>
<th>Maximum Ceiling Height (ft)</th>
<th>Ceiling Sprinkler Protection</th>
<th>In-Rack Sprinkler Protection</th>
<th>Fire Test Ref. [See NFPA 30: Table D.2(h)]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sprinkler Type</td>
<td>Sprinkler Type</td>
<td>Minimum Discharge Flow</td>
<td>Type</td>
<td>Response</td>
<td>Notes</td>
</tr>
<tr>
<td>Pendent ESFR K≥14.0 (OT)</td>
<td>12 @ 50 psi</td>
<td>K = 8.0</td>
<td>QR (OT)</td>
<td>QR (OT)</td>
<td>36 gpm</td>
</tr>
<tr>
<td>Pendent ESFR K≥25.0 (OT)</td>
<td>12 @ 25 psi</td>
<td>No in-rack sprinklers required</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**RACK STORAGE with MAXIMUM 6 ft RACK DEPTH and MINIMUM 7.5 ft AISLE WIDTH**

| ≤5, cartoned or uncartoned | 14 | 24 | | | | |
|----------------------------|----|----| | | | |
| ≤5, cartoned only          | 14 | 24 | | | | |

**RACK STORAGE with MAXIMUM 9 ft RACK DEPTH and 8 ft MINIMUM AISLE WIDTH**

| ≤1, cartoned only | 20 | 30 | | | | |
|≤1, cartoned only | 25 | 30 | | | | |
|≤5, cartoned or uncartoned | 25 | 30 | | | | |

**LIQUID CLASSES IB, IC, II, IIIA, IIIB PALLETIZED STORAGE with MINIMUM 7.5 ft AISLE WIDTH**

| ≤1, cartoned only | 8 | 30 | | | | |
|≤5, cartoned or uncartoned | 12 | 30 | | | | |
For SI units, 1 gal = 3.8 L, 1 ft = 0.3 m, 1 psi = 6.9 kPa.

For definitions of abbreviations used in the Response column, see 16.5.1.9(4). See also 16.5.1.9(5).

Notes:

(1) The in-rack sprinkler water demand shall be based on the simultaneous operation of the most hydraulically remote sprinklers as follows:
   (a) Seven sprinklers where only one level of in-rack sprinklers is installed.
   (b) Fourteen sprinklers (seven on each of the two top levels) where more than one level of in-rack sprinklers is installed.

(2) The in-rack sprinkler water demand should be balanced with the ceiling sprinkler water demand at their point of connection.

(3) One-gallon and 1-quart containers are not required to be relieving style.

(4) Provide minimum 3 in. transverse flue at rack uprights.

(5) For Class IIIB liquids, see also Table 16.5.2.5.

(6) Racks can have open-mesh wire intermediate shelving on lower levels.

(7) The minimum in-rack sprinkler discharge pressure shall not be less than a gauge pressure of 10 psi.

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Response Message:
Second Revision No. 255-NFPA 1-2013 [ Section No. 66.16.5.2.9 ]

66.16.5.2.9

Table 66.16.5.2.9 shall apply to the following:

(1) Automatic sprinkler protection
(2) Palletized storage
(3) Class II and Class III nonmiscible and Class II and Class III miscible liquids
(4) Listed and labeled rigid nonmetallic intermediate bulk containers

[30:16.5.2.9]

Table 66.16.5.2.9 Design Criteria for Sprinkler Protection of Palletized Storage of Class II and Class III Liquids in Listed and Labeled Rigid Nonmetallic IBCs

<table>
<thead>
<tr>
<th>Maximum Capacity (gal)</th>
<th>Maximum Storage Height</th>
<th>Maximum Ceiling Height (ft)</th>
<th>Sprinkler Density (gpm/ft²)</th>
<th>Design Area (ft²)</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>793</td>
<td>1-high</td>
<td>30</td>
<td>Kz=11.2 SR (HT)</td>
<td>0.45</td>
<td>1, 2, 4</td>
</tr>
<tr>
<td>793</td>
<td>2-high</td>
<td>30</td>
<td>Kz=11.2 SR (HT)</td>
<td>0.60</td>
<td>1, 2, 3, 4</td>
</tr>
</tbody>
</table>

For SI units, 1 gal = 3.8 L, 1 ft = 0.3 m, 1 gpm/ft² = 40.7 L/min/m² = 40.7 mm/min, 1 ft² = 0.9 m².

For definitions of abbreviations used in the Response column, see 66.16.5.1.9(4). See also 66.16.5.1.9(5).

Notes:

(1) Foam-water sprinkler protection shall be permitted to be substituted for water sprinkler protection, provided the same design criteria are used.

(2) Rigid nonmetallic intermediate bulk containers shall be listed and labeled in accordance with UL 2368, Standard for Fire Exposure Testing of Intermediate Bulk Containers for Flammable and Combustible Liquids; FM Class 6020, Approval Standard for Intermediate Bulk Containers; or an equivalent test procedure.

(3) The sprinkler operating gauge pressure shall be a minimum 30 psi (207 kPa).

[30: Table 16.5.2.9]

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Response Message:
66.16.5.2.10
Table 66.16.5.2.10 shall apply to the following:

1. Automatic sprinkler protection
2. Single- or double-row rack storage
3. Class II and Class III nonmiscible and Class II and Class III miscible liquids
4. Listed and labeled rigid nonmetallic intermediate bulk containers

<table>
<thead>
<tr>
<th>Maximum Capacity (gal)</th>
<th>Maximum Storage Height (ft)</th>
<th>Maximum Ceiling Height (ft)</th>
<th>Ceiling Sprinkler Protection</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>793</td>
<td>25</td>
<td>30</td>
<td>Standard spray</td>
<td></td>
</tr>
</tbody>
</table>

For SI units, 1 gal = 3.8 L, 1 ft = 0.3 m.

Notes:
1. Rigid nonmetallic intermediate bulk containers are listed and labeled in accordance with UL 2368, Standard for Fire Exposure Testing of Intermediate Bulk Containers for Flammable and Combustible Liquids, or an equivalent test procedure.
2. Maximum rack depth is 9 ft (2.7 m).
3. Minimum aisle width is 8 ft (2.4 m).

[30: Table 16.5.2.10]
Second Revision No. 178-NFPA 1-2013 [ Section No. 66.16.5.2.12 ]

66.16.5.2.12
Table 66.16.5.2.12 shall apply to the following:

(1) Automatic sprinkler protection
(2) Palletized or stacked storage
(3) Miscible liquids with concentration of flammable or combustible components no greater than 80 percent by volume
(4) Glass or plastic containers

[30:16.5.2.12]
Table 66.16.5.2.12 Design Criteria for Sprinkler Protection of Palletized or Stacked Storage of Miscible Liquids in Glass or Plastic Containers

<table>
<thead>
<tr>
<th>Container Style and Capacity</th>
<th>Maximum Storage Height (ft)</th>
<th>Maximum Ceiling Height (ft)</th>
<th>Ceiling Sprinkler Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤ 8 oz</td>
<td>5</td>
<td>38</td>
<td>K ≥ 11.2 QR (OT) 0.47 2000 — S64 P60 and P61</td>
</tr>
</tbody>
</table>

For SI units, 1 gal = 3.8 L, 1 ft = 0.3 m, 1 ft² = 0.09 m², 1 gpm/ft² = 40.7 L/min/m² = 40.7 mm/min.

For definitions of abbreviations used in the Response column, see 66.16.5.1.9(4). { See also 66.16.5.1.9(5). } [30: Table 16.5.2.12]

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Response Message:
Barriers shall not be required for liquids with closed-cup flash points of 450°F (230°C) or greater. If barriers are omitted, the following shall apply:

1. Ceiling sprinkler protection shall provide a minimum density of 0.3 gpm/ft² over the most hydraulically remote 2000 ft² (12 mm/min over 180 m²) using ordinary temperature, standard-response sprinklers. Sprinklers shall have a nominal K-factor equal to or greater than 8.0. Intermediate-temperature sprinklers shall be used where ambient conditions require.

2. The ceiling sprinkler water demand and the in-rack water demand shall be balanced at their point of connection.

3. The sprinklers located at the rack face shall be staggered vertically.

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Response Message:
66.16.8.1
Containment or containment and drainage shall be provided in accordance with Figure 66.16.8.1, when protection systems are installed in accordance with the provisions of this section. [30:16.8.1]

Figure 66.16.8.1 Spill Containment and Liquid Spread Control for Protected Storage. [30:Figure 16.8.1]
66.17.4.3
The minimum distance of a processing vessel to a property line that is or can be built upon, including the opposite side of a public way; to the nearest side of a public way; or to the nearest important building on the same property shall be determined by one of the following:

(1) In accordance with Table 66.17.4.3

(2) Determined by, In accordance with, an engineering evaluation of the process, followed by application of sound fire protection and process engineering principles

Table 66.17.4.3 Location of Process Vessels with Respect to Property Lines, Public Ways, and the Nearest Important Building on the Same Property — Protection for Exposures Is Provided

<table>
<thead>
<tr>
<th>Vessel Maximum Operating Liquid Capacity (gal)</th>
<th>Stable Liquid Emergency Relief*</th>
<th>Unstable Liquid Emergency Relief*</th>
<th>Stable Liquid Emergency Relief*</th>
<th>Unstable Liquid Emergency Relief*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>From Property Line that Is or Can Be Built upon, Including Opposite Side of Public Way</td>
<td>From Nearest Side of Any Public Way or from Nearest Important Building on Same Property that Is Not an Integral Part of the Process</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Not Over 2.5 psi</td>
<td>Over 2.5 psi</td>
<td>Not Over 2.5 psi</td>
<td>Over 2.5 psi</td>
</tr>
<tr>
<td>275 or less</td>
<td>5</td>
<td>10 25</td>
<td>15 50</td>
<td>20 100</td>
</tr>
<tr>
<td>276 to 750</td>
<td>10</td>
<td>15 25</td>
<td>25 50</td>
<td>40 100</td>
</tr>
<tr>
<td>751 to 12,000</td>
<td>15</td>
<td>25</td>
<td>40 50</td>
<td>60 100</td>
</tr>
<tr>
<td>12,001 to 30,000</td>
<td>20</td>
<td>30</td>
<td>50</td>
<td>80 100</td>
</tr>
<tr>
<td>30,001 to 50,000</td>
<td>30</td>
<td>45</td>
<td>75</td>
<td>120</td>
</tr>
<tr>
<td>50,001 to 100,000</td>
<td>50</td>
<td>75</td>
<td>125</td>
<td>200</td>
</tr>
<tr>
<td>Over 100,000</td>
<td>80</td>
<td>120</td>
<td>200</td>
<td>300</td>
</tr>
</tbody>
</table>

For SI units, 1 gal = 3.8 L; 1 ft = 0.3 m; 1 psi = a gauge pressure of 6.9 kPa.

Note: Double all of above distances where protection for exposures is not provided.

*Gauge pressure. [30: Table 17.4.3]

66.17.4.3.1
Processing vessels used solely to process stable Class IIIB liquids shall be located in accordance with Table 22.4.1.6 of NFPA 30. [30: 17.4.3.1]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
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Submittal Date: Wed Jul 24 09:54:37 EDT 2013
Committee Statement

Committee Statement: Extract update.
Response Message:
66.18.4.4
Transfer of liquids among vessels, containers, tanks, and piping systems by means of air or inert gas pressure shall be permitted only under all of the following conditions:

(1) The vessels, containers, tanks, and piping systems shall be designed for such pressurized transfer and shall be capable of withstanding the anticipated operating pressure.

(2) Safety and operating controls, including pressure-relief devices, shall be provided to prevent overpressure of any part of the system.

(3) Only inert gas shall be used to transfer Class I liquids. Only inert gas shall be used to transfer Class II and Class III liquids that are heated above their flash points.

66.18.4.4.1
Dispensing of Class I liquids from a container by means of air shall be permitted under the following conditions:

(1) The pressure shall be generated by means of a listed hand-operated device.

(2) Pressure shall not exceed a gauge pressure of 6 psi (41 kPa) and pressure relief shall be provided.

(3) The container shall not exceed 119 gal (450 L) and shall be capable of withstanding the maximum pressure generated by the device.

(4) The device shall be bonded and grounded or shall be demonstrated as not being capable of generating a static charge under any operating condition.

(5) The material of construction of the device shall be compatible with the liquid dispensed.

Submitter Information Verification

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Street Address:
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Submittal Date: Wed Jul 24 10:03:43 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
66.19.2 Reserved Definitions Specific to Section 66.19.

66.19.2.1* Cooking Oil.
Where used in this chapter, cooking oil shall be defined as a Class IIIB combustible liquid. This definition shall apply to both fresh, or new, cooking oil and waste, or used, cooking oil. [30: 19.2.1]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
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Street Address:
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Submittal Date: Wed Jul 24 10:07:47 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
66.19.7 Cooking Oil Storage Tank Systems in Commercial Kitchens.

66.19.7.1 Scope.

66.19.7.1.1 This section shall apply to storage tank systems for cooking oil, as defined in 66.19.2.1, located in commercial kitchens where tank capacities are greater than 60 gal (227 L). [30: 19.7.1.1]

66.19.7.1.2 This section shall apply to both fresh and waste cooking oil storage tank systems. [30: 19.7.1.2]

66.19.7.1.3* Where there are conflicts between the requirements of this section and requirements of other sections of this code, the requirements of this section shall take precedence. [30: 19.7.1.3]

66.19.7.2 Design and Construction of Cooking Oil Storage Tanks.

66.19.7.2.1 Materials of Construction.

Tanks shall be constructed of materials of metallic or nonmetallic construction. [30: 19.7.2.1]

66.19.7.2.1.1 Tanks and their appurtenances shall be constructed of materials compatible with cooking oil. [30: 19.7.2.1.1]

66.19.7.2.1.2* For tanks storing waste cooking oil, the materials of construction of the tanks and their appurtenances shall be compatible with cooking oil at minimum temperatures of 140°F (60°C) continuous and 235°F (113°C) intermittent. [30: 19.7.2.1.2]

66.19.7.2.2 Design Standards.

66.19.7.2.2.1* Metallic cooking oil storage tanks shall be listed in accordance with ANSI/UL 142, Standard for Steel Aboveground Tanks for Flammable and Combustible Liquids, or ANSI/UL 80, Standard for Steel Tanks for Oil-Burner Fuels and Other Combustible Liquids. [30: 19.7.2.2.1]

66.19.7.2.2.2 Nonmetallic cooking oil storage tanks shall meet the following requirements:

1. Tanks shall be listed for use with cooking oil, unless otherwise approved.

2. Tanks shall not exceed 200 gal (757 L) per tank.

[30: 19.7.2.2.2]

66.19.7.2.3 Normal Venting.

66.19.7.2.3.1 The normal vent(s) shall be located above the maximum normal liquid level. [30: 19.7.2.3.1]

66.19.7.2.3.2 The normal vent shall be at least as large as the largest filling or withdrawal connection. [30: 19.7.2.3.2]

66.19.7.2.3.3 Where used, normal vents, including vent piping, that are smaller than 1.25 in. (32 mm) nominal inside diameter shall be tested to verify that internal tank pressures will remain below a gauge pressure of 0.5 psi (3.5 kPa) under maximum expected flow rates for tank filling and withdrawal. These tests shall be permitted to be conducted by a qualified outside agency or by the manufacturer, if certified by a qualified observer. [30: 19.7.2.3.3]

66.19.7.2.3.4* Normal vents shall be permitted to discharge inside the building. [30: 19.7.2.3.4]

66.19.7.2.4 Emergency Venting.

66.19.7.2.4.1 Cooking oil storage tanks shall be provided with emergency relief venting in accordance with Section 66.22. [30: 19.7.2.4.1]
66.19.7.2.4.2
For nonmetallic cooking oil storage tanks, emergency relief venting by form of construction shall be permitted. This shall include the low melting point of the material of construction of the tank. [30: 19.7.2.4.2]

66.19.7.2.4.3
For metallic cooking oil storage tanks, emergency relief venting by form of construction shall be prohibited. [30: 19.7.2.4.3]

66.19.7.2.4.4
Emergency vents shall be permitted to discharge inside the building. [30: 19.7.2.4.4]

66.19.7.2.5
Prevention of Overfilling of Cooking Oil Storage Tanks.

66.19.7.2.6
Tank Heating.

66.19.7.2.6.1
Electrical equipment used for heating cooking oil shall be listed to ANSI/UL 499, Standard for Electrical Heating Appliances, and shall comply with NFPA 70, National Electric Code. [30: 19.7.2.6.1]

66.19.7.2.6.2
Electrical equipment used for heating cooking oil shall comply with NFPA 70, National Electrical Code, and shall be equipped with automatic means to limit the temperature of the oil to less than 140°F (60°C). [30: 19.7.2.6.2]

66.19.7.2.6.3
Use of electrical immersion heaters in nonmetallic tanks shall be prohibited. [30: 19.7.2.6.3]

66.19.7.3
Tank Installation and Testing.

66.19.7.3.1
Location of Cooking Oil Storage Tanks.

66.19.7.3.1.1
Tanks shall be spaced at least 3 ft (0.9 m) away from any cooking appliance or any surface heated to a temperature above 140°F (60°C) continuous and at least 6 ft (1.8 m) away from any open flame. [30: 19.7.3.1.1]

66.19.7.3.1.2
Tanks shall not be installed under commercial kitchen ventilation hoods. [30: 19.7.3.1.2]

66.19.7.3.3
Tanks shall not be required to be separated from one another. [30: 19.7.3.3.1]

66.19.7.3.2
Foundations for and Anchoring of Cooking Oil Storage Tanks.

66.19.7.3.2.1
Tank supports shall be secured to the tank and to the floor to prevent the tank from tipping over. For a flat-bottom tank resting directly on the floor, the tank shall be secured to the floor to prevent the tank from tipping over. [30: 19.7.3.2.1]

66.19.7.3.2.2
In areas subject to earthquakes, tank supports, the foundation, and anchoring shall meet the requirements of the applicable building code for the specific seismic zone. Engineering evaluation by a qualified, impartial outside agency shall be an acceptable method of meeting this requirement. [30: 19.7.3.2.2]

66.19.7.3.2.3
Where a tank is located in areas subject to flooding, the method for anchoring the tank to the floor shall be capable of preventing the tank, either full or empty, from floating during a rise in water level up to the established maximum flood stage. Engineering evaluation by a qualified, impartial outside agency shall be an acceptable method of meeting this requirement. [30: 19.7.3.2.3]

66.19.7.3.3
Tank Openings Other than Vents.

66.19.7.3.3.1
Each connection to the tank below the normal liquid level through which liquid can normally flow shall be provided with an internal or external valve located as close as possible to the shell of the tank, in accordance with Section 66.22. [30: 19.7.3.3.1]
Connections to the tank above the normal liquid level through which liquid can normally flow shall not be required to have a valve, provided there exists a liquid-tight closure at the opposite end of the line. The liquid-tight closure shall be in the form of a valve, a plug, or a coupling or fitting with positive shutoff. [30: 19.7.3.3.2]

Field Testing.

As an alternate method to the testing requirements in Section 66.21, cooking oil storage tanks shall be tested for leaks at the time of installation by filling the tank with cooking oil to a liquid level above the highest tank seam or connection within the normal liquid level. Before the tank is placed in service, all leaks shall be corrected in an approved manner or the tank shall be replaced. [30: 19.7.3.4.1]

An approved listing mark on a cooking oil storage tank shall be considered to be evidence of compliance with tank testing requirements. [30: 19.7.3.4.2]

Identification for Emergency Responders.

A sign or marking that meets the requirements of NFPA 704, Standard System for the Identification of the Hazards of Materials for Emergency Response, or another approved system, shall be applied to each cooking oil storage tank in accordance with Section 66.21. Additional signage shall be applied to each tank identifying the contents of the tank as cooking oil, either fresh or waste. [30: 19.7.4.1]

In areas where tanks are located, no additional ventilation shall be required beyond that required for comfort ventilation and provided that all cooking equipment is provided with exhaust systems in accordance with NFPA 96, Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations. [30: 19.7.4.2]

If ventilation is not provided as specified in 66.19.7.4.2, then the tank shall be vented to another room inside the building that meets these requirements, or the tank shall be vented to the outside of the building. [30: 19.7.4.3]

Transfer Lines.

Transfer lines for fresh cooking oil shall be permitted to be constructed of metallic or nonmetallic materials that are compatible with cooking oil and food products. Nonmetallic transfer lines shall also meet the following requirements:

1. Transfer lines in pressure applications shall be rated for a working gauge pressure of 100 psi (689 kPa) at 70°F (21°C), or the maximum output pressure of the transfer pump, whichever is higher.
2. Transfer lines in suction applications shall be rated for full vacuum at 70°F (21°C).
3. Transfer lines shall be rated for temperatures up to 120°F (49°C) continuous.
4. The maximum nominal inside diameter shall be no larger than 1.25 in. (32 mm).
5. Leakage shall be controlled through the use of check valves or antisiphon valves at points where the lines connect to the fresh oil tank.

Transfer lines for waste cooking oil shall be permitted to be constructed of metallic or nonmetallic materials that are compatible with cooking oil. [30: 19.7.5.2]

Transfer lines shall be rated for use with cooking oil at elevated temperatures of 275°F (135°C) continuous and 350°F (177°C) intermittent. [30: 19.7.5.2.1]

Nonmetallic transfer lines shall be rated for working pressures up to 250 psi (1724 kPa) at 275°F (135°C). [30: 19.7.5.2.2]
Flow Control.
Cooking oil transfer lines shall be equipped with means to prevent unintended transfer or dispensing of cooking oil. These means shall be permitted to be in the form of momentary control switches, valves, check valves, antisiphon valves, plugs, couplings, fittings, or any combination thereof that are fail-safe in nature. [30: 19.7.5.3]

Pressure Control.
Pumping systems used to transfer cooking oil shall have means to prevent overpressurization of transfer lines. These means shall be in the form of relief valves, bypass valves, pressure sensor devices, or the pressure limitation of the pump itself. [30: 19.7.5.4]

Installation of Cooking Oil Transfer Lines in Plenum-Rated Spaces.
Cooking oil transfer lines installed in plenum-rated spaces shall be enclosed in noncombustible raceways or enclosures, or shall be covered with a material listed and labeled for installation within a plenum. [30: 19.7.5.5]

Testing of Cooking Oil Transfer Lines.
Cooking oil transfer lines shall be tested after installation and prior to use. Testing shall be with cooking oil at the normal operating pressures. Any leaks discovered in transfer lines as a result of testing shall be repaired or the transfer lines replaced prior to placing the transfer lines into service. [30: 19.7.5.6]
66.22.7.2  Weak Roof-to-Shell Seam Construction.
If used, a weak roof-to-shell seam shall be constructed to fail preferential to any other seam and shall be
designed in accordance with API Standard 650, *Welded Steel Tanks for Oil Storage*, or *ANSI/UL 142, Standard for Steel Aboveground Tanks for Flammable and Combustible Liquids*. [30:22.7.2]
66.22.11.3.7
The capacity of the primary tank shall not exceed the capacities that are given in Table 66.22.11.4.1.

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Fri Oct 04 16:48:23 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
66.22.11.4.1
The capacity of the listed primary tank shall not exceed the capacities given in Table 66.22.11.4.1 for Classes I, II, and IIIA liquids shall not exceed 50,000 gal (189,000 L).

Table 66.22.11.4.1 Maximum Capacities for Secondary Containment Type Aboveground Storage Tanks

<table>
<thead>
<tr>
<th>Liquid Classification</th>
<th>Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>12,000</td>
</tr>
<tr>
<td></td>
<td>45,400</td>
</tr>
<tr>
<td>II and IIIA</td>
<td>20,000</td>
</tr>
<tr>
<td></td>
<td>75,700</td>
</tr>
</tbody>
</table>

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Wed Jul 24 10:53:11 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
Spacing between adjacent tanks shall be not less than 3 ft (0.9 m) comply with Table 66.22.4.2.1.

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Wed Jul 24 10:56:54 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
## Second Revision No. 188-NFPA 1-2013 [ New Section after 66.27.2.3 ]

<table>
<thead>
<tr>
<th>66.27.2.4 Low Melting Point Materials.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Materials that melt at a low temperature, including but not limited to aluminum, copper, or brass; materials that soften on fire exposure, such as plastics; or nonductile materials, such as cast iron.</td>
</tr>
</tbody>
</table>

### Submitter Information Verification

- **Submitter Full Name:** Gregory Harrington
- **Organization:** National Fire Protection Assoc
- **Street Address:**
- **City:**
- **State:**
- **Zip:**
- **Submittal Date:** Wed Jul 24 11:07:41 EDT 2013

### Committee Statement

- **Committee Statement:** Extract update.
- **Response Message:**

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497 of 810 12/9/2013 2:48 PM
66.27.2.5 Secondary Containment.
Containment that is external to and separate from the primary piping system. [30:27.2.4.5]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Wed Jul 24 11:09:46 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
66.27.4.4 Low Melting Point Materials.

66.27.4.4.1 Low melting point materials, as defined in 66.27.2.4, shall be compatible with the liquids being handled and shall be used within the pressure and temperature limitations of ASME B31, Code for Pressure Piping. [30: 27.4.4.1]

66.27.4.4.2 Low melting point materials shall not be used as part of a tank's normal or emergency vent piping. [30: 27.4.4.2]

66.27.4.4.3 Low melting point materials shall be permitted to be used underground. [30: 27.4.4.3]

66.27.4.4.4 Such low melting point materials shall be permitted to be used outdoors aboveground, outside a dike, outside a remote impounding area, or inside buildings, provided they meet one of the following conditions:

1. They are resistant to damage by fire.
2. They are located so that any leakage resulting from failure will not expose persons, important buildings, tanks, or structures.
3. They are located where leakage can be controlled by operation of one or more accessible, remotely located valves.

66.27.4.4.5 The piping materials chosen shall be compatible with the liquids being handled. [30: 27.4.4.2] Low melting point materials shall be permitted to be used within a dike or within a remote impounding area provided they meet one of the following:

1. They are connected above the normal operating liquid level of the tank.
2. They are connected below the normal operating liquid level of the tank and one of the following conditions is met:
   a. The stored liquid is a Class III B liquid, the tank is located outdoors, and the piping is not exposed to a potential spill or leak of Class I, Class II or Class III A liquid.
   b. The low melting point material is protected from fire exposure, such as by using materials that have a fire resistance of not less than 2 hours.

66.27.4.4.6 Piping systems of these materials shall be designed and built in accordance with recognized standards of design for the particular materials chosen or with approved equivalent standards or shall be listed. [30: 27.4.4.3]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
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Committee Statement

Committee Statement: Extract update.
Response Message:
The person responsible for loading or unloading shall remain in attendance during the operation or be able to locally or remotely monitor and control the operation for the duration of the operation. [30: 28.11.4]

Exception: A responsible person shall not be required where a hazards analysis shows that the loading or unloading operation can be safely shut down in an emergency.

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Submittal Date: Wed Jul 24 13:36:09 EDT 2013

Committee Statement

Committee Statement: Editorial.
Response Message:
69.1.1.3 Stationary Installations.

Plans for stationary installations utilizing storage containers of over 2000 gal (7.6 m$^3$) individual water capacity or with aggregate water capacity exceeding 4000 gal (15.4 m$^3$), and all rooftop installations of ASME containers shall be submitted to the AHJ before the installation is started by the person or company that either installs or contracts to have the containers installed. [See also 6.20.11.1(F) of NFPA 58.]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submit Date: Tue Aug 20 13:41:09 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
69.2.1.1.6
Repairs or alteration of a container shall comply with the regulations, rules, or code under which the container was fabricated. Repairs or alteration to ASME containers shall be in accordance with the ANSI/NB23, National Board Inspection Code. [58:5.2.1.6]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Tue Aug 20 13:47:24 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
Second Revision No. 404-NFPA 1-2013 [Section No. 69.2.1.4.1.1]

69.2.1.4.1.1
Where LP-Gas and one or more other compressed gases are to be stored or used in the same area, the cylinders shall be marked “Flammable” and either “LP-GAS as,” “Propane,” or “Butane,” or shall be marked in accordance with the requirements of 49 CFR, “Transportation.” \[58:5.2.8.1(A)\]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Tue Aug 20 13:52:22 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
69.2.1.4.5
All containers that contain unodorized LP-Gas products shall be marked “NOT ODORIZED”.

69.2.1.4.5.1
The marking shall have a contrasting background surrounded by a rectangular border in red letters and red border in the sizes shown in Table 69.2.1.4.5.1.

### Table 69.2.1.4.5 NOT ODORIZED Label Size

<table>
<thead>
<tr>
<th>Water Capacity</th>
<th>Letter Height</th>
<th>Border Width</th>
</tr>
</thead>
<tbody>
<tr>
<td>gal</td>
<td>in.</td>
<td>cm</td>
</tr>
<tr>
<td>≥499</td>
<td>4</td>
<td>10.0</td>
</tr>
<tr>
<td>49–498</td>
<td>1 1/2</td>
<td>3.7</td>
</tr>
<tr>
<td>2.6–48</td>
<td>1 1/4</td>
<td>1.8</td>
</tr>
<tr>
<td>1–2.5</td>
<td>3/4</td>
<td>1.0</td>
</tr>
</tbody>
</table>

69.2.1.4.5.2
The markings shall be on both ends or on both sides of a container or on both sides and the rear of cargo tanks.

### Table 69.2.1.4.5.1 "NOT ODORIZED" Label Size

<table>
<thead>
<tr>
<th>Water Capacity</th>
<th>Letter Height</th>
<th>Border Width</th>
</tr>
</thead>
<tbody>
<tr>
<td>gal</td>
<td>in.</td>
<td>cm</td>
</tr>
<tr>
<td>≥499</td>
<td>4</td>
<td>10.0</td>
</tr>
<tr>
<td>49–498</td>
<td>1 1/2</td>
<td>3.7</td>
</tr>
<tr>
<td>2.6–48</td>
<td>1 1/4</td>
<td>1.8</td>
</tr>
<tr>
<td>1–2.5</td>
<td>3/4</td>
<td>1.0</td>
</tr>
</tbody>
</table>

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Tue Aug 20 13:55:55 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
Second Revision No. 406-NFPA 1-2013 [Section No. 69.3.2.2]

69.3.2.2
LP-Gas containers shall be allowed in buildings only for the following applications:

1. Cylinders as specifically provided for in Section 6.20 of NFPA 58

2. Containers of less than 125 gal (0.5 m³) water capacity for the purposes of being filled in buildings or structures complying with Chapter 10 of NFPA 58

3. Containers on LP-Gas vehicles complying with, and parked or garaged in accordance with, Chapter 9 of NFPA 58

4. Containers used with LP-Gas portable engine fuel systems shall comply with 11.15.1 of NFPA 58

5. Containers used with LP-Gas stationary engine fuel systems shall comply with 11.16.2 Section 6.26 of NFPA 58

6. Containers used with LP-Gas–fueled industrial trucks complying with 11.13.4 of NFPA 58

7. Containers on LP-Gas–fueled vehicles garaged in accordance with Section 11.16 of NFPA 58

8. Cylinders awaiting use, resale, or exchange when stored in accordance with Section 69.5 [58:6.2.2]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
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Street Address:
City:
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Submittal Date: Tue Aug 20 14:08:42 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
Second Revision No. 407-NFPA 1-2013 [Section No. 69.3.3.1.1]

69.3.3.1.1*
Containers installed outside of buildings, whether of the portable type replaced on a cylinder exchange basis or permanently installed and refilled at the installation, shall be located with respect to the adjacent containers, important building, group of buildings, or line of adjoining property that can be built upon, in accordance with Table 69.3.3.1.1, Table 69.3.4.1.2, Table 69.3.4.5.8, and 69.3.3.4.4 through 69.3.4.4.6 through 69.3.4.4.11. [58:6.3.1]

Table 69.3.3.1.1 Separation Distances Between Containers, Important Buildings, and Line of Adjoining Property That Can Be Built Upon

<table>
<thead>
<tr>
<th>Water Capacity per Container</th>
<th>Mounded or Underground Containers&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Aboveground Containers&lt;sup&gt;b&lt;/sup&gt;</th>
<th>Between Containers&lt;sup&gt;c b&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>gal</td>
<td>m&lt;sup&gt;3&lt;/sup&gt;</td>
<td>ft</td>
<td>m</td>
</tr>
<tr>
<td>&lt;125&lt;sup&gt;d&lt;/sup&gt;</td>
<td>&lt;0.5&lt;sup&gt;d&lt;/sup&gt;</td>
<td>10</td>
<td>3</td>
</tr>
<tr>
<td>125–250</td>
<td>0.5–1.0</td>
<td>10</td>
<td>3</td>
</tr>
<tr>
<td>251–500</td>
<td>&gt;1.0–1.9</td>
<td>10</td>
<td>3</td>
</tr>
<tr>
<td>501–2,000</td>
<td>&gt;1.9–7.6</td>
<td>10</td>
<td>3</td>
</tr>
<tr>
<td>2,001–30,000</td>
<td>&gt;7.6–114</td>
<td>50</td>
<td>15</td>
</tr>
<tr>
<td>30,001–70,000</td>
<td>&gt;114–265</td>
<td>50</td>
<td>15</td>
</tr>
<tr>
<td>70,001–90,000</td>
<td>&gt;265–341</td>
<td>50</td>
<td>15</td>
</tr>
<tr>
<td>90,001–120,000</td>
<td>&gt;341–454</td>
<td>50</td>
<td>15</td>
</tr>
<tr>
<td>120,001–200,000</td>
<td>&gt;454–757</td>
<td>50</td>
<td>15</td>
</tr>
<tr>
<td>200,001–1,000,000</td>
<td>&gt;757–3785</td>
<td>50</td>
<td>15</td>
</tr>
<tr>
<td>&gt;1,000,000</td>
<td>&gt;3785</td>
<td>50</td>
<td>15</td>
</tr>
</tbody>
</table>

<sup>a</sup> See 69.3.3.4.2.1.
<sup>b</sup> See 69.3.3.11.4.5.
<sup>c</sup> See 69.3.3.10.4.4.
<sup>d</sup> See 69.3.3.9.4.1, 69.3.3.4.2, 69.3.3.4.3 and 69.3.3.4.4.
<sup>e</sup> See 69.3.3.7 and 69.3.3.8.
<sup>f g</sup> See 69.3.3.1.3.

[58: Table 6.3.1.1]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
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Submittal Date:  Tue Aug 20 14:14:48 EDT 2013

Committee Statement

Committee Statement:  Extract update.
Response Message:
When the provisions of 6.27.3 through 6.27.5 of NFPA 58 are met, the minimum distance from an ASME container to a building shall be reduced by one-half for ASME containers of 2001 gal through 30,000 gal (7.6 m³ through 114 m³) water capacity. [58:6.3.1.2]
69.3.3.2.1
Minimum distances for underground or mounded ASME containers of 2001 gal through 30,000 gal (7.6 m³ through 114 m³) water capacity, incorporating all the provisions of Section 6.27.28 of NFPA 58, shall be reduced to 10 ft (3 m). [58:6.3.2.1]

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Submitter Full Name: Gregory Harrington
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Street Address:
City:  
State:  
Zip:  
Submittal Date: Tue Aug 20 14:33:17 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
Second Revision No. 410-NFPA 1-2013 [ Section No. 69.3.3.3.2.3 ]

69.3.3.3.2.3
The minimum distances between containers shall not be applied to installations covered by 69.3.3.2.
[58:6.3.3.2(C)]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Tue Aug 20 14:38:16 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
69.3.3.4.1 Containers less than 125 gal water capacity Cylinders shall not be located and installed underneath any building unless the space is open to the atmosphere for 50 percent of its perimeter or more. [58:6.3.4.1]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Tue Aug 20 14:40:42 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
69.3.3.4.3*
The distance measured horizontally from the point of discharge of a container pressure relief valve to any building opening below the level of such discharge shall be in accordance with Table 69.3.3.4.3.

Table 69.3.3.4.3 Separation Distance Between Container Pressure Relief Valve and Building Openings

<table>
<thead>
<tr>
<th>Container Type</th>
<th>Exchange or Filled on Site at the Point of Use</th>
<th>Distance Horizontally from Relief Valve Discharge to Opening Below Discharge</th>
<th>Discharge from Relief Valve, Vent Discharge, and Filling Connection to Exterior Source of Ignition, Openings into Direct-Vent Appliances, and Mechanical Ventilation Air Intakes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>ft</td>
<td>m</td>
</tr>
<tr>
<td>Cylinder</td>
<td>Exchange</td>
<td>3</td>
<td>0.9</td>
</tr>
<tr>
<td>Cylinder</td>
<td>Filled on site at the point of use</td>
<td>3</td>
<td>0.9</td>
</tr>
<tr>
<td>ASME</td>
<td>Filled on site at the point of use</td>
<td>5</td>
<td>1.5</td>
</tr>
</tbody>
</table>

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Tue Aug 20 14:43:52 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
69.3.3.4.4
The distance measured in any direction from the point of discharge of a container pressure relief valve, vent of a fixed maximum liquid level gauge on a container, and the container filling connection to exterior sources of ignition, openings into direct-vent (sealed combustion system) appliances, and mechanical ventilation air intakes shall be in accordance with Table 69.3.3.4.3. [58:6.3.4.3.4]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address: 
City: 
State: 
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Submittal Date: Tue Aug 20 14:46:29 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
69.3.3.4.5
Access at the ends or sides of individual underground containers having a water capacity of 125 gal (0.5 m$^3$) or more shall be provided in multicontainer installations to facilitate working with cranes or hoists. [58:6.3.4.4.5]
69.3.4.1.1
Where storage containers having an aggregate water capacity of more than 4000 gal (15,122 m³) are located in heavily populated or congested areas, the siting provisions of 69.3.3.1.1 and Table 69.3.3.1.1 shall be permitted to be modified as indicated by the fire safety analysis described in 6.26.27.3 of NFPA 58. [58:6.4.1.1]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
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Submittal Date: Tue Aug 20 14:49:51 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
### Table 69.3.4.1.2 Maximum Number of Containers in a Group and Their Separation Distances

<table>
<thead>
<tr>
<th>Fire Protection Provided by</th>
<th>Maximum Number of Containers in One Group</th>
<th>Minimum Separation Between Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ft</td>
<td>m</td>
</tr>
<tr>
<td>Hose streams only (see 6.4.1.2 and 6.257.3.1 of NFPA 58)</td>
<td>6</td>
<td>50 15</td>
</tr>
<tr>
<td>Fixed monitor nozzles per 6.257.6.3 of NFPA 58</td>
<td>6</td>
<td>25 7.6</td>
</tr>
<tr>
<td>Fixed water spray per 6.257.6.1 of NFPA 58</td>
<td>9</td>
<td>25 7.6</td>
</tr>
<tr>
<td>Insulation per 6.257.5.1 of NFPA 58</td>
<td>9</td>
<td>25 7.6</td>
</tr>
</tbody>
</table>

[58: Table 6.4.1.2]
69.3.4.1.3
Where the provisions of 6.27.28.3 and 6.27.28.4 of NFPA 58 are met, the minimum separation distance between groups of ASME containers protected by hose stream only shall be one-half the distances required in Table 69.3.4.1.2. [58:6.4.1.3]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Tue Aug 20 14:53:02 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
69.3.4.2.1
Underground or mounded ASME containers shall be located in accordance with 69.3.4.2.2 through and 69.3.4.2.3. [58:6.4.2.1]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Tue Aug 20 14:54:07 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
Second Revision No. 419-NFPA 1-2013 [ Section No. 69.3.4.4.3 ]

69.3.4.4.3*
Combustible materials shall not accumulate or be stored within 10 ft (3 m) of a container. [58:6.4.4.3]

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Submitter Full Name: Gregory Harrington
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Committee Statement

Committee Statement: Extract update.
Response Message: 

Page 576 of 866
Second Revision No. 420-NFPA 1-2013 [Section No. 69.3.4.4.14]

69.3.4.4.14*
Refrigerated LP-Gas containers shall be located within an impoundment in accordance with Section 12.3.5 of NFPA 58. [58: 6.4.4.14]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
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Zip:
Submittal Date: Tue Aug 20 15:02:46 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
Second Revision No. 421-NFPA 1-2013 [Section No. 69.3.4.5]

69.3.4.5* Structure Requirements.
Structures such as fire walls, fences, earth or concrete barriers, and other similar structures shall not be permitted around or over installed nonrefrigerated containers unless specifically allowed as follows:

- Structures partially enclosing containers shall be permitted if designed in accordance with a sound fire protection analysis.
- Structures used to prevent flammable or combustible liquid accumulation or flow shall be permitted in accordance with 69.3.4.4.
- Structures between LP-Gas containers and gaseous hydrogen containers shall be permitted in accordance with 69.3.4.4.10.
- Structures such as fences shall be permitted in accordance with 6.19.4 of NFPA 58. [58: 6.4.7]

69.3.4.5.1 Structures such as fire walls, fences, earth or concrete barriers, and other similar structures shall not be permitted around or over installed nonrefrigerated containers unless specifically allowed. [58: 6.4.5.1]

69.3.4.5.2 Structures partially enclosing containers shall be permitted if designed in accordance with a sound fire protection analysis. [58: 6.4.5.2]

69.3.4.5.3 Structures used to prevent flammable or combustible liquid accumulation or flow shall be permitted in accordance with 69.3.4.4. [58: 6.4.5.3]

69.3.4.5.4 Structures between LP-Gas containers and gaseous hydrogen containers shall be permitted in accordance with 69.3.4.4.10. [58: 6.4.5.4]

69.3.4.5.5 Structures such as fences shall be permitted in accordance with 6.19.4 of NFPA 58. [58: 6.4.5.5]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Tue Aug 20 15:04:08 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
Second Revision No. 422-NFPA 1-2013 [ Section No. 69.3.5.1.4 ]

69.3.5.1.4
The transfer of liquid into containers on the roofs of structures shall be permitted, provided that the installation conforms to the requirements contained, specified in 6.6.7 and 6.19.11 of NFPA 58. [58:6.5.1.4]

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Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
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Submittal Date: Tue Aug 20 15:15:03 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
If the point of transfer of containers located outdoors in stationary installations is not located at the container, it shall be located in accordance with Table 69.3.5.2.1. [58: Table 6.5.2.1]

Table 69.3.5.2.1 Distance Between Point of Transfer and Exposures

<table>
<thead>
<tr>
<th>Part</th>
<th>Exposure</th>
<th>Minimum Horizontal Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Buildings, a mobile homes, recreational vehicles, and modular homes with at least 1-hour fire-rated walls b</td>
<td>10 ft (3.1 m)</td>
</tr>
<tr>
<td>B</td>
<td>Buildings a with other than at least 1-hour fire-rated walls b</td>
<td>25 ft (7.6 m)</td>
</tr>
<tr>
<td>C</td>
<td>Building wall openings or pits at or below the level of the point of transfer</td>
<td>25 ft (7.6 m)</td>
</tr>
<tr>
<td>D</td>
<td>Line of adjoining property that can be built upon</td>
<td>25 ft (7.6 m)</td>
</tr>
<tr>
<td>E</td>
<td>Outdoor places of public assembly, including schoolyards, athletic fields, and playgrounds</td>
<td>50 ft (15.2 m)</td>
</tr>
<tr>
<td>F</td>
<td>Public ways, including public streets, highways, thoroughfares, and sidewalks</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(1) From points of transfer in LP-Gas dispensing stations and at vehicle fuel dispensers</td>
<td>10 ft (3.1 m)</td>
</tr>
<tr>
<td></td>
<td>(2) From other points of transfer</td>
<td>25 ft (7.6 m)</td>
</tr>
<tr>
<td>G</td>
<td>Driveways d</td>
<td>5 ft (1.5 m)</td>
</tr>
<tr>
<td>H</td>
<td>Mainline railroad track centerlines</td>
<td>25 ft (7.6 m)</td>
</tr>
<tr>
<td>I</td>
<td>Containers e other than those being filled</td>
<td>10 ft (3.1 m)</td>
</tr>
<tr>
<td>J</td>
<td>Flammable and Class II combustible liquid f dispensers and the fill connections of containers</td>
<td>10 ft (3.1 m)</td>
</tr>
<tr>
<td></td>
<td>Flammable and Class II combustible liquid aboveground containers, and containers under ground filling connections of underground containers</td>
<td>20 ft (6.1 m)</td>
</tr>
</tbody>
</table>

a For the purpose of the table, buildings also include structures such as tents and box trailers at construction sites.


c See 69.3.5.4.4.

d Not applicable to driveways and points of transfer at vehicle fuel dispensers.

e Not applicable to filling connections at the storage container or to dispensing vehicle fuel dispenser units of 2000 gal (7600 L) or 4000 gal (15,200 L) water capacity or less when used for filling containers not mounted on vehicles.

f NFPA 30 defines these as follows: Flammable liquids include those having a flash point below 100°F (37.8°C) and having a vapor pressure not exceeding 40 psia (276 kPa) at 100°F (37.8°C). Class II combustible liquids include those having a flash point at or above 100°F (37.8°C) and below 140°F (60°C).

[58: Table 6.5.2.1]
Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Tue Aug 20 15:18:51 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
Second Revision No. 424-NFPA 1-2013 [ Section No. 69.3.5.3.4 ]

69.3.5.3.4
The distances in Table 69.3.5.2.1, parts B, C, D, E, F(2), and J, shall be reduced by one-half where the system incorporates the provisions of low emission transfer as provided in 6.27.28.5 of NFPA 58.

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Street Address:
City:
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Submittal Date: Tue Aug 20 15:28:29 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
69.3.6.1.2 Vehicle Barrier Protection (VBP).

LP-Gas containers or systems of which they are a part installed within 10 ft (3m) of public vehicular thoroughfares shall be provided with a means of vehicle vehicular barrier protection.

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Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
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Submittal Date: Tue Aug 20 15:29:43 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
69.3.7.3 Thermal Activation.
Automatic shutdown of internal valves in liquid service shall be provided using thermal (fire) actuation. The thermal sensing element of the internal valve shall be within 5 ft (1.5 m) of the internal valve. [58: 6.11.3]

69.3.7.3.1
Automatic shutdown of internal valves in liquid service shall be provided using thermal (fire) actuation. [58: 6.11.3.1]

69.3.7.3.2
The thermal sensing element of the internal valve shall be within 5 ft (1.5 m) of the internal valve. [58: 6.11.3.2]
69.3.7.4 Remote Shutdown Station.
At least one remote shutdown station for internal valves in liquid service shall be installed not less than 25 ft (7.6 m) or more than 100 ft (30 m) from the liquid transfer point. This requirement shall be retroactive to all internal valves required by NFPA 58. [58: 6.11.4]

69.3.7.4.1
At least one remote shutdown station for internal valves in liquid service shall be installed not less than 25 ft (7.6 m) or more than 100 ft (30 m) from the liquid transfer point. [58: 6.11.4.1]

69.3.7.4.2
This requirement shall be retroactive to all internal valves required by NFPA 58. [58: 6.11.4.2]
69.3.8.1
On new installations and on existing installations, stationary container storage systems with an aggregate water capacity of more than 4000 gal (15.4 m$^3$) utilizing a liquid transfer line that is $1\frac{1}{2}$ in. (39 mm) or larger, and a pressure equalizing vapor line that is $1\frac{1}{4}$ in. (32 mm) or larger, shall be equipped with emergency shutoff valves. [58:6.12.1]
## 69.3.8.9

*Emergency shutoff valves required by NFPA 58 shall be tested annually for the functions required by 5.12.2.3(2) and (3) of NFPA 58, and the results of the test shall be documented.* [58: 6.12.9]

Where emergency shutoff valves are required to be installed in accordance with 69.3.8.2, a means shall be incorporated to actuate the emergency shutoff valves in the event of a break of the fixed piping resulting from a pull on the hose. [58: 6.12.9]

### Submitter Information Verification

- **Submitter Full Name:** Gregory Harrington
- **Organization:** National Fire Protection Assoc
- **Street Address:**
- **City:**
- **State:**
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- **Submittal Date:** Tue Aug 20 15:42:28 EDT 2013

### Committee Statement

- **Committee Statement:** Extract update.
- **Response Message:**

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**Page 588 of 866**
69.3.8.11
Backflow check valves installed in lieu of emergency shutoff valves shall be checked annually for proper operation, and the results of the test shall be documented. [58:6.12.10 11 ]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
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Committee Statement

Committee Statement: Extract update.
Response Message:
Second Revision No. 431-NFPA 1-2013 [ Section No. 69.3.8.11 ]

69.3.8.12
All new and existing emergency shutoff valves shall comply with 69.3.8.12.1 through 69.3.8.12.3. [58: 6.12.12]

69.3.8.12.1
Each emergency shutoff valve shall have at least one clearly identified and easily accessible manually operated remote emergency shutoff device. [58:6.12.41 12.1]

69.3.8.12.2
The shutoff device shall be located not less than 25 ft (7.6 m) or more than 100 ft (30 m) in the path of egress from the emergency shutoff valve. [58:6.12.41 12.2]

69.3.8.12.3
Where an emergency shutoff valve is used in lieu of an internal valve in compliance with 5.7.4.2(D)(2) of NFPA 58, the remote shutoff device shall be installed in accordance with 69.3.7.4 and 69.3.7.5. [58:6.12.41 12.3]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
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Street Address:
City:
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Zip:
Submittal Date: Tue Aug 20 15:46:13 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
Emergency shutoff valves for railroad tank car transfer systems shall be in accordance with 6.19.2.6, 6.27.28.4, 7.2.3.7, and 7.2.3.82 of NFPA 58. [58:6.12.42]
69.3.9* Installation in Areas of Heavy Snowfall.

In areas where the local building codes have specified a minimum design ground snow load for roofs is equal to or exceeding 125 psf (610 kg/m²) or 175 psf (855 kg/m²), piping, regulators, meters, and other equipment installed in the piping system shall be protected from the forces anticipated as a result of accumulated snow. [58:6.16.1]
The phrase cylinders in use shall mean connected for use. [58:6.20.1.2]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
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Committee Statement

Committee Statement: Extract update.
Response Message:
Second Revision No. 435-NFPA 1-2013 [Section No. 69.3.10.1.2.1]

<table>
<thead>
<tr>
<th>69.3.10.1.2.1</th>
</tr>
</thead>
<tbody>
<tr>
<td>The use of cylinders indoors shall be only for the purposes specified in 6.20.4 through 6.20.9 of NFPA 58. [58:6.20.1.2(A)]</td>
</tr>
</tbody>
</table>

**Submitter Information Verification**

- **Submitter Full Name:** Gregory Harrington
- **Organization:** National Fire Protection Assoc
- **Street Address:**
- **City:**
- **State:**
- **Zip:**
- **Submittal Date:** Tue Aug 20 15:55:43 EDT 2013

**Committee Statement**

- **Committee Statement:** Extract update.
- **Response Message:**

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National Fire Protection Association Report

http://submittals.nfpa.org/TerraViewWeb/ContentFetcher?commentPara...
69.3.10.2.1

Cylinders shall be in accordance with the following:

1. Cylinders shall not exceed 245 lb (111 kg) water capacity [nominal 100 lb (45 kg) propane capacity] each.

2. Cylinders shall comply with other applicable provisions of Section 5.2 of NFPA 58, and they shall be equipped as provided in Section 5.7 of NFPA 58.

3. Cylinders shall be marked in accordance with 5.2.8.1 and 5.2.8.2 of NFPA 58.

4. Cylinders with propane capacities greater than 2 lb (0.9 kg) shall be equipped as provided in Table 5.7.4.1(D) of NFPA 58, and an excess-flow valve shall be provided for vapor service when used indoors.

5. Cylinder valves shall be protected in accordance with 5.2.6.1 of NFPA 58.

6. Cylinders having water capacities greater than 2.7 lb (1.2 kg) and connected for use shall stand on a firm and substantially level surface.

7. Cylinders shall be secured in an upright position if necessary.

8. Cylinders and the valve-protecting devices used with them shall be oriented to minimize the possibility of impingement of the pressure relief device discharge on the cylinder and adjacent cylinders. \[58: 6.19.2.1\]
Second Revision No. 437-NFPA 1-2013 [ Section No. 69.3.10.3.9 ]

69.3.10.3.9
Where cylinders are manifolded together for connection to a heater(s) on another floor, 69.3.10.3.9.1 through 69.3.10.3.9.3 the following shall apply.

(1) Heaters shall not be installed on the same floors with manifolded cylinders.

(2) The total water capacity of the cylinders connected to any one manifold shall not be greater than 2450 lb (1111 kg) [nominal 1000 lb (454 kg) propane capacity].

(3) Manifolds of more than 735 lb (333 kg) water capacity [nominal 300 lb (136 kg) propane capacity], if located in the same unpartitioned area, shall be separated from each other by at least 50 ft (15 m).

[ 58: 6.20.4.9(A) ]
69.3.10.3.9.1
Heaters shall not be installed on the same floors with manifolded cylinders. [ 58: 6.20.4.9(A) ]

[ 58: 6.20.4.9(B) ]
69.3.10.3.9.2
The total water capacity of the cylinders connected to any one manifold shall not be greater than 2450 lb (1111 kg) [nominal 1000 lb (454 kg) propane capacity]. [ 58: 6.20.4.9(B) ]

[ 58: 6.20.4.9(C) ]
69.3.10.3.9.3
Manifolds of more than 735 lb (333 kg) water capacity [nominal 300 lb (136 kg) propane capacity], if located in the same unpartitioned area, shall be separated from each other by at least 50 ft (15 m).

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
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Submittal Date: Tue Aug 20 16:05:40 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
Second Revision No. 438-NFPA 1-2013 [Section No. 69.3.12.3.1.1]

69.3.12.3.1.1
ASME mobile containers shall have a MAWP of 250 psig (1.7 MPag) if constructed prior to April 1, 2001, or 312 psig (2.2 MPag) if constructed on or after April 1, 2001. [58: 6.24.3.1(A)] in accordance with one of the following:

1. A MAWP of 312 psig (2.2 MPag) or higher where installed in enclosed spaces of vehicles
2. A MAWP of 312 psig (2.2 MPag) or higher where installed on passenger vehicles
3. A MAWP of 250 psig (1.7 MPag) or higher for containers where installed on the exterior of nonpassenger vehicles

[58: 6.24.3.1(A)]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
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Submittal Date: Tue Aug 20 16:30:21 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
Second Revision No. 439-NFPA 1-2013 [Section No. 69.3.12.6 [Excluding any Sub-Sections]]

Equipment shall be installed in accordance with Section 6.17 of NFPA 58 and 69.3.12.6.1 and 69.3.12.6.2. [58:6.24.6]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
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Submittal Date: Tue Aug 20 16:41:44 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
69.3.12.6.2
Equipment installed on vehicles shall be protected against vehicular damage as provided for container appurtenances and connections in 69.3.12.3.4.5. [58:6.24.6.2]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Tue Aug 20 16:43:20 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
69.3.13.3.7
Protection against trespassing and tampering shall be in accordance with 6.18.4 of NFPA 58.
[58:6.25.3.7]

Submitter Information Verification
Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Tue Aug 20 16:50:25 EDT 2013

Committee Statement
Committee Statement: Extract update.
Response Message:
Concrete filled guard posts constructed of steel not less than 4 in. (102 mm) in diameter, with the following characteristics:

(1) Spaced not more than 4 ft (1219 mm) between posts on center.
(2) Set not less than 3 ft (914 mm) deep in a concrete footing of not less than 15 in. (380 mm) diameter.
(3) Set with the top of the posts not less than 3 ft (900 mm) above ground.
(4) Located not less than 3 ft (914 mm) from the protected installation. [58: 6.25.3.13(A)]
Second Revision No. 443-NFPA 1-2013 [ Section No. 69.3.13.3.13.2 ]

69.3.13.3.13.2
Equivalent protection in lieu of guard posts shall be a minimum of 36 in. (914 mm) of 3 ft (900 mm) in height and shall resist a force of 12,000 lb (53,375 N) applied 36 inches 3 ft (914 900 mm) above the adjacent ground surface. [58:6.25.3.13(B)]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
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Zip:
Submittal Date: Tue Aug 20 16:53:37 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
Second Revision No. 444-NFPA 1-2013 [ Section No. 69.3.13.4.2 ]

69.3.13.4.2
A listed emergency breakaway device shall be installed and shall comply with ANSI/UL 567, Standard for Emergency Breakaway Fittings, Swivel Connectors, and Pipe-Connection Fittings for Petroleum Products and LP-Gas, and be designed to retain liquid on both sides of the breakaway point, or other devices affording equivalent protection approved by the AHJ. [58:6.25.4.2]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Tue Aug 20 16:56:33 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message: 
Dispensing devices for LP-Gas shall be located as follows:

1. Conventional systems shall be at least 10 ft (3.0 m) from any dispensing device for Class I liquids.

2. Low-emission transfer systems in accordance with Section 6.27 28.5 of NFPA 58 shall be at least 5 ft (1.5 m) from any dispensing device for Class I liquids. [58: 6.25.4.3]
69.4.2.3.5
Transfers to containers serving agricultural or industrial equipment requiring refueling in the field shall comply with 69.4.2.3.5.1 and 69.4.2.3.5.2. [58: 7.2.3.5]

69.4.2.3.5.1*
Where the intake of air-moving equipment is less than 50 ft (15 m) from a point of transfer, it shall be shut down while containers are being refilled.

69.4.2.3.5.2
Equipment employing open flames or equipment with integral containers shall be shut down while refueling. [58: 7.2.3.5(B)]

(A)*
Where the intake of air-moving equipment is less than 50 ft (15 m) from a point of transfer, it shall be shut down while containers are being refilled.

(B)
Equipment employing open flames or equipment with integral containers shall be shut down while refueling. [58: 7.2.3.5]
Where cargo tank vehicles are filled directly from railroad tank cars on a private track with nonstationary storage tanks involved, the following requirements shall be met:

1. Transfer protection shall be provided in accordance with Section 6.12 of NFPA 58. 
2. Ignition source control shall be in accordance with Section 6.22 of NFPA 58. 
3. Control of ignition sources during transfer shall be provided in accordance with 7.2.3.2 of NFPA 58. 
4. Fire extinguishers shall be provided in accordance with 9.4.7 of NFPA 58. 
5. Transfer personnel shall meet the provisions of 7.2.1 of NFPA 58. 
6. Cargo tank vehicles shall meet the requirements of 7.2.3 of NFPA 58. 
7. The points of transfer shall be located in accordance with Table 6.5.3 of NFPA 58 with respect to exposures. 
8. Provision for anchorage and breakaway shall be provided on the cargo tank vehicle side for transfer from a railroad tank car directly into a cargo tank vehicle. 
9. The provisions of Chapter 14 of NFPA 58 shall apply to all LP-Gas transfers performed in accordance with NFPA 58.
Second Revision No. 448-NFPA 1-2013 [ Section No. 69.4.2.3.9 ]

69.4.2.3.9
Where cargo tank vehicles are filled from other cargo tank vehicles or cargo tanks, the following requirements shall apply:

(1) Transfer between cargo tanks or cargo tank vehicles where one is used as a bulk plant shall be temporary installations that comply with 4.3.2, 6.18.1 6.19.1, 6.18.2 6.19.2, 6.18.4 6.19.4 through 6.18.6 6.19.6 of NFPA 58, and 69.4.2.3.1.

(2) Arrangements and operations of the transfer system shall be in accordance with the following:
   (a) The point of transfer shall be in accordance with Table 6.5.3 of NFPA 58 Table 69.3.5.2.1.
   (b) Sources of ignition within the transfer area shall be controlled during the transfer operation as specified in 69.4.2.3.2.
   (c) Fire extinguishers shall be provided in accordance with 9.4.7 of NFPA 58.

(3) Cargo tanks shall comply with the requirements of 7.2.2.8 of NFPA 58 69.4.2.2.8.

(4) Provisions designed either to prevent a pull-away during a transfer operation or to stop the flow of products from both cargo tank vehicles or cargo tanks in the event of a pull-away shall be incorporated.

(5) Off-truck remote shutoff devices that meet 49 CFR 173.315(n) requirements and are installed on the cargo tank vehicle unloading the product shall satisfy the requirements of 69.4.2.3.9(4).

(6) Cargo tank vehicle LP-Gas transfers that are for the sole purpose of testing, maintaining, or repairing the cargo tank vehicle shall be exempt from the requirements of 69.4.2.3.9(1). [58: 7.2.3.9]
69.5.2.2.1
Cylinder valves shall be protected as required by 5.2.6.1 and 7.2.2.5 of NFPA 58, 69.2.1.2.1, and 69.4.2.2.5. [58:8.2.2.1]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
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Submittal Date: Wed Aug 21 09:26:26 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
Second Revision No. 450-NFPA 1-2013 [ Section No. 69.5.2.2.3 ]

69.5.2.2.3
Valve outlets on cylinders less than 108 lb (49 kg) water capacity [nominal 45 lb (20 kg) propane capacity] shall be plugged, capped, or sealed in accordance with 7.2.2.5 of NFPA 58 69.4.2.2.5. [58:8.2.2.3]

Submitter Information Verification
Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submital Date: Wed Aug 21 09:27:58 EDT 2013

Committee Statement
Committee Statement: Extract update.
Response Message:
## Second Revision No. 466-NFPA 1-2013 [Section No. 69.5.3.2.1.2]

<table>
<thead>
<tr>
<th>69.5.3.2.1.2</th>
</tr>
</thead>
<tbody>
<tr>
<td>The sprinkler density shall be 0.300 gpm (1.1 L/min) over the most remote 2000 ft² (18.6 m²) area, and the hose stream allowance shall be 250 gpm (946 L/min). [58: 8.3.2.1(B)]</td>
</tr>
</tbody>
</table>

### Submitter Information Verification

- **Submitter Full Name:** Gregory Harrington
- **Organization:** National Fire Protection Assoc
- **Street Address:**
- **City:**
- **State:**
- **Zip:**
- **Submittal Date:** Wed Aug 21 11:08:10 EDT 2013

### Committee Statement

- **Committee Statement:** Extract update.
- **Response Message:**
69.5.3.2.3
In restaurants and at food service locations, storage of 10 oz (283 g) butane nonrefillable containers shall be limited to not more than 24 containers and an additional 24 10 oz (283 g) butane nonrefillable containers stored in another location within the building where constructed with at least 2-hour fire wall protection. [58:8.3.2.3]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
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Zip:
Submittal Date: Wed Aug 21 09:45:05 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
Second Revision No. 452-NFPA 1-2013 [Section No. 69.5.3.4.3]

69.5.3.4.3
The construction of all special buildings and rooms specified in 69.5.3.4.2 shall comply with Chapter 10 of NFPA 58 and the following:

(1) Vents to the outside only shall be provided at both the top and bottom of the building and shall be located at least 5 ft (1.5 m) from any building opening.

(2) The entire area shall be classified for purposes of ignition source control in accordance with Section 6.22.23 of NFPA 58. [58:8.3.4.3]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address: 
City: 
State: 
Zip: 
Submitter Date: Wed Aug 21 09:48:11 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
Second Revision No. 453-NFPA 1-2013 [Sections 69.5.4.1.3, 69.5.4.1.4]

69.5.4.1.2.1
The distances in Table 69.5.4.1.2 shall be reduced to 0 where a 2-hour fire-resistive protective structure made of noncombustible materials is provided that breaks the line of sight of the storage and the building. [58:8.4.1.2(A)]

69.5.4.1.2.2
For buildings with exterior walls rated 2-hour fire resistance and constructed of noncombustible materials not provided with eaves over the storage, the exterior wall shall be allowed in lieu of a protective structure to reduce the distance to 0. [58:8.4.1.2(B)]

69.5.4.1.3 Fire-Resistive Protective Structure.
(A)
The distances in Table 69.5.4.1.2 shall be reduced to 0 where a 2-hour fire-resistive protective structure made of noncombustible materials is provided that breaks the line of sight of the storage and the building. [58:8.4.1.3(A)] For buildings with exterior walls rated 2-hour fire resistance and constructed of noncombustible materials not provided with eaves over the storage, the exterior wall shall be allowed in lieu of a protective structure to reduce the distance to 0. [58:8.4.1.3]

(B)
For buildings with exterior walls rated 2-hour fire resistance and constructed of noncombustible materials not provided with eaves over the storage, the exterior wall shall be allowed in lieu of a protective structure to reduce the distance to 0. [58:8.4.1.3(B)]

69.5.4.1.4 Cylinders in the filling process shall not be considered to be in storage. [58:8.4.1.4]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Wed Aug 21 09:51:27 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
69.5.4.2.2*

Vehicle barrier protection (VBP) shall be provided where vehicular traffic is expected at the location. [58:8.4.2.2]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submital Date: Wed Aug 21 09:55:44 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
69.5.5* Fire Protection and Electrical Area Classification.

69.5.5.1 At retail cylinder exchange locations shall be provided with at least one approved portable fire extinguisher having a minimum capacity of 10 lb (4.5 kg) dry chemical with an A:B:C rating complying with 69.5.5.3 shall be provided on the premises where retail cylinder exchange cabinets are storing more than 720 lbs lb (327 kg) of propane are stored. [58:8.5.1]

69.5.5.2 Storage locations, other than those complying with 69.5.5.1, where the aggregate quantity of propane stored is in excess of 720 lb (327 kg), shall be provided with at least one approved portable fire extinguisher having a 40-B:C or 80-B:C rating and a minimum capacity of 18 lb (9.2 kg) dry chemical. [58:8.5.2]

69.5.5.3 The required fire extinguisher shall be located in accordance with 69.5.5.3.1 and 69.5.5.3.2. [58:8.5.3]

69.5.5.3.1 A 40-B:C fire extinguisher shall be located not more than 30 ft (9 m) from the propane storage location. [58:8.5.3.1]

69.5.5.3.2 An 80-B:C fire extinguisher shall be located not more than 50 ft (15 m) from the propane storage location. [58:8.5.3.2]

69.5.5.4 Where fire extinguishers have more than one letter classification, they shall be considered to satisfy the requirements of each letter class. [58:8.5.4]

69.5.5.5 The storage of cylinders awaiting resale shall be exempt from the electrical classification requirements of NFPA 58. [58:8.5.5]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
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Street Address:
City: State: Zip:
Submittal Date: Wed Aug 21 10:00:43 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
69.5.6 Electrical Area Classification.
The storage of cylinders awaiting resale shall be exempt from the electrical classification requirements
of NFPA 58. [58: 8.6]
Second Revision No. 457-NFPA 1-2013 [Section No. 69.5.7]

69.5.6 Automated Cylinder Exchange Stations.

Cylinder exchange cabinets that include an automated vending system for exchanging cylinders shall comply with the following additional requirements.

69.5.6.1 Cylinder exchange cabinets that include an automated vending system for exchanging cylinders shall comply with the requirements in 69.5.6.2 through 69.5.6.6.

69.5.6.2 Electrical equipment installed in cylinder storage compartments shall comply with the requirements for Class I, Division 2 equipment in accordance with NFPA 70, National Electrical Code.

69.5.6.3 Cabinets shall be designed such that cylinders can be placed inside only in the upright position.

69.5.6.4 Door releases for access to stored cylinders shall be permitted to be pneumatic, mechanical, or electrically powered.

69.5.6.5 A manual override control shall be permitted for use by authorized personnel.

69.5.6.6 The vending system shall not be capable of returning to automatic operation after a manual override until the system has been inspected and reset by authorized personnel.

Submitter Information Verification

Submitter Full Name: Gregory Harrington
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City:
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Submittal Date: Wed Aug 21 10:10:11 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
69.6.1.1.2
Cylinders shall be constructed as provided in Section 5.2 of NFPA 58 69.2.1 and equipped in accordance with Section 5.7 of NFPA 58 for transportation as cylinders. [58:9.3.2.2]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Wed Aug 21 10:16:11 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
69.6.1.1.4

Cylinder valves shall comply with the following:

(1) Valves of cylinders shall be protected in accordance with 5.2.6.1 of NFPA 58 69.2.1.2.1.

(2) Screw-on-type protecting caps or collars shall be secured in place.

(3) The provisions of 7.2.2.5 of NFPA 58 69.4.2.2.5 shall apply. [58:9.3.2.4]
Second Revision No. 460-NFPA 1-2013 [ Section No. 69.6.1.1.5 ]

69.6.1.1.5
The cargo space of the vehicle shall be isolated from the driver's compartment, the engine, and the engine's exhaust system. **Open-bodied vehicles shall be considered to be in compliance with this provision.** [58:9.3.2.5]

69.6.1.1.5.1
Open-bodied vehicles shall be considered to be in compliance with 69.6.1.1.5.

69.6.1.1.5.2
Closed-bodied vehicles having separate cargo, driver, and engine compartments shall also be considered to be in compliance with this provision 69.6.1.1.5. [58:9.3.2.5(A)(B)]

69.6.1.1.5.3
Closed-bodied vehicles, such as passenger cars, vans, and station wagons, shall not be used for transporting more than 215 lb (98 kg) water capacity [nominal 90 lb (41 kg) propane capacity], but not more than 108 lb (49 kg) water capacity [nominal 45 lb (20 kg) propane capacity] per cylinder, unless the driver and engine compartments are separated from the cargo space by a vaportight partition that contains no means of access to the cargo space. [58:9.3.2.5(B)(C)]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
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Submittal Date: Wed Aug 21 10:42:03 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
Second Revision No. 461-NFPA 1-2013 [Section No. 69.6.1.1.9]

69.6.1.1.9
Cylinders being transported by vehicles shall be positioned in accordance with Table 69.6.1.1.9.

Table 69.6.1.1.9 Orientation of Cylinders on Vehicles

<table>
<thead>
<tr>
<th>Propane Capacity of Cylinder</th>
<th>Open Vehicles</th>
<th>Enclosed Spaces of Vehicles</th>
</tr>
</thead>
<tbody>
<tr>
<td>lb m³ kg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤45 0.47 ≤20</td>
<td>Any position</td>
<td></td>
</tr>
<tr>
<td>&gt;45 ≥0.47 &gt;20</td>
<td>Relief valve in communication with the vapor space</td>
<td>Any position</td>
</tr>
<tr>
<td>≤4.2 0.046 ≤1.9</td>
<td></td>
<td>Relief valve in communication with the vapor space</td>
</tr>
<tr>
<td>&gt;4.2 &gt;0.046 &gt;1.9</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

[58:Table 9.3.2.9]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc

Committee Statement

Committee Statement: Extract update.
Response Message:
Second Revision No. 462-NFPA 1-2013 [Section No. 69.6.2.3.4]

69.6.2.3.4
All valves shall be closed before the vehicle is moved indoors. Delivery hose or valve outlets shall be plugged or capped before the vehicle is moved indoors. [58: 9.7.3.4]

69.6.2.3.5
Delivery hose or valve outlets shall be plugged or capped before the vehicle is moved indoors. [58: 9.7.3.5]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Wed Aug 21 10:53:24 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
69.6.2.3.6 Vehicles carrying or containing LP-Gas shall only be parked in buildings complying with Chapter 10 of NFPA 58 and located on premises owned or under the control of the operator of such vehicles where the following provisions are met:

(1) The public shall be excluded from such buildings.

(2) Floor level ventilation shall be provided in all parts of the building where such vehicles are parked.

(3) Leaks in the vehicle LP-Gas systems shall be repaired before the vehicle is moved indoors.

(4) Primary shutoff valves on cargo tanks and other LP-Gas containers on the vehicle (except propulsion engine fuel containers) shall be closed and delivery hose outlets plugged or capped to contain system pressure before the vehicle is moved indoors.

(5) Primary shutoff valves on LP-Gas propulsion engine fuel containers shall be closed while the vehicle is parked.

(6) No LP-Gas container shall be located near a source of heat or within the direct path of hot air being blown from a blower-type heater.

(7) LP-Gas containers shall be gauged or weighed to determine that they are not filled beyond the maximum filling limit according to Section 7.4 of NFPA 58. [58: 9.7.3.5]
Where vehicles are serviced or repaired indoors, the following shall apply:

(1) When it is necessary to move a vehicle into any building located on premises owned or operated by the operator of such vehicle for service on engine or chassis, the provisions of 69.6.2.3.6 shall apply.

(2) When it is necessary to move a vehicle carrying or containing LP-Gas into any public garage or repair facility for service on the engine or chassis, the provisions of 69.6.2.3.1 shall apply, or the driver or a qualified representative of an LP-Gas operator shall be in attendance at all times while the vehicle is indoors, and the following shall apply:

(a) Leaks in the vehicle LP-Gas systems shall be repaired before the vehicle is moved indoors.
(b) Primary shutoff valves on cargo tanks, portable containers, and other LP-Gas containers installed on the vehicle (other than propulsion engine fuel containers) shall be closed.
(c) LP-Gas liquid shall be removed from the piping, pump, meter, delivery hose, and related equipment and the pressure therein reduced to approximately atmospheric before the vehicle is moved inside.
(d) Delivery hose or valve outlets shall be plugged or capped before the vehicle is moved indoors.
(e) No container shall be located near a source of heat or within the direct path of hot air blown from a blower or from a blower-type heater.
(f) LP-Gas containers shall be gauged or weighed to determine that they are not filled beyond the maximum filling capacity in accordance with Section 7.4 of NFPA 58. [58: 9.7.3.6]
69.6.2.3.8
If repair work or servicing is to be performed on a cargo tank vehicle system, all LP-Gas shall be removed
from the cargo tank and piping, and the system shall be thoroughly purged before the vehicle is moved
indoors. [58:9.7.3.2 8 ]
A.3.3.30.6 High-Rise Building.

It is the intent of this definition that, in determining the level from which the highest occupiable floor is to be measured, the enforcing agency should exercise reasonable judgment, including consideration of overall accessibility to the building by fire department personnel and vehicular equipment. Where a building is situated on a sloping terrain and there is building access on more than one level, the enforcing agency might select the level that provides the most logical and adequate fire department access.

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
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Submittal Date: Thu Aug 22 16:32:44 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
A.13.6.2.4.1.3 Extra Hazard s.

Extra (high) hazard occupancies could consist of woodworking; vehicle repair; aircraft and boat servicing; cooking areas; individual product display showrooms; product convention center displays; and storage and manufacturing processes such as painting, dipping, and coating, including flammable liquid handling. Also included is warehousing or in-process storage of other than Class I and Class II commodities.

Committee Statement

Committee Statement: Extract update. Relocated to A.13.6.2.4.1.3 via separate second revision.

Response Message:
Second Revision No. 30-NFPA 1-2013 [ Section No. A.3.3.47.2 ]

A.13.6.2.4.1.1 Light Hazard s.

Light (low)-hazard occupancies can include some buildings or rooms occupied as offices, classrooms, churches, assembly halls, guest room areas of hotels or motels, and so forth. This classification anticipates that the majority of content items are either noncombustible or so arranged that a fire is not likely to spread rapidly. Small amounts of Class B flammables used for duplicating machines, art departments, and so forth, are included, provided that they are kept in closed containers and safely stored. [10: A.5.4.1.1]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Fri Jul 12 13:52:56 EDT 2013

Committee Statement

Committee Statement: Extract update. Relocated to A.13.6.2.4.1.1 via separate second revision.
Response Message:
A.13.6.2.4.1.2 Ordinary Hazard s.

Ordinary *(moderate)* hazard occupancies could consist of dining areas, mercantile shops and allied storage, light manufacturing, research operations, auto showrooms, parking garages, workshop or support service areas of light *(low)* hazard occupancies, and warehouses containing Class I or Class II commodities as defined by NFPA 13—*Standard for the Installation of Sprinkler Systems*. [10: A.5.4.1.2]

A Class I commodity is defined by NFPA 13 as a noncombustible product that meets one of the following criteria:

1. Is placed directly on wooden pallets
2. Is placed in single-layer corrugated cartons, with or without single-thickness cardboard dividers, with or without pallets
3. Is shrink-wrapped or paper-wrapped as a unit load, with or without pallets

[10: A.5.4.1.2]

A Class II commodity is defined by NFPA 13 as a noncombustible product that is in slatted wooden crates, solid wood boxes, multiple-layered corrugated cartons, or equivalent combustible packaging material, with or without pallets. [10:A.5.4.1.2]

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Committee Statement

Committee Statement: Extract update. Relocated to A.13.6.2.4.1.2 via separate second revision.
Response Message:
Second Revision No. 125-NFPA 1-2013 [ Section No. A.3.3.80 ]

A.3.3.80 Corrosive Material.
A chemical is considered to be corrosive if it destroys or irreversibly changes the structure of the tissue at the site of contact within a specified period of time using one of the in vivo or in vitro OECD test methods authorized in 49 CFR Part 173.137. For purposes of this code, this term does not refer to action on inanimate surfaces (e.g., steel or aluminum). Available testing data produced prior to September 30, 1995 from the test method in Appendix A to 49 CFR Part 173 in effect on October 1, 1994 can also be used to determine the corrosivity of a material. [A.3.3.61.4]
A.3.3.106 Existing.
See A.3.3.30.5, Existing Building. [101:A.3.3.79 81]

Submitter Information Verification

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Submittal Date: Fri Aug 09 16:46:21 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
A.3.3.108 Exit.
Exits include exterior exit doors, exit passageways, horizontal exits, exit stairs, and exit ramps. In the case of a stairway, the exit includes the stair enclosure, the door to the stair enclosure, stairs and landings inside the enclosure, the door from the stair enclosure to the outside or to the level of exit discharge, and any exit passageway and its associated doors, if such are provided, so as to discharge the stair directly to the outside. In the case of a door leading directly from the street floor to the street or open air, the exit comprises only the door.

Doors of small individual rooms, as in hotels, while constituting exit access from the room, are not referred to as exits, except where they lead directly to the outside of the building from the street floor.

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Submittal Date: Fri Aug 09 16:47:31 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
A.3.3.108.1 Horizontal Exit.
Horizontal exits should not be confused with egress through doors in smoke barriers. Doors in smoke barriers are designed only for temporary protection against smoke, whereas horizontal exits provide protection against serious fire for a relatively long period of time in addition to providing immediate protection from smoke. (See 7.2.4 of NFPA 101.) [101:A.3.3.108.1]
A.3.3.113 Explosive Material.

The term **explosive material** includes, but is not limited to, dynamite, **Black Powder**, pellet powder, initiating explosives, detonators, safety fuses, squibs, detonating cord, igniter cord, igniters, and **Display Fireworks 1.3G (Class B, Special)**. The term **explosive** includes any material determined to be within the scope of Title 18, United States Code, Chapter 40, and also includes any material classified as an explosive, other than Consumer Fireworks 1.4G (Class C, Common), by the Hazardous Materials Regulations of the U.S. Department of Transportation (DOT) in 49 CFR. [5000: A.3.3.407.3]

The former classification system used by the DOT included the terms **high explosive** and **low explosive**, as further defined in A.3.3.388.3.2 3.3.406.3.2 of NFPA 5000. These terms remain in use by the U.S. Bureau of Alcohol, Tobacco, and Firearms (BATF) or explosives. Explosive materials classified as hazard Class 1 are further defined under the current system applied by DOT. Compatibility group letters are used in concert with division numbers to specify further limitations on each division noted. For example, the letter G (as in 1.4G) identifies substances or articles that contain a pyrotechnic substance and similar materials. UN/DOT Class 1 Explosives are defined as follows:

1. **Division 1.1** explosives are explosives that are a mass explosion hazard, which is a hazard that instantaneously affects almost the entire load.
2. **Division 1.2** explosives are explosives that are a projection hazard but not a mass explosion hazard.
3. **Division 1.3** explosives are explosives that are a fire hazard and either a minor blast hazard or a minor projection hazard, or both, but not a mass explosion hazard.
4. **Division 1.4** explosives are explosives that pose a minor explosion hazard and meet both of the following criteria:
   a. The explosive effects are largely confined to the package, and no projection of fragments of appreciable size or range is to be expected.
   b. An external fire cannot cause virtually instantaneous explosion of almost the entire contents of the package.
5. **Division 1.5** explosives are very insensitive explosives that are comprised of substances that are a mass explosion hazard, but are so insensitive that there is very little probability of initiation or of transition from burning to detonation under normal conditions of transport.
6. **Division 1.6** explosives are extremely insensitive articles that are not a mass explosion hazard, that are comprised of articles that contain only extremely insensitive detonating substances, and that demonstrate a negligible probability of accidental initiation or propagation. [5000: A.3.3.406.3]

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Committee Statement

Committee Statement: Extract update.
A.3.3.118.2 Interior Finish.
Interior finish is not intended to apply to surfaces within spaces such as those that are concealed or inaccessible. Furnishings that, in some cases, might be secured in place for functional reasons should not be considered as interior finish. [101: A.3.3.90.92.2]

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Committee Statement

Committee Statement: Extract update.
Response Message:
A.3.3.118.3 Interior Floor Finish.
Interior floor finish includes coverings applied over a normal finished floor or stair treads and risers. [101: A.3.3.90.92.3]

Submitter Information Verification

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Submital Date: Fri Aug 09 16:51:03 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
A.3.3.134 Flame Spread.
See Section 10.2 of NFPA 101. [101:A.3.3.110 112]

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Committee Statement

Committee Statement: Extract update.
Response Message:
A.3.3.138.1 Gross Floor Area.
Where the term floor area is used, it should be understood to be gross floor area, unless otherwise specified. [5000:A.3.3.35 34.8.1]

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Submittal Date: Thu Aug 22 16:40:55 EDT 2013

Committee Statement
Committee Statement: Extract update.
Response Message:
A.3.3.143.1 Compressed Gas.
The states of a compressed gas are categorized as follows:

1. Nonliquefied compressed gases are gases, other than those in solution, that are in a packaging under the charged pressure and are entirely gaseous at a temperature of 68°F (20°C).

2. Liquefied compressed gases are gases that, in a packaging under the charged pressure, and are partially liquid at a temperature of 68°F (20°C). Cryogenic fluids represent a transient state of a gas that is created through the use of refrigeration. Cryogenic fluids cannot exist in the liquid form or partial liquid form at temperatures of 68°F (20°C); hence, they are not "compressed gases" as defined.

3. Compressed gases in solution are nonliquefied gases that are dissolved in a solvent.

4. Compressed gas mixtures consist of a mixture of two or more compressed gases contained in a packaging, the hazard properties of which are represented by the properties of the mixture as a whole. [55: .A.3.3.43.1]
A.3.3.143.12  Other Gas.

A gas classified as an "other gas" might be a nonflammable gas or an inert gas. [55:A.3.3.43 49.9]

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Submittal Date: Mon Jul 15 11:18:37 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message: 
Unstable reactive materials are subdivided into five classifications. Class 4 materials are materials that in themselves are readily capable of detonation or explosive decomposition or explosive reaction at normal temperatures and pressures. They include the following:

1. Materials that are sensitive to localized thermal or mechanical shock at normal temperatures and pressures
2. Materials that have an instantaneous power density (product of heat of reaction and reaction rate) at 482°F (250°C) of 1000 W/mL or greater

Class 3 materials are materials that in themselves are capable of detonation or explosive decomposition or explosive reaction but require a strong initiating source or heat under confinement before initiation. Class 3 materials include the following:

1. Materials that have an instantaneous power density (product of heat of reaction and reaction rate) at 482°F (250°C) at or above 100 W/mL and below 1000 W/mL
2. Materials that are sensitive to thermal or mechanical shock at elevated temperatures and pressures
3. Materials that react explosively with water without requiring heat or confinement

Class 2 materials are materials that readily undergo violent chemical change at elevated temperatures and pressures, including the following:

1. Materials that have an instantaneous power density (product of heat of reaction and reaction rate) at 482°F (250°C) at or above 10 W/mL and below 100 W/mL
2. Materials that react violently with water or form potentially explosive mixtures with water

Class 1 materials are materials that in themselves are normally stable but that can become unstable at elevated temperatures and pressures, including the following:

1. Materials that have an instantaneous power density (product of heat of reaction and reaction rate) at 482°F (250°C) at or above 0.01 W/mL and below 10 W/mL
2. Materials that react vigorously with water, but not violently
3. Materials that change or decompose on exposure to air, light, or moisture

Class 0 materials are materials that in themselves are normally stable, even under fire conditions, including the following:

1. Materials that have an instantaneous power density (product of heat of reaction and reaction rate) at 482°F (250°C) below 0.01 W/mL
2. Materials that do not react with water
3. Materials that do not exhibit an exotherm at temperatures less than or equal to 932°F (500°C) when tested by differential scanning calorimetry [55: A.3.3.43.14]

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### Committee Statement

**Committee Statement:** Extract update.

**Response Message:**

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Submittal Date: Mon Jul 15 11:21:13 EDT 2013

Committee Statement: Extract update.

Response Message:
A.3.3.145 Gas Room
Gas rooms must be constructed and utilized in accordance with Section 6.4 of NFPA 55. [55: A.3.3.47]

Submitter Information Verification
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Committee Statement
Committee Statement: Extract update.
Response Message:
A.3.3.151 Hazard Rating.
The criteria for hazard rating are as defined in NFPA 704. [55:A.3.3.51 56]
A.3.3.161 Immediately Dangerous to Life and Health (IDLH).

This level is established by the National Institute for Occupational Safety and Health (NIOSH). If adequate data do not exist for precise establishment of IDLH, an independent certified industrial hygienist, industrial toxicologist, or appropriate regulatory agency should make such determination.
A.3.3.170.1 Ceiling Limit.
The ceiling limits utilized are to be those published in 29 CFR 1910.1000. [5000:A.3.3.370 371 .1]

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Committee Statement
Committee Statement: Extract update.
Response Message: 
A.3.3.181.14  Toxic Material.

While categorization is basically simple in application, the degree of hazard depends on many variables that should be carefully considered individually and in combination. Some examples include the following:

(1) Materials wherein the toxic component or mixtures thereof are inextricably bound and cannot be released so there is little or no potential for exposure.

(2) Nonfriable solid hazardous materials existing in product forms and in the demonstrated absence of inhalable particles that might not present the same inhalation hazard as the chemical components existing in a friable state.

(3) Mixtures of toxic materials with ordinary materials, such as water, that might not warrant classification as toxic. Any hazard evaluation that is required for the precise categorization of toxic material is required to be performed by experienced, technically competent persons.

Any hazard evaluation that is required for the precise categorization of toxic material is required to be performed by experienced, technically competent persons.

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Submittal Date: Thu Jul 18 12:12:27 EDT 2013

Committee Statement

Committee Statement: Editorial.
Response Message:
A.3.3.184 Means of Egress.
A means of egress comprises the vertical and horizontal travel and includes intervening room spaces, doorways, hallways, corridors, passageways, balconies, ramps, stairs, elevators, enclosures, lobbies, escalators, horizontal exits, courts, and yards. [101:A.3.3.170 172]
A.3.3.191.1 Ambulatory Health Care Occupancy.

It is not the intent that occupants be considered to be incapable of self-preservation just because they are in a wheelchair or use assistive walking devices, such as a cane, a walker, or crutches. Rather it is the intent to address emergency care centers that receive patients who have been rendered incapable of self-preservation due to the emergency, such as being rendered unconscious as a result of an accident or being unable to move due to sudden illness. [101: A.3.3.190.1]

It is not the intent that the term anesthesia be limited to general anesthesia. [101:A.3.3.188 190 .1]
A.3.3.191.2 Apartment Building.
The Code specifies that, wherever there are three or more living units in a building, the building is considered an apartment building and is required to comply with Chapter 24 or Chapter 31 of NFPA 5000, as appropriate. Townhouse units are considered to be apartment buildings if there are three or more units in the building. The type of wall required between units in order to consider them to be separate buildings is normally established by the AHJ. If the units are separated by a wall of sufficient fire resistance and structural integrity to be considered as separate buildings, then the provisions of Chapter 22 of NFPA 5000, apply to each townhouse. Condominium status is a form of ownership, not occupancy; for example, there are condominium warehouses, condominium apartments, and condominium offices. [5000 101:A.3.3.69.4 36.3]
A.3.3.191.3  Assembly Occupancy.

Assembly occupancies might include the following:

1. Armories
2. Assembly halls
3. Auditoriums
4. Bowling lanes
5. Club rooms
6. College and university classrooms, 50 persons and over
7. Conference rooms
8. Courtrooms
9. Dance halls
10. Drinking establishments
11. Exhibition halls
12. Gymnasiums
13. Libraries
14. Mortuary chapels
15. Motion picture theaters
16. Museums
17. Passenger stations and terminals of air, surface, underground, and marine public transportation facilities
18. Places of religious worship
19. Pool rooms
20. Recreation piers
21. Restaurants
22. Skating rinks
23. Special amusement buildings, regardless of occupant load
24. Theaters

Assembly occupancies are characterized by the presence or potential presence of crowds with attendant panic hazard in case of fire or other emergency. They are generally open or occasionally open to the public, and the occupants, who are present voluntarily, are not ordinarily subject to discipline or control. Such buildings are ordinarily occupied by able-bodied persons and are not used for sleeping purposes. Special conference rooms, snack areas, and other areas incidental to, and under the control of, the management of other occupancies, such as offices, fall under the 50-person limitation.

Restaurants and drinking establishments with an occupant load of fewer than 50 persons should be classified as mercantile occupancies.

For special amusement buildings, see 12.4. Z 8 and 13.4. Z 8 of NFPA 101. [101: A.3.3. 188 190 2]
Committee Statement

Committee Statement: Extract update.
Response Message:
A.3.3.191.5 Business Occupancy.

Business occupancies include the following:

1. Air traffic control towers (ATCTs)

2. City halls

3. College and university instructional buildings, classrooms under 50 persons, and instructional laboratories

4. Courthouses

5. Dentists' offices

6. Doctors' offices

7. General offices

8. Outpatient Clinics (ambulatory)

9. Town halls

Doctors' and dentists' offices are included, unless of such character as to be classified as ambulatory health care occupancies. (See 3.3.191.1.)

Birth centers should be classified as business occupancies if they are occupied by fewer than four patients, not including infants, at any one time; not providing sleeping facilities for four or more occupants; and not providing treatment procedures that render four or more patients, not including infants, incapable of self-preservation at any one time. For birth centers occupied by patients not meeting these parameters, see Chapter 18 or Chapter 19 of NFPA 101, as appropriate.

Service facilities common to city office buildings such as newsstands, lunch counters serving fewer than 50 persons, barber shops, and beauty parlors are included in the business occupancy group.

City halls, town halls, and courthouses are included in the business occupancy group insofar as their principal function is the transaction of public business and the keeping of books and records. Insofar as they are used for assembly purposes, they are classified as assembly occupancies.

In evaluating the appropriate classification of laboratories, the AHJ should treat each case individually, based on the extent and nature of the associated hazards. For laboratories within the scope of NFPA 45, the occupancies are defined in NFPA 45, Section 3.3, as follows:

- Noninstructional labs are considered industrial.
- Labs within the scope of NFPA 99 are considered health care.
- Instructional labs for grades 12 and below are considered educational.
- Labs for grades above grade 12 and Class D labs are business occupancies.

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**Committee Statement**

Committee Statement: Extract update.

Response Message:
A.3.3.191.6 Day-Care Home.
A day-care home is generally located within a dwelling unit. [101:A.3.3.140.1 142.1]

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Committee Statement

Committee Statement: Extract update.
Response Message:
A.3.3.191.7 Day-Care Occupancy.

Day-care occupancies include the following:

1. Adult day-care occupancies, except where part of a health care occupancy
2. Child day-care occupancies
3. Day-care homes
4. Kindergarten classes that are incidental to a child day-care occupancy
5. Nursery schools

In areas where public schools offer only half-day kindergarten programs, many child day-care occupancies offer state-approved kindergarten classes for children who need full-day care. Because these classes are normally incidental to the day-care occupancy, the requirements of the day-care occupancy should be followed.

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Committee Statement

Committee Statement: Extract update.
Response Message:
Detention and correctional occupancies include the following:

1. Adult and juvenile substance abuse centers
2. Adult and juvenile work camps
3. Adult community residential centers
4. Adult correctional institutions
5. Adult local detention facilities
6. Juvenile community residential centers
7. Juvenile detention facilities
8. Juvenile training schools

It is not the intent to classify as detention and correctional occupancies the areas of health care occupancies where doors are locked against patient egress where needed for the clinical needs of the patients. For example, a dementia treatment center can be adequately protected by the health care occupancies requirements of Chapter 19 of NFPA 101. [See 19.1.1.1.5, 19.2.2.2.2, 19.2.2.2.4(1), and 19.2.2.2.6 of NFPA 101.]

The one-resident threshold requirement of 23.1.1.4.6 of NFPA 101 is not meant to force a residential occupancy, where security is imposed on one or more occupants, to be reclassified as a detention and correctional occupancy. [101:A.23.1.1.1.6]
A.3.3.191.9 Dormitory.
Rooms within dormitories intended for the use of individuals for combined living and sleeping purposes are guest rooms or guest suites. Examples of dormitories are college dormitories, fraternity and sorority houses, and military barracks. [101:A.3.3.64 65]
A.3.3.191.10 Educational Occupancy.

Educational occupancies include the following:

1. Academies
2. Kindergartens
3. Schools

An educational occupancy is distinguished from an assembly occupancy in that the same occupants are regularly present.

In evaluating the appropriate classification of laboratories, the AHJ should treat each case individually, based on the extent and nature of the associated hazards. For laboratories within the scope of NFPA 45, the occupancies are defined in NFPA 45, Section 3.3, as follows:

- Noninstructional labs are considered industrial.
- Labs within the scope of NFPA 99 are considered health care.
- Instructional labs for grades 12 and below are considered educational.
- Labs for grades above grade 12 and Class D labs are business occupancies.

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Committee Statement

Committee Statement: Extract update.
Response Message:
A.3.3.191.11 Health Care Occupancy.

Health care occupancies include the following:

- Ambulatory health care facilities
- Hospitals
- Limited care facilities
- Nursing homes

[101: A.3.3.190.7]

Occupants of health care occupancies typically have physical or mental illness, disease, or infirmity. They also include infants, convalescents, or infirm aged persons.

In evaluating the appropriate classification of laboratories, the AHJ should treat each case individually, based on the extent and nature of the associated hazards. For laboratories within the scope of NFPA 45, the occupancies are defined in NFPA 45, Section 3.3, as follows:

- Noninstructional labs are considered industrial.
- Labs within the scope of NFPA 99 are considered health care.
- Instructional labs for grades 12 and below are considered educational.
- Labs for grades above grade 12 and Class D labs are business occupancies.

[5000: A.3.3.444.7]

It is not the intent to consider occupants incapable of self-preservation because they are in a wheelchair or use assistive walking devices, such as a cane, a walker, or crutches.

[101: A.3.3.190.7]
A.3.3.191.13  Hotel.
So-called apartment hotels should be classified as hotels, because they are potentially subject to the same transient occupancy as hotels. Transients are those who occupy accommodations for less than 30 days. [101:A.3.3.143 145]
Industrial Occupancies include the following:

1. Drycleaning plants
2. Factories of all kinds
3. Food processing plants
4. Gas plants
5. Hangars (for servicing/maintenance)
6. Laundries
7. Power plants
8. Pumping stations
9. Refineries
10. Sawmills
11. Telephone exchanges

In evaluating the appropriate classification of laboratories, the AHJ should treat each case individually, based on the extent and nature of the associated hazards. Some laboratories are classified as occupancies other than industrial; for example, a physical therapy laboratory or a computer laboratory.

For laboratories within the scope of NFPA 45, the occupancies are defined in NFPA 45, Section 3.3, as follows:

- Noninstructional labs are considered industrial.
- Labs within the scope of NFPA 99 are considered health care.
- Instructional labs for grades 12 and below are considered educational.
- Labs for grades above grade 12 and Class D labs are business occupancies.

For laboratories within the scope of NFPA 45, the occupancies are defined in NFPA 45, Section 3.3, as follows:

1. Noninstructional labs are considered industrial.
2. Labs within the scope of NFPA 99 are considered health care.
3. Instructional labs for grades 12 and below are considered educational.
4. Labs for grades above grade 12 and Class D labs are business occupancies.
Committee Statement

Committee Statement: Extract update.
Response Message:
Limited Care Facility.

Limited care facilities and residential board and care occupancies both provide care to people with physical and mental limitations. However, the goals and programs of the two types of occupancies differ greatly. The requirements in NFPA 101 for limited care facilities are based on the assumption that these are medical facilities, that they provide medical care and treatment, and that the patients are not trained to respond to the fire alarm; that is, the patients do not participate in fire drills but, rather, await rescue. (See Section 18.7 of NFPA 101.)

The requirements for residential board and care occupancies are based on the assumption that the residents are provided with personal care and activities that foster continued independence, that the residents are encouraged and taught to overcome their limitations, and that most residents, including all residents in prompt and slow homes, are trained to respond to fire drills to the extent they are able. Residents are required to participate in fire drills. (See Section 32.7 of NFPA 101.)

Persons with Alzheimer’s and related illnesses might be located in a nursing home, limited care facility, or board and care facility. For such persons, it is the level of care provided, not the medical diagnosis, that matters for the purposes of determining whether the facility should meet the requirements for limited care. Where personal care is provided but medical or custodial care is not, the limited care definition does not typically apply. It is the intent of this definition that it not apply to persons not receiving medical or custodial care, provided they are able to assist in their own evacuation, regardless of their medical diagnosis.

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Committee Statement

Committee Statement: Extract update.
Response Message:
A.3.3.191.17 Mercantile Occupancy.
Mercantile occupancies include the following:

(1) Auction rooms
(2) Department stores
(3) Drugstores
(4) Restaurants with fewer than 50 persons
(5) Shopping centers
(6) Supermarkets

[101 : A.3.3.190.9]
Office, storage, and service facilities incidental to the sale of merchandise and located in the same building should be considered part of the mercantile occupancy classification. [5000 : A.3.3.444.9]

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Committee Statement

Committee Statement: Extract update.
Response Message:
A.3.3.191.25 Residential Board and Care Occupancy.
The following are examples of facilities that are classified as residential board and care occupancies:

(1) Group housing arrangement for physically or mentally handicapped persons who normally attend school in the community, attend worship in the community, or otherwise use community facilities

(2) Group housing arrangement for physically or mentally handicapped persons who are undergoing training in preparation for independent living, for paid employment, or for other mainstream community activities

(3) Group housing arrangement for the elderly that provides personal care services but does not provide nursing care

(4) Facilities for social rehabilitation, alcoholism, drug abuse, or mental health problems that contain a group housing arrangement and that provide personal care services but do not provide acute care

(5) Assisted living facilities

(6) Other group housing arrangements that provide personal care services but not nursing care [5000: A.3.3.444.12] [101: A.3.3.190.12]

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Committee Statement

Committee Statement: Extract update.
Response Message:
A.3.3.191.26 Residential Occupancy.
Residential occupancies are treated as separate occupancies in this Code as follows:

1. One- and two-family dwellings (Chapter 24 of NFPA 101)
2. Lodging or rooming houses (Chapter 26 of NFPA 101)
3. Hotels, motels, and dormitories (Chapters 28 and 29 of NFPA 101)
4. Apartment buildings (Chapters 30 and 31 of NFPA 101) [101: A.3.3.188.13]

Submitter Information Verification

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Submittal Date: Fri Aug 09 17:07:07 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
A.3.3.191.28 Storage Occupancy.
Storage occupancies include the following:

(1) Barns
(2) Bulk oil storage
(3) Cold storage
(4) Freight terminals
(5) Grain elevators
(6) Hangars (for storage only)
(7) Parking structures

Stables
(8) Truck and marine terminals
(9) Warehouses

[101: A.3.3.190.15]
Storage occupancies are characterized by the presence of relatively small numbers of persons in proportion to the area.

[5000: A.3.3.444.15]

Committee Statement

Committee Statement: Extract update.
Response Message:
### A.3.3.191.28.1 Mini-Storage Building.

Mini-storage buildings are typically designed to accommodate relatively small transient tenants who are often private individuals or persons who own small businesses and need additional storage space that is generally very small in area to accommodate their short-term storage needs. This definition is not intended to apply to large warehouse buildings designed to be rented or leased to relatively large multiple tenants who are generally storing their wares in conjunction with their businesses. Garage units that are primarily intended for vehicular storage as part of a multifamily development are not intended to be classified as mini-storage buildings. [5000: A.3.3.68.13]

### Submitter Information Verification

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- **Submittal Date:** Fri Aug 23 09:36:13 EDT 2013

### Committee Statement

- **Committee Statement:** Extract update.
- **Response Message:**
### A.3.3.197.1 Organic Peroxide Formulation.
Terms such as accelerator, catalyst, initiator, curing agent, and so forth, are sometimes used to describe organic peroxide formulations. These terms are misleading because they can also refer to materials that are not or do not contain organic peroxides, some of which might present increased hazard when mixed with organic peroxides. [400:A.3.3.67 70 ]

### Submitter Information Verification

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<td>Submittal Date:</td>
<td>Thu Jul 18 12:15:46 EDT 2013</td>
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### Committee Statement

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<th>Extract update.</th>
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<td>Response Message:</td>
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</table>
A.3.3.209  Personal Care.
Personal care involves responsibility for the safety of the resident while inside the building. Personal care might include daily awareness by management of the resident's functioning and whereabouts, making and reminding a resident of appointments, the ability and readiness for intervention in the event of a resident experiencing a crisis, supervision in the areas of nutrition and medication, and actual provision of transient medical care. [101:A.3.3.206 208]
A.3.3.225 Ramp.
See 7.2.5 of NFPA 101. [101:A.3.3.219 221]
A.3.3.242 Smoke Partition.

A smoke partition is not required to have a fire resistance rating. [101:A.3.3.254 256]
### A.3.3.245.1 Combustible Particulate Solid.

Combustible particulate solids include dusts, fibers, fines, chips, chunks, flakes, and mixtures of these. A definition of this breadth is necessary because it is crucial to address the fact that there is attrition of the material as it is conveyed. Pieces and particles rub against each other and collide with the walls of the duct as they travel through the system. The rubbing and collision break down the material and produce a mixture of pieces and much finer particles, called "dusts." Consequently, it is expected that every conveying system produces dusts, regardless of the starting size of the material, as an inherent by-product of the conveying process. [69: A.3.3.5]

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- **Zip:**
- **Submittal Date:** Fri Aug 16 09:12:04 EDT 2013

### Committee Statement

- **Committee Statement:** Extract update.
- **Response Message:**
A.3.3.245.2 Flammable Solid.
Flammable solids include finely divided solid materials that, when dispersed in air as a cloud, could be ignited and cause an explosion. [400:A.3.3.43 45]

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Submitter Full Name: Gregory Harrington
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Submittal Date: Thu Jul 18 12:44:27 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
A.3.3.258.1 Occupiable Story.

Stories used exclusively for mechanical equipment rooms, elevator penthouses, and similar spaces are
not occupiable stories. A story occupied by people on a regular basis. [101:A.3.3.268.1 269.1]
### A.3.3.262 Structure.
The term *structure* is to be understood as if followed by the words *or portion thereof*. (See also A.3.3.30, *Building*.) [101:A.3.3.271-272]

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- **Submitter Full Name**: Gregory Harrington
- **Organization**: National Fire Protection Assoc

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**Committee Statement**

- **Committee Statement**: Extract update.
- **Response Message**: 
A.3.3.264.4 Bulk Oxygen System.

The bulk oxygen system terminates at the source valve, which is commonly the point where oxygen at service pressure first enters the supply line or a piece of equipment that utilizes the oxygen gas or liquid. The oxygen containers are either stationary or movable, and the oxygen is stored as a compressed gas or cryogenic fluid.\[55: \text{A.3.3.15}\]

Bulk oxygen systems can be used to supply gas in either its compressed gaseous or liquefied form. Systems that may be used to supply both gaseous and liquid forms are referred to as hybrid systems. The following bulk oxygen systems are typical of those in use:

1. When the primary supply of the gas as stored is from a compressed gaseous source that is used in the compressed and gaseous form, the bulk oxygen system is said to be a bulk compressed oxygen gas system.
2. When the primary supply of the gas as stored is in a liquid form and the system is designed to transfer only liquid, the system is said to be a bulk liquefied oxygen system.
3. When the primary supply of the gas as stored is in a liquid form and the system is designed to transfer or store the gas in a compressed gaseous form, with or without a feature that may also allow the subsequent transfer and use of liquid, the bulk oxygen system is said to be a hybrid bulk oxygen system. For the purposes of the application of the code, a hybrid system is viewed as a bulk liquefied oxygen system.

\[55: \text{A.3.3.15}\]

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Submitter Full Name: Gregory Harrington
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Submittal Date: Mon Jul 15 11:31:41 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
A.3.3.264.13 Standpipe System. This arrangement is accomplished by means of connections to water supply systems or by means of pumps, tanks, and other equipment necessary to provide an adequate supply of water to the hose connections. [14: A.3.3.42 15]

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Submittal Date: Fri Jul 12 16:28:31 EDT 2013

Committee Statement

Committee Statement: Extract update.

Response Message:
A.3.3.273 Use
Examples of use include, but are not limited to, blending, mixing, reacting, distillation, heating or cooling, pumping, compressing, drying, screening, filling, loading and unloading, repackaging, scrubbing, absorbing, neutralizing, and incineration. [400: A.3.3.87]

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Submittal Date: Thu Jul 18 12:54:55 EDT 2013

Committee Statement
Committee Statement: Relocated from A.60.2.19.
Response Message:
A.3.3.278.1 Closed System Use.
Examples of closed systems for solids and liquids include reaction process operations and product conveyed through a piping system into a closed vessel, system, or piece of equipment. [400:A.3.3.83 87.1]

A.3.3.278.2 Open System Use.
Examples of open systems for solids and liquids include dispensing from or into open beakers or containers, and dip tank operations, and plating tank operations. [400:A.8. 3.3.83 87.2]
### A.3.4.7 Exposure Fire.

An exposure fire usually refers to a fire that starts outside a building, such as a wildlands fire or vehicle fire, and that, consequently, exposes the building to a fire. [101:A.3.3.88](#)

#### Submitter Information Verification

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<th>Submitter Full Name:</th>
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#### Committee Statement

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<td>Response Message:</td>
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A.3.4.8 Fire Model.

Due to the complex nature of the principles involved, models are often packaged as computer software. Any relevant input data, assumptions, and limitations needed to properly implement the model will be attached to the fire models. [101:A.3.3.99 101]
A.3.4.9  Fire Scenario.

A fire scenario defines the conditions under which a proposed design is expected to meet the fire safety goals. Factors typically include fuel characteristics, ignition sources, ventilation, building characteristics, and occupant locations and characteristics. The term *fire scenario* includes more than the characteristics of the fire itself but excludes design specifications and any characteristics that do not vary from one fire to another; the latter are called assumptions. The term *fire scenario* is used here to mean only those specifications required to calculate the fire's development and effects, but, in other contexts, the term might be used to mean both the initial specifications and the subsequent development and effects (i.e., a complete description of fire from conditions prior to ignition to conditions following extinguishment).

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<td>Fri Aug 09 17:18:21 EDT 2013</td>
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Committee Statement

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<td>Response Message:</td>
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</table>
A.3.4.10 Fuel Load.
Fuel load includes interior finish and trim. [5000:A.3.3.384 385.3]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
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Submittal Date: Fri Aug 23 09:43:57 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
A.3.4.14 Performance Criteria.
Performance criteria are stated in engineering terms. Engineering terms include temperatures, radiant heat flux, and levels of exposure to fire products. Performance criteria provide threshold values used to evaluate a proposed design.

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Committee Statement
Committee Statement: Extract update.
Response Message:
A.3.4.15 Proposed Design.
The design team might develop a number of trial designs that will be evaluated to determine whether they meet the performance criteria. One of the trial designs will be selected from those that meet the performance criteria for submission to the AHJ as the proposed design. [101 : A.3.3.218]

The proposed design is not necessarily limited to fire protection systems and building features. It also includes any component of the proposed design that is installed, established, or maintained for the purpose of life safety, without which the proposed design could fail to achieve specified performance criteria. Therefore, the proposed design often includes emergency procedures and organizational structures that are needed to meet the performance criteria specified for the proposed design. [101:A.3.3.216 218]

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Committee Statement

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Response Message:
### A.4.5.9.1(1)
Examples of such materials include steel, concrete, masonry, and glass. [5000:A.7.1.4.1.1(1)]

## Submitter Information Verification

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## Committee Statement

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<th>Committee Statement</th>
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<td>Response Message</td>
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</table>
A.10.8.2.1(3)
It is assumed that a majority of buildings will use a total evacuation strategy during a fire. It should be noted that evacuation from a building could occur for reasons other than a fire, but such other reasons are not the primary focus of the Code. As used herein, total evacuation is defined as the process in which all, or substantially all, occupants leave a building or facility in either an unmanaged or managed sequence or order. An alternative to total evacuation, is partial evacuation, which can be defined as the process in which a select portion of a building or facility is cleared or emptied of its occupants while occupants in other portions carry on normal activity. In either case, the evacuation process can be ordered or managed in accordance with an established priority in which some or all occupants of a building or facility clear their area and utilize means of egress routes. This is typically done so that the more endangered occupants are removed before occupants in less endangered areas. Alternative terms describing this sequencing or ordering of evacuation are staged evacuation and phased evacuation. \[\text{101: A.4.8.2.1(3)}\]

Table A.10.8.2.1(3) illustrates options for extent of management and extent of evacuation. Some of the options shown might not be appropriate. As noted in Table A.10.8.2.1(3), either total or partial evacuation can include staged (zoned) evacuation or phased evacuation, which is referred to as managed or controlled evacuation. It should also be noted that the evacuation process might not include relocation to the outside of the building but might instead include relocation to an area of refuge or might defend the occupants in place to minimize the need for evacuation. \[\text{101: A.4.8.2.1(3)}\]

Table A.10.8.2.1(3) Occupant Evacuation Strategies

<table>
<thead>
<tr>
<th>Extent of Evacuation</th>
<th>Managed Sequence</th>
<th>Unmanaged Sequence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shelter in place</td>
<td>No movement — shelter in place upon direction</td>
<td>No movement — shelter in place per prior instruction</td>
</tr>
<tr>
<td></td>
<td>Managed or controlled partial evacuation</td>
<td></td>
</tr>
<tr>
<td>Relocation or partial evacuation</td>
<td>In-building relocation on same floor</td>
<td>Unmanaged or uncontrolled partial evacuation movement</td>
</tr>
<tr>
<td></td>
<td>In-building relocation to different floors</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Occupants of some floors leave building</td>
<td></td>
</tr>
<tr>
<td>Total evacuation</td>
<td>Managed or controlled total evacuation</td>
<td>Unmanaged or uncontrolled total evacuation</td>
</tr>
</tbody>
</table>

\[\text{101: Table A.4.8.2.1(3)}\]

The different methods of evacuation are also used in several contexts throughout NFPA 101. Though most of the methods of evacuation are not specifically defined or do not have established criteria, various sections of NFPA 101 promulgate them as alternatives to total evacuation. The following sections of NFPA 101 discuss these alternatives in more detail:

1. Section 4.7 — Provides requirements for fire and relocation drills
2. 7.2.12 — Provides requirements for area of refuge
3. 7.2.4 — Provides requirements for horizontal exits
4. 9.6.3.6 — Provides the alarm signal requirements for different methods of evacuation
5. 9.6.3.9 — Permits automatically transmitted or live voice evacuation or relocation instructions to occupants and requires them in accordance with NFPA 72, National Fire Alarm and Signaling Code
6. 14.3.4.2.3 (also Chapter 15) — Describes alternative protection systems in educational occupancies
7. 18.1.1.2/18.1.1.3/Section 18.7 (also Chapter 19) — Provide methods of evacuation for health care occupancies
8. Chapters 22 and 23 — Provide methods of evacuation for detention and correctional occupancies, including the five groups of resident user categories
9. Chapters 32 and 33 — Provide methods of evacuation for residential board and care occupancies
10. 32.1.5/33.1.5 — For residential board and care occupancies, state that "no means of escape or means of egress shall be considered as complying with the minimum criteria for acceptance, unless..."
emergency evacuation drills are regularly conducted."

(11) 40.2.5.1.2 — For industrial occupancies, states that "ancillary facilities in special-purpose industrial occupancies where delayed evacuation is anticipated shall have not less than a 2-hour fire resistance–rated separation from the predominant industrial occupancy and shall have one means of egress that is separated from the predominant industrial occupancy by 2-hour fire resistance–rated construction". 

[101 : A.4.8.2.1(3)]

The method of evacuation should be accomplished in the context of the physical facilities, the type of activities undertaken, and the provisions for the capabilities of occupants (and staff, if available). Therefore, in addition to meeting the requirements of the Code, or when establishing an equivalency or a performance-based design, the following recommendations and general guidance information should be taken into account when designing, selecting, executing, and maintaining a method of evacuation:

(1) When choosing a method of evacuation, the available safe egress time (ASET) must always be greater than the required safe egress time (RSET).

(2) The occupants' characteristics will drive the method of evacuation. For example, occupants might be incapable of evacuating themselves because of age, physical or mental disabilities, physical restraint, or a combination thereof. However, some buildings might be staffed with people who could assist in evacuating. Therefore, the method of evacuation is dependent on the ability of occupants to move as a group, with or without assistance. For more information, see the definitions under the term Evacuation Capability in Chapter 3 of NFPA 101.

(3) An alternative method of evacuation might or might not have a faster evacuation time than a total evacuation. However, the priority of evacuation should be such that the occupants in the most danger are given a higher priority. This prioritization will ensure that occupants more intimate with the fire will have a faster evacuation time.

(4) Design, construction, and compartmentation are also variables in choosing a method of evacuation. The design, construction, and compartmentation should limit the development and spread of a fire and smoke and reduce the need for occupant evacuation. The fire should be limited to the room or compartment of fire origin. Therefore, the following factors need to be considered:

   (a) Overall fire resistance rating of the building
   (b) Fire-rated compartmentation provided with the building
   (c) Number and arrangement of the means of egress

(5) Fire safety systems should be installed that complement the method of evacuation, and should include consideration of the following:

   (a) Detection of fire
   (b) Control of fire development
   (c) Confinement of the effects of fire
   (d) Extinguishment of fire
   (e) Provision of refuge or evacuation facilities, or both

(6) One of the most important fire safety systems is the fire alarm and communication system, particularly the notification system. The fire alarm system should be in accordance with NFPA 72, National Fire Alarm and Signaling Code, and should take into account the following:

   (a) Initial notification of only the occupants in the affected zone(s) (e.g., zone of fire origin and adjacent zones)
   (b) Provisions to notify occupants in other unaffected zones to allow orderly evacuation of the entire building
   (c) Need for live voice communication
   (d) Reliability of the fire alarm and communication system

(7) The capabilities of the staff assisting in the evacuation process should be considered in determining the method of evacuation.
The ability of the fire department to interact with the evacuation should be analyzed. It is important to determine if the fire department can assist in the evacuation or if fire department operations hinder the evacuation efforts.

Evacuation scenarios for hazards that are normally outside of the scope of the Code should be considered to the extent practicable. (See 4.3.1 of NFPA 101.)

Consideration should be given to the desire of the occupants to self-evacuate, especially if the nature of the building or the fire warrants evacuation in the minds of the occupants. Self-evacuation might also be initiated by communication between the occupants themselves through face-to-face contact, mobile phones, and so forth.

An investigation period, a delay in the notification of occupants after the first activation of the fire alarm, could help to reduce the number of false alarms and unnecessary evacuations. However, a limit to such a delay should be established before a general alarm is sounded, such as positive alarm sequence as defined in NFPA 72, National Fire Alarm and Signaling Code.

Consideration should be given to the need for an evacuation that might be necessary for a scenario other than a fire (e.g., bomb threat, earthquake).

Contingency plans should be established in the event the fire alarm and communication system fail, which might facilitate the need for total evacuation.

The means of egress systems should be properly maintained to ensure the dependability of the method of evacuation.

Fire prevention policies or procedures, or both, should be implemented that reduce the chance of a fire (e.g., limiting smoking or providing fire-safe trash cans).

The method of evacuation should be properly documented, and written forms of communication should be provided to all of the occupants, which might include sign postings throughout the building. Consideration should be given to the development of documentation for an operation and maintenance manual or a fire emergency plan, or both.

Emergency egress drills should be performed on a regular basis. For more information, see Section 4.7 of NFPA 101.

The AHJ should also be consulted when developing the method of evacuation.

Measures should be in place and be employed to sequence or control the order of a total evacuation, so that such evacuations proceed in a reasonably safe, efficient manner. Such measures include special attention to the evacuation capabilities and needs of occupants with disabilities, either permanent or temporary. For comprehensive guidance on facilitating life safety for such populations, go to www.nfpa.org. For specific guidance on stair descent travel devices, see A.7.2.12.2.3(2) of NFPA 101, ANSI/RESNA ED-1, Emergency Stair Travel Devices Used by individuals with Disabilities.

In larger buildings, especially high-rise buildings, it is recommended that all evacuations — whether partial or total — be managed to sequence or control the order in which certain occupants are evacuated from their origin areas and to make use of available means of egress. In high-rise buildings, the exit stairs, at any level, are designed to accommodate the egress flow of only a very small portion of the occupants — from only one or a few stories, and within a relatively short time period — on the order of a few minutes. In case of a fire, only the immediately affected floor(s) should be given priority use of the means of egress serving that floor(s). Other floors should then be given priority use of the means of egress, depending on the anticipated spread of the fire and its combustion products, and to clear the purpose of clearing certain floors to facilitate eventual fire service operations. Typically, this means that the one or two floors above and below a fire floor will have secondary priority immediately after the fire floor. Depending on where combustion products move, for example, upwards through a building with cool-weather stack effect, the next priority floors will be the uppermost occupied floors in the building.

Generally, in order to minimize evacuation time for most or all of a relatively tall building to be evacuated, occupants from upper floors should have priority use of exit stairs. For people descending many stories of stairs, this priority will maximize their opportunity to take rest stops without unduly extending their overall time to evacuate a building. Thus, the precedence behavior of evacuees should be that people already in an exit stair should normally not defer to people attempting to enter the exit stair from lower floors, except for those lower floors most directly impacted by a fire or other imminent danger. Notably, this is contrary to the often observed behavior of evacuees in high-rise building evacuations where lower floor precedence behavior occurs. (Similarly, in the most commonly observed behavior of people normally disembarking a
passenger airliner, people within the aisle defer to people entering the aisle, so that the areas closest to
the exit typically clear first.) Changing, and generally managing, the sequence or order within which
egress occurs will require effectively informing building occupants and evaluating resulting performance in
a program of education, training, and drills. [101: A.4.8.2.1(3)]

When designing the method of evacuation for a complex building, all forms of egress should be
considered. For example, consideration could be given to an elevator evacuation system. An elevator
evacuation system involves an elevator design that provides protection from fire effects so that elevators
can be used safely for egress. See 7.2.13 and A.7.2.12.2.4 of NFPA 101 for more information.
[101: A.4.8.2.1(3)]

For further guidance, see the following publications:

1. SFPE Engineering Guide to Human Behavior in Fire, which provides information on occupant
characteristics, response to fire cues, decision making in fire situations, and methods for predicting
evacuation time

2. NFPA Fire Protection Handbook, 19th edition, Section 21, Chapter 29, which provides good
methodology for managing exposures and determining the method of evacuation

3. NFPA Fire Protection Handbook, 19th edition, Section 1320, which provides further commentary
on methods of evacuation for different occupancies

4. SFPE Handbook of Fire Protection Engineering, Section 3, Chapters 11–13, which provide an
overview of some of the research on methods of evacuation and methods for predicting evacuation
times

[101:A.4.8.2.1(3)]

Submitter Information Verification

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City: State: Zip: Submittal Date: Fri Aug 09 17:27:47 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
### A.11.1.5.2

See Table A.11.1.5.2.

Table A.11.1.5.2 Recommended Extension Cord Sizes for Portable Electric Tools

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<tr>
<td></td>
<td>2.1-3.4</td>
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<td>115 V</td>
</tr>
<tr>
<td></td>
<td>230 V</td>
</tr>
<tr>
<td></td>
<td>115 V</td>
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<td></td>
<td>230 V</td>
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<td>115 V</td>
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</tr>
<tr>
<td>800</td>
<td>10</td>
</tr>
<tr>
<td>1000</td>
<td>8</td>
</tr>
</tbody>
</table>

#### Notes:

1. Size is based on current equivalent to 150 percent of full load of tool and a loss in voltage of not over 5 volts.
2. If voltage is already low at the source (outlet), voltage should be increased to standard, or a larger cord than listed should be used to minimize the total voltage drop.

[70B: Table 29.5.1]
Building construction types are defined in NFPA 220, *Standard on Types of Building Construction*. The following material is extracted verbatim from NFPA 220 and is included here as a convenience for users of this Code. Any requests for Formal Interpretations (FIs) or Tentative Interim Amendments (TIAs) on the following material should be directed to the Technical Committee on Building Construction. See Table A.12.2.1 for fire resistance ratings for each building construction type.

Table A.12.2.1 Fire Resistance Ratings for Type I through Type V Construction (hr)

<table>
<thead>
<tr>
<th></th>
<th>Type I</th>
<th>Type II</th>
<th>Type III</th>
<th>Type IV</th>
<th>Type V</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Exterior Bearing Walls</strong>&lt;sup&gt;a&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supporting more than one floor, columns, or other bearing walls</td>
<td>4 3 2 1 0&lt;sup&gt;b&lt;/sup&gt;</td>
<td>2 2 2 1 0&lt;sup&gt;b&lt;/sup&gt;</td>
<td>1 1 1 1 0&lt;sup&gt;b&lt;/sup&gt;</td>
<td>0 0 0 0 0&lt;sup&gt;b&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>Supporting one floor only</td>
<td>4 3 2 1 0&lt;sup&gt;b&lt;/sup&gt;</td>
<td>2 2 2 1 0&lt;sup&gt;b&lt;/sup&gt;</td>
<td>1 1 1 1 0&lt;sup&gt;b&lt;/sup&gt;</td>
<td>0 0 0 0 0&lt;sup&gt;b&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>Supporting a roof only</td>
<td>4 3 1 1 0&lt;sup&gt;b&lt;/sup&gt;</td>
<td>2 2 2 1 0&lt;sup&gt;b&lt;/sup&gt;</td>
<td>1 1 1 1 0&lt;sup&gt;b&lt;/sup&gt;</td>
<td>0 0 0 0 0&lt;sup&gt;b&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td><strong>Interior Bearing Walls</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supporting more than one floor, columns, or other bearing walls</td>
<td>4 3 2 1 0</td>
<td>2 2 2 1 0</td>
<td>1 1 1 1 0</td>
<td>0 0 0 0 0</td>
<td></td>
</tr>
<tr>
<td>Supporting one floor only</td>
<td>3 2 2 1 0</td>
<td>1 1 1 1 0</td>
<td>0 0 0 0 0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supporting roofs only</td>
<td>3 2 1 1 0</td>
<td>1 1 1 1 0</td>
<td>0 0 0 0 0</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Columns</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supporting more than one floor, columns, or other bearing walls</td>
<td>4 3 2 1 0</td>
<td>2 2 2 1 0</td>
<td>1 1 1 1 0</td>
<td>0 0 0 0 0</td>
<td></td>
</tr>
<tr>
<td>Supporting one floor only</td>
<td>3 2 2 1 0</td>
<td>1 1 1 1 0</td>
<td>0 0 0 0 0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supporting roofs only</td>
<td>3 2 1 1 0</td>
<td>1 1 1 1 0</td>
<td>0 0 0 0 0</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Beams, Girders, Trusses, and Arches</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supporting more than one floor, columns, or other bearing walls</td>
<td>4 3 2 1 0</td>
<td>2 2 2 1 0</td>
<td>1 1 1 1 0</td>
<td>0 0 0 0 0</td>
<td></td>
</tr>
<tr>
<td>Supporting one floor only</td>
<td>2 2 2 1 0</td>
<td>1 1 1 1 0</td>
<td>0 0 0 0 0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supporting roofs only</td>
<td>2 2 1 1 0</td>
<td>1 1 1 1 0</td>
<td>0 0 0 0 0</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Floor-Ceiling Assemblies</strong></td>
<td>2 2 2 1 0</td>
<td>1 1 1 1 0</td>
<td>0 0 0 0 0</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Roof-Ceiling Assemblies</strong></td>
<td>2 1½ 1 1 0</td>
<td>1 1 1 1 0</td>
<td>0 0 0 0 0</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Interior Nonbearing Walls</strong></td>
<td>0 0 0 0 0</td>
<td>0 0 0 0 0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Exterior Nonbearing Walls</strong>&lt;sup&gt;c&lt;/sup&gt;</td>
<td>0&lt;sup&gt;b&lt;/sup&gt;</td>
<td>0&lt;sup&gt;b&lt;/sup&gt;</td>
<td>0&lt;sup&gt;b&lt;/sup&gt;</td>
<td>0&lt;sup&gt;b&lt;/sup&gt;</td>
<td>0&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

Note: H = heavy timber members (see NFPA 220, text for requirements).

<sup>a</sup>See NFPA 5000, 7.3.2.1.

<sup>b</sup>See NFPA 5000, Section 7.3.

<sup>c</sup>See 4.3.2.12, 4.4.2.3, and 4.5.6.8 of NFPA 220.

[220: Table 4.1.1]

*Type I and Type II Construction.* Type I (442 or 332) and Type II (222, 111, or 000) construction shall be those types in which the fire walls, structural elements, walls, arches, floors, and roofs are of approved noncombustible or limited-combustible materials. [220:4.3.1]

*Type III Construction.* Type III (211 or 200) construction shall be that type in which exterior walls and structural elements that are portions of exterior walls are of approved noncombustible or limited-combustible materials, and in which fire walls, interior structural elements, walls, arches, floors, and roofs, are entirely or partially of wood of smaller dimensions than required for Type IV construction or are of approved noncombustible, limited-combustible, or other approved combustible materials. [220:4.4.1]
**Type IV Construction.** Type IV (2HH) construction shall be that type in which fire walls, exterior walls, and interior bearing walls and structural elements that are portions of such walls are of approved noncombustible or limited-combustible materials. Other interior structural elements, arches, floors, and roofs shall be of solid or laminated wood without concealed spaces and shall comply with the allowable dimensions of 4.5.5 of NFPA 220. [220:4.5.1]

*Type V (111 or 000) Construction.* Type V (111 or 000) construction shall be that type in which structural elements, walls, arches, floors, and roofs are entirely or partially of wood or other approved material. [220:4.6]

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Submittal Date: Tue Jul 16 14:59:35 EDT 2013

**Committee Statement**

Committee Statement: Extract update.  
Response Message:
Second Revision No. 96-NFPA 1-2013 [ Section No. A.12.4.6.4.1 ]

A.12.4.6.4.1
Field modifications beyond the scope of the prescriptive allowances permitted by 4.1.3.2 through 4.1.3.4 of NFPA 80 typically result in voiding the fire rating of the assembly. Paragraph 4.1.4.2.1 12.4.6.4.1 of NFPA 80 provides an alternative method whereby proposed modifications can be documented and presented to the labeling agency prior to work commencing. Where the proposed modification(s) are within the parameters of the manufacturer’s procedures and will not degrade the fire resistance of the assembly, the labeling agency is permitted to authorize such modifications without a requirement for a subsequent field inspection. [ 80: A.5.1.4.1]

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Committee Statement
Committee Statement: Extract update.
Response Message:
A.12.4.6.6.2.3
Installation of new fire door assemblies should be documented in the same manner and level of detail as the periodic inspections and testing of fire door assemblies required by 12.4.7.3, 12.4.6.6.3 and 12.4.7.4. Records of new fire door assemblies should be retained with the periodic inspections and testing records for the facility. [80:A.5.2.2.3]

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Committee Statement
Committee Statement: Extract update.
Response Message:
A.12.4.6.6.3.1
Visual inspection and functional testing of fire door and fire window assemblies require the persons performing the inspections and testing to be thoroughly knowledgeable of the various components and systems that are used to create fire-rated assemblies. In the case of swinging doors with builders hardware, these assemblies are comprised of labeled and listed components from several manufacturers. Often, the listing of the door leaf determines which products are permitted to be installed on an assembly. Inspectors of swinging doors with builders hardware need to be able to recognize which components can or cannot be used on specific assemblies, which requires training and experience on behalf of the persons performing the inspections. Additionally, AHJs need to be able to rely on the competency, expertise, experience, and knowledge of the fire door inspectors in their jurisdiction. [80:A.5.2.3.8.1]

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Committee Statement

Committee Statement: Extract update.
Response Message:
Second Revision No. 346-NFPA 1-2013 [Section No. A.12.5.5.4]

A.12.5.5.4
Light-transmitting plastics are used for a variety of purposes, including light diffusers, exterior wall panels, skylights, canopies, glazing, and the like. Previous editions of NFPA 101 have not addressed the use of light-transmitting plastics. Light-transmitting plastics will not normally be used in applications representative of interior finishes. Accordingly, NFPA 255, ASTM E 84, Standard Method of Test of Test Method for Surface Burning Characteristics of Building Materials, or ANSI/UL 723, Standard for Test for Surface Burning Characteristics of Building Materials, can produce test results that might or might not apply. [101:A.10.2.4.4]

Light-transmitting plastics are regulated by model building codes such as NFPA 5000, Building Construction and Safety Code. Model building codes provide adequate regulation for most applications of light-transmitting plastics. Where an AHJ determines that a use is contemplated that differs from uses regulated by model building codes, light-transmitting plastics in such applications can be substantiated by fire tests that demonstrate the combustibility characteristics of the light-transmitting plastics for the use intended under actual fire conditions. [101:A.10.2.4.4]

For additional information on light transmitting plastics, see Section 48.7 of NFPA 5000. [101:A.10.2.4.4]

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Committee Statement

Committee Statement: Extract update.
Response Message:
A.12.7.1(4)
Walls in good condition with lath and plaster, or gypsum board of not less than $\frac{1}{2}$ in. (13 mm) on each side, can be considered as providing at least a minimum $\frac{1}{2}$-hour fire resistance rating. Additional information on archaic material assemblies can be found in Appendix I, Annex O, of NFPA 914, Code for Fire Protection of Historic Structures. [101:A.8.3.1.1(4)]
A.12.7.5.1
Firestop materials become systems when installed to the listed firestop system design from an accredited testing laboratory. Installation of firestop materials to the listed system should meet all limitations of the system. [101 : A.8.3.5.1] FM 4991, Standard for the Approval of Firestop Contractors, and the UL Qualified Firestop Contractor Program both provide a quantified qualification of the firestop installer who understands the detailed installation requirements.

There are management system–based contractor approval or qualification programs offered by third-party, independent companies that quantitatively qualify a company to install firestop materials that become systems after proper installation. In each program, there is an industry firestop exam that gives the company a basis to appoint a ‘Designated Responsible Individual’. [101 : A.8.3.5.1]

Then, the third party firm audits the firestop company’s product and systems documentation records in conjunction with the company’s management system operational policies and procedures to verify company compliance does as it says it does. An audit also takes place on a project site to verify that the management system is working. [101 : A.8.3.5.1]

Where the configuration of a penetrating item or group of items is such that a listed system is determined to be nonexistent and reconfiguration of the penetrations or fire–resistance–rated assembly is determined to be impractical or impossible, alternative methods for maintaining the integrity of the required fire–resistance rating of the assembly should be permitted to be established using an engineering analysis based on a comparison of listed systems prepared by a manufacturer’s technical representative of the systems specified, by the laboratory that conducted the original test, or by a professional engineer. [101 : A.8.3.5.1]


Independent inspection paid for by owner is in many specifications and referenced in this appendix using ASTM E 2174 and ASTM E 2393, Standard Practice for On-Site Inspection of Installed Fire Resistive Joint Systems and Perimeter Fire Barriers. As a result, there is an accreditation program available for firestop special inspection agencies. [101 : A.8.3.5.1]
A.13.3.1.6
Properly designed automatic sprinkler systems provide the dual function of both automatic alarms and automatic extinguishment. Dual function is not provided in those cases where early detection of incipient fire and early notification of occupants are needed to initiate actions in behalf of life safety earlier than can be expected from heat-sensitive fire detectors. [101:A.9.7.1.34]
A.13.3.1.8.1

NFPA 72, National Fire Alarm and Signaling Code, provides details of standard practice in sprinkler supervision. Subject to the approval of the authority having jurisdiction AHJ, 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 should include, but should not be limited to, control valves, water tank levels and temperatures, tank pressure, and air pressure on dry-pipe valves. [101:A.9.7.2.1]

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. [101:A.9.7.2.1]
A.13.3.2.11.5
This exception is limited to hospitals, as nursing homes and many limited care facilities might have more combustibles within the closets. The limited amount of clothing found in the small clothes closets in hospital patient rooms is typically far less than the amount of combustibles in casework cabinets that do not require sprinkler protection, such as nurse servers. In many hospitals, especially new hospitals, it is difficult to make a distinction between clothes closets and cabinet work. The exception is far more restrictive than similar exceptions for hotels and apartment buildings. NFPA 13 already permits the omission of sprinklers in wardrobes [see 8.1.1(7) of NFPA 13]. It is not the intent of 18.3.5.10 of NFPA 101 to affect the wardrobe provisions of NFPA 13. It is the intent that the sprinkler protection in the room covers the closet as if there were no door on the closet. (See 8.5.3.2.3 of NFPA 13.)

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Committee Statement
Committee Statement: Extract update.
Response Message:
Second Revision No. 352-NFPA 1-2013 [Section No. A.13.3.2.12.8]

A.13.3.2.12.9

The provisions of 13.3.2.12.9(6) and (7) are not intended to supplant NFPA 13, which requires that residential sprinklers with more than a 10°F (5.6°C) difference in temperature rating not be mixed within a room. Currently there are no additional prohibitions in NFPA 13 on the mixing of sprinklers having different thermal response characteristics. Conversely, there are no design parameters to make practical the mixing of residential and other types of sprinklers. [101:A.19.3.5.8]

Residential sprinklers are considered acceptable in patient sleeping rooms of all health care facilities, even though not specifically listed for this purpose in all cases. [101:A.19.3.5.8]

Submitter Information Verification

<table>
<thead>
<tr>
<th>Submitter Full Name: Gregory Harrington</th>
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</thead>
<tbody>
<tr>
<td>Organization: National Fire Protection Assoc</td>
</tr>
<tr>
<td>Street Address:</td>
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<tr>
<td>City:</td>
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<td>State:</td>
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<td>Submittal Date: Wed Aug 14 10:15:09 EDT 2013</td>
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Committee Statement

<table>
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<th>Committee Statement: Extract update.</th>
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<tbody>
<tr>
<td>Response Message:</td>
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</table>
This exception is limited to hospitals, as nursing homes and many limited care facilities might have more combustibles within the closets. The limited amount of clothing found in the small clothes closets in hospital patient rooms is typically far less than the amount of combustibles in casework cabinets that do not require sprinkler protection, such as nurse servers. In many hospitals, especially new hospitals, it is difficult to make a distinction between clothes closets and cabinet work. The exception is far more restrictive than similar exceptions for hotels and apartment buildings. NFPA 13 already permits the omission of sprinklers in wardrobes [see 8.1.1(7) of NFPA 13]. It is not the intent of 19.3.5.10 of NFPA 101: 13.3.2.12.11 to affect the wardrobe provisions of NFPA 13. It is the intent that the sprinkler protection in the room covers the closet as if there were no door on the closet. (See 8.5.3.2.3 of NFPA 13.) [101:A.19.3.5.10]

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Committee Statement

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Response Message:
A.13.3.2.18.7
For example, if an Option 3 sprinkler system were being used to justify use of Class C wall finish in an exit enclosure, the sprinkler system would need to be extended into the exit enclosure, even if the rest of the requirements for Option 3 did not require the sprinklers in the exit enclosure. [101:A.31.3.5.40 11]
Second Revision No. 355-NFPA 1-2013 [ Section No. A.13.3.2.19.2.3 ]

A.13.3.2.19.2.3
The decision to permit the use of the criteria from NFPA 13D in these occupancies is based on the following:

(1) The desire to obtain a level of fire suppression and control that is approximately equivalent to that delivered by residential facilities protected by such systems (See A.1.1 in NFPA 13D.)

(2) The fact that potential fire exposure and challenge to the suppression system in a small lodging and rooming occupancy is of the same nature and no more severe than that found in residences [101 : A.26.3.6.2.3]

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Committee Statement

Committee Statement: Extract update.
Response Message:
A.13.3.3.4.1.5

Recalled products should be replaced or remedied. Remedies include entrance into a program for scheduled replacement. Such replacement or remedial product should be installed in accordance with the manufacturer's instructions and the appropriate NFPA installation standards. A recalled product is a product subject to a statute or administrative regulation specifically requiring the manufacturer, importer, distributor, wholesaler, or retailer of a product, or any combination of such entities, to recall the product, or a product voluntarily recalled by a combination of such entities. [25: A.4.1.5]

Needed corrections and repairs should be classified as an impairment, critical deficiency, or noncritical deficiency according to the effect on the fire protection system and the nature of the hazard protected. [25: A.4.1.5]

Impairments are the highest priority problem found during inspection, testing, and maintenance and should be corrected as soon as possible. The fire protection system cannot provide an adequate response to a fire, and implementation of impairment procedures outlined in 13.3.3.6 is required until the impairment is corrected. [25: A.4.1.5]

Critical deficiencies need to be corrected in a timely fashion. The fire protection system is still capable of performing, but its performance can be impacted and the implementation of impairment procedures might not be needed. However, special consideration must be given to the hazard in the determination of the classification. A deficiency that is critical for one hazard might be an impairment in another. [25: A.4.1.5]

Noncritical deficiencies do not affect the performance of the fire protection system but should be corrected in a reasonable time period so that the system can be properly inspected, tested, and maintained. [25: A.4.1.5]

Assembly occupancies, health care facilities, prisons, high- rise buildings, and other occupancies where there is a significant life safety exposure is significant, or the facility facilities that cannot be evacuated in a timely manner, require special consideration. As an example, a nonfunctioning waterflow alarm might be considered a critical deficiency in a storage warehouse but an impairment in a hospital. [25: A.4.1.5]

High hazard occupancies where early response to a fire is critical also require special consideration. A small number of painted sprinklers could be considered an impairment for a system protecting a high hazard occupancy but might be considered a critical deficiency in a metal working shop. [25: A.4.1.5]

A table showing classifications of needed corrections and repairs is shown in Section E.1, Table A.3.3.7, of NFPA 25. [25: A.4.1.5]

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Committee Statement

Committee Statement: Extract update.
Response Message:
A.13.3.4.1.5.1
System deficiencies not explained by normal wear and tear, such as hydraulic shock, can often be indicators of system problems and should be investigated and evaluated by a qualified person or engineer. Failure to address these issues could lead to catastrophic failure. Examples of deficiencies that can be caused by issues beyond normal wear and tear are as follows:

(1) Pressure gauge deficiencies as follows:
   (a) Gauge not returning to zero
   (b) Gauge off scale
   (c) Gauge with bent needle

(2) Support devices deficiencies as follows:
   (a) Bent hangers and/or rods
   (b) Hangers pulled out/off structure
   (c) Indication of pipe or hanger movement such as the following:
      i. Hanger scrape marks on pipe, exposed pipe surface where pipe and hangers are painted
      ii. Firestop material damaged at pipe penetration of fire-rated assembly

(3) Unexplained system damage as follows:
   (a) Unexplained system damage beyond normal wear and tear
   (b) Bent or broken shafts on valves
   (c) Bent or broken valve clappers
   (d) Unexplained leakage at branch lines, cross main, or feed main piping
   (e) Unexplained leakage at closed nipples
   (f) Loose bolts on flanges and couplings

(4) Fire pump deficiencies as follows:
   (a) Fire pump driver out of alignment
   (b) Vibration of fire pump and/or driver
   (c) Unusual sprinkler system piping noises (sharp report, loud bang) [25: A.4.1.5.1]

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Committee Statement
Committee Statement: Extract update.
Response Message:
A.13.3.4.1.7
See Annex E of NFPA 25 for an example of a hazard evaluation form. A hazard evaluation is not part of a system inspection. [25:A.4.1.7]

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Committee Statement

Committee Statement: Extract update.
Response Message:
A.13.3.3.4.1.9
The information needed to provide the appropriate sign can be found with the original system installation and acceptance testing documentation. If these records are not available, the owner needs to obtain this information or have the system evaluated for the purposes of providing the information required on the sign. Where the evaluation shows that the design utilized the pipe schedule design approach, a further analysis beyond that needed to provide the information for the sign would not be required. [25: A.4.1.9]

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Committee Statement
Committee Statement: Extract update.
Response Message:
A.13.3.3.4.1.9.2
See Figure A.13.3.3.4.1.9.2 for a sample hydraulic information sign. [25: A.4.1.9.2]
Figure A.13.3.3.4.1.9.2 Sample Hydraulic Information Sign. [25:Figure A.4.1.9.2]

Submitter Information Verification

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Submittal Date: Wed Aug 21 16:51:29 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
A.13.3.4.3.1
Inspection reports used for system inspections should contain an “Owner’s Section” as shown in Figure A.13.3.4.3.1 that the property owner or designated representative shall complete. Typical records include, but are not limited to, valve inspections; flow, drain, and pump tests; and trip tests of dry pipe, deluge, and preaction valves. [25: A.4.3.1]

Acceptance test records should be retained for the life of the system or its special components. Subsequent test records should be retained for a period of 1 year after the next test. The comparison determines deterioration of system performance or condition and the need for further testing or maintenance. [25:A.4.3.1]

Figure A.13.3.4.3.1 Owner’s Section on Inspection Report. [25:Figure A.4.3.1]

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Submittal Date: Wed Aug 21 16:53:27 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
One sprinkler wrench design can be appropriate for many types of sprinklers and should not require multiple wrenches of the same design should not be required. [25:A.5.4.1.5.5]

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Committee Statement

Committee Statement: Extract update.
Response Message:
The minimum information in the list contained in the spare sprinkler cabinet should be marked with the following: a general description of the sprinkler, including upright, pendent, residential, ESFR, etc.; and the quantity of sprinklers that is to be maintained in the spare sprinkler cabinet. An example of the list is shown in Figure A.13.3.3.5.1.5.5.1(A).

1. General description of the sprinkler, including upright, pendent, residential, ESFR, and so forth.
2. Quantity of sprinklers that is to be maintained in the spare sprinkler cabinet.

An example of the list is shown in Figure A.13.3.3.5.1.5.6.1.
A.13.6.1.3.1
Listed and labeled halon portable fire extinguishers currently comply with Section 13.6 and have demonstrated compliance with the requirements of UL-1093, Standard for Halogenated Agent Fire Extinguishers, which also includes fire testing and rating criteria. As a result of the Montreal Protocol on Substances that Deplete the Ozone Layer, UL has withdrawn UL-1093. This does not imply that extinguishers that are listed and labeled to the requirements of UL-1093 are unsafe for use as fire extinguishers, nor does it mean that UL or the EPA is requiring halon extinguishers be removed from service. It does mean that UL will not accept new designs of halon extinguishers for testing or UL listing. It also means that no changes or updates are allowed to models that are currently listed models, which and that had previously demonstrated compliance to with UL 1093, by extinguisher manufacturers.

Extinguisher manufacturers are allowed to manufacture their current design of UL-listed halon extinguishers with the UL listing mark until October 2014. Halon extinguishers currently in use will continue to be listed beyond the 2014 date and should be permitted to be used to comply with the requirements of this section NFPA 10 and this Code when installed, inspected, and maintained in accordance with NFPA 10 and this section Code.

The listing and labeling organization identification marking may be in the form of a symbol of the organization. The product category marking should identify the extinguisher such as “Carbon Dioxide Fire Extinguisher”, “Dry Chemical Fire Extinguisher” and “Clean Agent Fire Extinguisher”. Extinguisher ratings should indicate the classification that includes fire type such as “A”, “B”, or “C” and the associated fire size. Examples of extinguisher ratings are 1-A: 5-B:C which designates a Class A (wood fire) rating with an associated fire size of 1 as described in ANSI/UL711/CAN/ULC-S508, Class B fire (flammable liquid) rating with an associated fire size of 5 as described in ANSI/UL711/CAN/ULC-S508, and Class C compatible rating as described in ANSI/UL711/CAN/ULC-S508.

Submitter Information Verification
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Submittal Date: Fri Jul 12 14:02:58 EDT 2013

Committee Statement
Committee Statement: Extract update.
Response Message:
A.13.6.1.3.2

AHJs should determine the acceptability and credibility of the organization listing or labeling fire extinguishers. Authorities should determine if the organization tests to all the requirements of NFPA 10. Factors such as the structure of the organization, its principal fields of endeavor, its reputation and established expertise, its involvement in the standards-writing process, and the extent of its follow-up service programs should all be assessed before recognition is given. [10:A.4.1.2]

The listing and labeling organization identification marking might be in the form of a symbol of the organization. The product category marking should identify the extinguisher, for example, “Carbon Dioxide Fire Extinguisher,” “Dry Chemical Fire Extinguisher,” or “Clean Agent Fire Extinguisher.” Extinguisher ratings should indicate the classification of fire type, such as A, B, or C, and the associated fire size. An example of an extinguisher rating is 1-A: 5-B:C, which designates a Class A fire (wood) rating with an associated fire size of 1, as described in ANSI/UL711, CAN/ULC-S508, *Standard for Rating and Testing of Fire Extinguishers*; a Class B fire (flammable liquid) rating with an associated fire size of 5, as described in ANSI/UL711, CAN/ULC-S508; and a Class C compatible rating as described in ANSI/UL711, CAN/ULC-S508. [10: A.4.1.2]
A.13.6.1.6.2
Fire extinguishers manufactured by companies that are no longer in business may remain in use if they meet the requirements of this standard NFPA 10 and this Code, and are maintained in accordance with the manufacturer’s service manual. When these extinguishers require recharging or maintenance and the required extinguishing agent or necessary repair parts are not available, the extinguishers should be removed from service. [10:A.4.4.2]
The following information pertains to Class D hazards:

1. Chemical reaction between burning metals and many extinguishing agents (including water) can range from explosive to inconsequential, depending in part on the type, form, and quantity of metal involved. In general, the hazards from a metal fire are significantly increased when such extinguishing agents are applied. The advantages and limitations of a wide variety of commercially available metal fire extinguishing agents are discussed in NFPA 484, *Standard for Combustible Metals*, and in Section 6, Chapter 26, of the NFPA *Fire Protection Handbook*. The MSDS of the Class D hazard being protected or the extinguisher manufacturer should be consulted.

2. The agents and fire extinguishers discussed in this section are of specialized types, and their use often involves special techniques peculiar to a particular combustible metal. A given agent will not necessarily control or extinguish all metal fires. Some agents are valuable in working with several metals; others are useful in combating only one type of metal fire. The AHJs should be consulted in each case to determine the desired protection for the particular hazard involved.

3. Certain combustible metals require special extinguishing agents or techniques. See NFPA 484, *Standard for Combustible Metals*, for additional information. If there is doubt, applicable NFPA NFPA 484 or the NFPA Fire Protection Guide to Hazardous Materials standards should be consulted or reference made to NFPA’s Fire Protection Guide to Hazardous Materials, (NFPA 49, Hazardous Chemicals Data, and NFPA 325, Guide to Fire Hazard Properties of Flammable Liquids, Gases, and Volatile Solids.) (Both NFPA 49 and NFPA 325 have been officially withdrawn from the National Fire Codes, but the information is still available contained in the NFPA’s Fire Protection Guide to Hazardous Materials.)

4. Reference should be made to the manufacturer’s recommendations for use and special techniques for extinguishing fires in various combustible metals.

5. Fire of high intensity can occur in certain metals. Ignition is generally the result of frictional heating, exposure to moisture, or exposure from a fire in other combustible materials. The greatest hazard exists when these metals are in the molten state or in finely divided forms of dust, turnings, or shavings. [ 10: A.5.3.2.4]

The properties of a wide variety of combustible metals and the agents available for extinguishing fires in these metals are discussed in Section 4, Chapter 16, and Section 6, Chapter 26, of NFPA 484 and the NFPA *Fire Protection Handbook*. [10:A.5.3.2.4]
A.13.6.2.3.2.6.1
ANSI/UL 2129, CAN/ULC-S566, Standard for Halocarbon Clean Agent Fire Extinguishers, and CAN/ULC-S512, Standard for Halogenated Agent Hand and Wheeled Fire Extinguishers, require halocarbon and halogenated agent nameplates to provide safety guidelines for avoiding overexposure to agent vapors when the agents are discharged into confined spaces. The UL minimum volume requirement for confined spaces is based on exposure to the agent in the absence of a fire and does not include considerations for fire or agent decomposition products. [10:A.5.3.2.6.1]

Submitter Information Verification

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Submittal Date: Fri Jul 12 14:27:48 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
Submitter Information Verification

Submitter Full Name: Gregory Harrington
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Submittal Date: Fri Jul 12 13:55:27 EDT 2013

Committee Statement

Committee Statement: Extract update. Relocates text from the A.3's.
Response Message:
A.13.6.2.5.5

Fire extinguishers for cooking media (vegetable or animal oils and fats) traditionally followed Table 13.6.3.3.1.1 of NFPA 10 for extra (high) hazard, requiring a minimum 40-B rated sodium bicarbonate or potassium bicarbonate dry chemical extinguisher. The evolution of high-efficiency cooking appliances and the change to hotter-burning vegetable shortening has created a more severe fire hazard. Testing has shown that wet chemical extinguishers have several times the cooking fire-extinguishing capability of a minimum 40-B rated sodium bicarbonate or potassium bicarbonate dry chemical extinguisher, which has prompted the creation of a new classification and a new listing test protocol. The test protocol is found in ANSI/UL 711, CAN/ULC-S508, *Standard for Rating and Fire Testing of Fire Extinguishers*, [10: A.5.5.5](#).

See NFPA 96, *Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations*, for further information. Persons in cooking areas need specific training on the use of extinguishers as an essential step for personal safety. Class K fire extinguishers equipped with extended wand-type discharge devices should not be used in a manner that results in subsurface injection of wet chemical extinguishing agents into hot cooking media. Subsurface injection causes a thermodynamic reaction comparable to an explosion. Class K fire extinguishers are no longer manufactured with extended wand-type discharge devices. [10:A.5.5.5]

### Submitter Information Verification

<table>
<thead>
<tr>
<th>Submitter Full Name:</th>
<th>Gregory Harrington</th>
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<tbody>
<tr>
<td>Organization:</td>
<td>National Fire Protection Assoc</td>
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<tr>
<td>Street Address:</td>
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<td>Fri Jul 12 14:31:08 EDT 2013</td>
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</tbody>
</table>

### Committee Statement

Committee Statement: Extract update.

Response Message:
A.13.6.2.5.5.3

Figure A.13.6.2.5.5.3(a) and Figure A.13.6.2.5.5.3(b) show the recommended wording for the Class K placard. Recommended size is 7 5⁄8 in. × 11 in. (193.194 mm × 279 mm). [10:A.5.5.5.3]

Figure A.13.6.2.5.5.3(a) Typical Class K Placard in English and Spanish. [10:Figure A.5.5.5.3(a)]

Figure A.13.6.2.5.5.3(b) Typical Class K Placard in English and French. [10:Figure A.5.5.5.3(b)]

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Submittal Date: Fri Jul 12 14:35:25 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
A dry chemical fire extinguisher containing ammonium compounds should not be used on oxidizers that contain chlorine. The reaction between the oxidizer and the ammonium salts can produce the explosive compound nitrogen trichloride (NCl₃). \[10:\text{A.5.5.7.2}\]

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- **Submittal Date:** Fri Jul 12 14:39:37 EDT 2013

**Committee Statement**

- **Committee Statement:** Extract update.
- **Response Message:**
A.13.6.2.5.8.1
Other non-listed agents may be used if acceptable to the AHJ. Other non-listed agents include: specially dried sand, dolomite, soda ash, lithium chloride, talc, foundry flux, and zirconium silicate or other agents shown to be effective. Consult NFPA 484 for use and limitations of these agents and other non-listed alternatives. [10:A.5.5.8.1]
Where Class D fire extinguishers operate much differently than hazards exist, it is common practice to place bulk quantities of extinguishing agent near the potential Class D hazard. Depending on the type of metal present, the Class D agent selected for the protection of the hazard might not be a listed fire-extinguishing agent. In the case of the production of lithium metal, the agent of choice is lithium chloride, which is feed stock to the electrolytic cell where the lithium metal is manufactured. The use of lithium chloride on a lithium fire will not poison the electrolytic cell so the cell would not have to be drained and relined with fire brick. There are several Class D agents that have been shown to be effective on specific Class D fires. Additional information on Class D agents is provided in NFPA 484.

The operation of Class D fire extinguishers is much different from that of dry chemical extinguishers rated for Class A, B, or C. The extinguishing agent from a Class D extinguisher should be applied to avoid spreading the combustible metal material and/or suspending the metal product in the air, which can result in an explosion by slowly applying the agent. The application of a Class D agent on burning metals are intended to control the fire and assist in the formation of oxide crust that limits combustion. This is accomplished by first encircling the combustible metal material with the agent and then covering the burning metal in a smothering action. It is important to note that metal fires involving large quantities of metal beyond the incipient stage are nearly impossible to control or extinguish with a Class D agent. In most cases, the metal will continue to burn after application of the agent in a controlled fashion until it is completely oxidized. Disturbing the oxide crust may result in reignition and open burning if complete extinguishment or oxidation of the metal and/or exclusion of oxygen has not occurred. Fires involving alkali earth metal and transitional metals will begin to form an oxide crust as they burn, which will limit open burning without the application of an extinguishing agent. Application of water or other extinguishing agents may result in an adverse reaction including the potential for an explosion. Burning metals may also draw moisture from concrete or asphalt which also maintains the potential for explosion. Large amounts of combustible metal materials involved in a fire can remain hot for some time and vigorously re-ignite if disturbed prior to complete extinguishment of the combustible metal materials. (See A.13.6.2.3.2.4.)

Where Class D fire hazards exist, it is common practice to place bulk quantities of extinguishing agent near the potential Class D hazard. Depending on what type of metal is present, the Class D agent selected for the protection of the hazard might not be a listed fire-extinguishing agent. In the case of the production of lithium metal, the agent of choice is lithium chloride as this material is feed stock to the electrolytic cell where the lithium metal is manufactured. The use of lithium chloride of a lithium fire will not poison the electrolytic cell so the cell would not have to be drained and relined with fire brick. There are several Class D agents that have been shown to be effective on specific Class D fires. Additional information on Class D agents is provided in NFPA 484.
Committee Statement

Committee Statement: Extract update.
Response Message:
A.13.6.4.1.2.3
This requirement is not intended to prevent service technicians from performing the inspections.

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Committee Statement
Committee Statement: Extract update.
Response Message:
A.13.6.4.2.2.1
Fire extinguishers in vehicles should be inspected at the beginning of a shift or whenever the vehicle is used. The inspection should ensure that the extinguisher is charged and ready for use. Extinguishers in compartments or trunks may become damaged or otherwise compromised because of weather exposure, other items in the compartment that are not being secured, or other factors.

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Committee Statement

Committee Statement: Extract update.
Response Message:
The annual maintenance of a fire extinguisher requires the services of a trained and certified technician who has the proper tools, listed parts, and appropriate manufacturer’s service manual. Maintenance of fire extinguishers should not be confused with inspection, which is a quick check of the extinguishers that is performed at least every 30 days. Because the detailed maintenance procedures for various extinguisher types and models differ, the specific procedures specified within service manuals need to be followed. [10: A.7.3.1]

The following list is a sample of maintenance procedures that should be followed to determine deficiencies that require additional attention to remediate the condition of the extinguisher as appropriate for rechargeable, stored-pressure, dry chemical, and halogenated agent hand portable fire extinguishers:

1. Visually examine the extinguisher for damage by removing the extinguisher from the hanger, bracket, or cabinet, and visually examine the extinguisher for damage, including pressure gauge, cylinder dents, repairs, general corrosion, hose or nozzle threads, handles, and levers.

2. Verify that the hanger, bracket, or cabinet is the proper one for the extinguisher.

3. Verify that the hanger, bracket, or cabinet is secure, undamaged, and properly mounted.

4. Verify that the nameplate operating instructions are legible and facing outward.

5. Confirm that the extinguisher model is not subject to recall and is not obsolete.

6. Verify the extinguisher records to determine internal examination and hydrostatic test intervals.

7. Thoroughly examine the cylinder for dents, damage, repairs, or corrosion.

8. Verify the pull pin functions properly and examine for damage or corrosion by removing the pull pin.

9. Verify that the handle and levers are undamaged and operable.

10. Verify that the valve stem is correctly extended and not corroded or damaged.

11. Verify that the gauge-operating pressure corresponds with the nameplate instructions.

12. Verify that the gauge face corresponds with the proper agent type.

13. Verify that the gauge threads are compatible with the valve body material.

14. Verify that the nozzle or hose assembly, or both are unobstructed by removing and examining the nozzle.

15. Confirm that the nozzle and hose assembly are correct for the model of extinguisher.

16. Verify that the hose and couplings are not cut, cracked, damaged, or deformed.

17. Examine internal valve port surfaces and threads for signs of leakage or corrosion by removing the nozzle or hose assembly and reinstalling the nozzle and hose assembly securely after examination.

18. Verify that the hose retention band is secure and properly adjusted.

19. Weigh the extinguisher and verify that it corresponds to the weight listed on the nameplate.

20. Reinstall the ring pin and install a new tamper seal.

21. Clean exposed extinguisher surfaces to remove any foreign material.

22. Record the maintenance on the extinguisher tag or label.

23. Return the extinguisher to the hanger, bracket, or cabinet.

[10: A.7.3.1] The following list is a sample of maintenance procedures that should be followed to determine deficiencies that require additional attention to remediate the condition of the extinguisher as appropriate for carbon dioxide hand portable fire extinguishers:

The following list is a sample of maintenance procedures that should be followed to determine deficiencies that require additional attention to remediate the condition of the extinguisher as appropriate for carbon dioxide hand portable fire extinguishers:

1. Visually examine the extinguisher for damage by removing the extinguisher from the hanger or cabinet, and visually examine the extinguisher for damage including cylinder dents, repairs, general corrosion, hose or nozzle threads, handles, and levers.

2. Verify that the bracket or cabinet is the proper one for the extinguisher.
(3) Verify that the bracket or cabinet is secure, undamaged, and properly mounted.

(4) Verify that the nameplate operating instructions are legible and facing outward.

(5) Confirm that the extinguisher model is not subject to recall and is not obsolete.

(6) Verify the extinguisher records to determine hydrostatic test intervals.

(7) Verify that the pull pin functions properly and examine for damage or corrosion by removing the pull pin.

(8) Verify: Examine the handle and levers to ensure that they are undamaged and operable.

(9) Verify that the valve stem is correctly extended and not corroded or damaged.

(10) Verify that the nozzle or hose assembly, or both are is unobstructed, by removing and examining the nozzle.

(11) Confirm that the nozzle and hose assembly are correct for the model of extinguisher.

(12) Verify that the hose and couplings are not cut, cracked, damaged, or deformed.

(13) Examine the discharge port for signs of leakage or corrosion by removing the nozzle or hose assembly and reinstalling the nozzle and hose assembly securely after examination.

(14) Conduct a conductivity test on the hose assembly.

(15) Affix the conductivity test label to hose assemblies that pass the conductivity test and replace hoses that fail the conductivity test.

(16) Verify that the safety assembly is not damaged or blocked.

(17) Verify that the hose retention band is secure and properly adjusted.

(18) Weigh the extinguisher to verify that it corresponds to the weight listed on the nameplate.

(19) Reinstall the ring pin and install a new tamper seal.

(20) Clean exposed extinguisher surfaces to remove any foreign material.

(21) Record the maintenance on the extinguisher tag or label.

(22) Return the extinguisher to the hanger, bracket, or cabinet.

[10: A.7.3.1]

The following list is a sample of maintenance procedures and checks that are commonly associated with pressurized water-type hand portable fire extinguishers:

(1) Visually examine the extinguisher for damage by removing the extinguisher from the hanger, bracket, or cabinet, and visually examine the extinguisher for damage, including pressure gauge, cylinder dents, repairs, general corrosion, hose or nozzle threads, handles, and levers.

(2) Verify that the hanger, bracket, or cabinet is the proper one for the extinguisher.

(3) Verify that the hanger, bracket, or cabinet is secure, undamaged, and properly mounted.

(4) Verify that the nameplate operating instructions are legible and facing outward.

(5) Confirm that the extinguisher model is not subject to recall and is not obsolete.

(6) Check the extinguisher records to determine hydrostatic test intervals.

(7) Verify that the pull pin functions properly and examine for damage or corrosion by removing the pull pin.

(8) Verify: Examine the handle and levers to ensure that they are undamaged and operable.

(9) Verify that the valve stem is correctly extended and not corroded or damaged.

(10) Verify that the pressure gauge is in the operable range.

(11) Verify that the gauge - operating pressure corresponds with the nameplate instructions.

(12) Verify that the gauge face corresponds with the proper agent type.

(13) Verify that the gauge threads are compatible with the valve body material.

(14) Verify that the nozzle or hose assembly, or both are is unobstructed by removing and examining the nozzle.
(15) Confirm that the nozzle and hose assembly are correct for the model of extinguisher.
(16) Verify that the hose and couplings are not cut, cracked, damaged, or deformed.
(17) Examine the internal valve port surfaces and threads for signs of leakage or corrosion by removing the nozzle or hose assembly and reinstalling the nozzle and hose assembly securely after examination.
(18) Verify that the hose retention band is secure and properly adjusted.
(19) Weigh the extinguisher to verify that it corresponds to the weight listed on the nameplate.
(20) Reinstall the ring pin and install a new tamper seal.
(21) Clean exposed extinguisher surfaces to remove any foreign material.
(22) Record the maintenance on the extinguisher tag or label.
(23) Return the extinguisher to the hanger, bracket, or cabinet.

[10; A.7.3.1]
The following list is a sample of maintenance procedures and checks that are commonly associated with cartridge-operated dry chemical and dry powder hand portable fire extinguishers:

1. Visually examine the extinguisher for damage by removing the extinguisher from the hanger, bracket, or cabinet and visually examine the extinguisher for damage including; pressure gauge, cylinder dents, repairs, general corrosion, hose or nozzle threads, handles, and levers.
2. Verify that the hanger, bracket, or cabinet is the proper one for the extinguisher.
3. Verify that the hanger, bracket, or cabinet is secure, undamaged, and properly mounted.
4. Verify that the nameplate operating instructions are legible and facing outward.
5. Confirm that the extinguisher model is not subject to recall and is not obsolete.
6. Verify the extinguisher hydrostatic test records to determine the hydrostatic test interval.
7. Invert the extinguisher and open the nozzle to ensure any pressure is relieved from the shell.
8. Remove the cartridge guard and check the integral components for damage or corrosion.
9. Unscrew the cartridge to examine the seal. (Replace the cartridge if the seal is punctured, damaged, or corroded.) Verify that the seal is not punctured and that it is the proper cartridge for that extinguisher and that it has the proper manufacturer’s seal.
10. Install the shipping cap on the cartridge.
11. Weigh the cartridge on a scale and verify the weight is within the tolerance specified in the manufacturer’s service manual.
12. Remove the discharge nozzle from its holder and lift the hose breaking the tamper seal.
13. Operate the puncture lever to verify proper operation.
14. Check and clean the pressure relief vent in the cartridge receiver in accordance with manufacturer’s service manual.
15. Remove and examine the cartridge receiver gasket. Replace the gasket if brittle, compression set, cracked, cut, or missing.
16. Lubricate the gasket in accordance with the manufacturer’s manual and install.
17. Slowly loosen the fill cap to relieve any trapped pressure and reinstall hand tight.
18. Examine the hose, nozzle, and couplings for any damage.
19. Operate the discharge nozzle to verify proper operation.
20. Remove the nozzle tip in accordance with the manufacturer’s service manual and verify the proper tip is installed and that it is not damaged. Install the nozzle tip in accordance with manufacturer’s manual.
21. Remove the discharge hose from the extinguisher and ensure that the hose is not obstructed.
22. Examine the hose o-ring and replace if necessary.
23. Verify that the hose connection is clean and not damaged.
24. Install the hose on the extinguisher.
<table>
<thead>
<tr>
<th>Step</th>
<th>Instruction</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>Remove the fill cap and examine the threads and seating surfaces for any damage or corrosion.</td>
</tr>
<tr>
<td>26</td>
<td>Verify that the pressure relief vent is not obstructed.</td>
</tr>
<tr>
<td>27</td>
<td>Verify that the dry chemical agent is the correct type and that there are no foreign materials or caking.</td>
</tr>
<tr>
<td>28</td>
<td>Examine and clean the fill cap, gasket, and indicator in accordance with manufacturer’s manual.</td>
</tr>
<tr>
<td>29</td>
<td>Lubricate and install the fill cap and gasket in accordance with manufacturer’s manual.</td>
</tr>
<tr>
<td>30</td>
<td>Secure the discharge hose in place and install the proper cartridge.</td>
</tr>
<tr>
<td>31</td>
<td>Replace the cartridge guard and install new tamper seals.</td>
</tr>
<tr>
<td>32</td>
<td>Record the maintenance on the extinguisher tag or label.</td>
</tr>
<tr>
<td>33</td>
<td>Return the extinguisher to the hanger, bracket, or cabinet.</td>
</tr>
</tbody>
</table>

Submitter Information Verification

- **Submitter Full Name:** Gregory Harrington
- **Organization:** National Fire Protection Assoc
- **Street Address:**
- **City:**
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- **Zip:**
- **Submittal Date:** Fri Jul 12 14:55:39 EDT 2013

Committee Statement

- **Committee Statement:** Extract update.
- **Response Message:**
A.13.6.4.4
Carbon dioxide hose assemblies have a continuous metal braid that connects to both couplings to minimize the static shock hazard. The reason for the conductivity test is to determine that the hose is conductive from the inlet coupling to the outlet orifice. A basic conductivity tester consists of a flashlight having an open circuit and a set of two wires with a conductor (clamps or probe) at each end. [10: A.7.4] Figure A.13.6.4.4 provides a guide to the design of a conductivity test label. [10:A.7.4]

Figure A.13.6.4.4 Conductivity Test Label. [10:Figure A.7.4]
The following procedure permits rapid removal of the hose by one person without kinking of the hose and without obstruction of flow of the extinguishing agent:

1. Form a loop over hose supports [see Figure A.13.6.4.6.2(a)].
2. Follow with a reverse loop so that hose passes behind loop [see Figure A.13.6.4.6.2(b)].
3. Repeat steps (1) and (2) until all hose is coiled on the support [see Figure A.13.6.4.6.2(c)].
4. Adjust the coil so that the nozzle is in the downward position [see Figure A.13.6.4.6.2(d)]. Hose coiled in this manner pulls off free of twists.
5. Place nozzle in holder with handle forward in the closed position [see Figure A.13.6.4.6.2(e)].

Figure A.13.6.4.6.2(a) Counterclockwise Loop. [10:Figure A.7.6.2(a)]

Figure A.13.6.4.6.2(b) Reverse Loop. [10:Figure A.7.6.2(b)]
Figure A.13.6.4.6.2(c) Procedures in Figure A.13.6.9.4.6.2(a) and Figure A.13.6.9.4.6.2(b)
Continued. [10:Figure A.7.6.2(c)]
Figure A.13.6.4.6.2(d) Nozzle in Downward Position. [10:Figure A.7.6.2(d)]
Figure A.13.6.4.6.2(e) Nozzle in Holder. [10:Figure A.7.6.2(e)]
Submitter Information Verification

Submitter Full Name: Gregory Harrington
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Street Address:
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Submittal Date: Fri Aug 23 11:09:42 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
A.13.6.4.10
A number of states have regulations requiring an internal marking of an extinguisher that is used to verify if the extinguisher has been depressurized, if the valve has been removed, and if a complete maintenance has been performed. The verification-of-service collar design also requires that the valve be removed before the collar can be attached to the extinguisher. The collar provides the AHJs with a more convenient visual proof that the extinguisher has most likely been disassembled and that maintenance most likely has been performed. [10: A.7.10]

All extinguishers are to have the valve removed for hydrostatic testing and are to be subsequently recharged before they are returned to service. To be valid, the date on the verification-of-service collar should always be the same as or more recent than the date on the hydrostatic test label. [10: A.7.10]

Figure A.13.6.4.10 provides a guide to the design of a verification-of-service collar. [10: A.7.10]

Figure A.13.6.4.10 Design of a Verification-of-Service Collar. [10: A.7.10]

Submitter Information Verification

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Submittal Date: Fri Jul 12 15:22:24 EDT 2013

Committee Statement

Committee Statement: Extract update. (Also replace Figure A.13.6.4.10 with new Figure A.7.10 from NFPA 10-2013.)
Response Message:
A.13.6.4.11
Weight scales used for weighing a fire extinguisher with a gross weight of 60 lb (27.2 kg) or less should permit readings to 0.25 lb (0.10 kg). Weight scales used for weighing extinguishers and cartridges should permit readings consistent with the tolerances identified on the nameplate of the extinguisher or cartridge. All scales should be calibrated (tested) for accuracy. Accuracy of weight scales should be demonstrated at least daily by the use of test weight(s) having a verified weight. The test method involves placing a test weight on the scale and reading the results. The following method should be used to calibrate weight scales daily or more frequently as needed:

1. With nothing on the scale, “zero out” the weight scale by adjusting the weight scale calibration knob or wheel or tare/zero button so that it reads zero. A digital scale should be powered and allowed to stabilize before adjusting to read zero.

2. Place the test weight(s) on the scale.

3. Read the weight that is registered on the scale, and if needed, adjust the scale by turning the calibration knob or wheel to show the weight of the test weight that is being tested. Some digital scales have an electronic push-button calibration feature to calibrate the weight during a test.

4. Repeat the testing procedure two more times after any adjustment. The weight that is registered should be exactly the same. Weight scales that do not provide repeatable results within the tolerances specified in the manufacturer’s literature should be repaired or replaced.

Submitter Information Verification

Submitter Full Name: Gregory Harrington
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Street Address: 
City: 
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Submittal Date: Fri Jul 12 15:27:07 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
A.13.7.1.4.2
Records of conducted maintenance and testing and a copy of the certificate of compliance should be maintained. [101:A.9.6.1.5.4]
A fire watch should at least involve some special action beyond normal staffing, such as assigning an additional security guard(s) to walk the areas affected. Such individuals should be specially trained in fire prevention and in occupant and fire department notification techniques, and they should understand the particular fire safety situation for public education purposes. (Also see NFPA 601, Standard for Security Services in Fire Loss Prevention.)\[101\]: A.9.6.1.6

The term *out of service* in 13.7.1.4.3 is intended to imply that a significant portion of the fire alarm system is not in operation, such as an entire initiating device, signaling line, or notification appliance circuit. It is not the intent of the Code to require notification of the AHJ, or evacuation of the portion of the building affected, for a single nonoperating device or appliance.\[101\]: A.9.6.1.5

Submitter Information Verification

**Submitter Full Name:** Gregory Harrington  
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**City:**  
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**Zip:**  
**Submittal Date:** Wed Aug 14 10:43:01 EDT 2013

Committee Statement

**Committee Statement:** Extract update.  
**Response Message:**
NFPA 72, *National Fire Alarm and Signaling Code*, mandates smoke alarms in all sleeping rooms, and interconnection of smoke alarms is required for both new and existing installations. Per Section 9.6.2.10.1.2 of NFPA 101, the residential occupancy chapters requirements determine whether smoke alarms are needed within sleeping rooms. Paragraph 13.7.1.8.3 of NFPA 101 limits the requirement for interconnection of smoke alarms to those in new construction. This Code does not intend to require compliant, existing smoke alarm installations to be interconnected. This Code is periodically revised to add retrospective requirements only where the need is clearly substantiated.

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**Zip:**  
**Submittal Date:** Wed Aug 14 10:56:41 EDT 2013

**Committee Statement**

**Committee Statement:** Extract update.  
**Response Message:**
A.13.7.1.9.5.7
Visual notification appliances installed in large volume spaces, such as arenas, stadiums, malls and atriums, can be alternative devices which are not listed as visible notification appliances for fire alarm systems provided that the notification objective of the visual signal is reasonably achieved. Examples of alternative devices include, but are not limited to, scoreboards, message boards, and other electronic devices that meet the performance objectives of visible fire alarm appliances in large volume spaces.

[101 : A.9.6.3.5.7]
It is the intent to permit the omission of visible notification appliances as identified in 9.6.3.5.7 of NFPA 13.7.1.9.5.7 provided that the adjacent areas that have not been specifically designated as exempt are provided with visible notification as required by 9.6.3.5 of NFPA 101 13.7.1.9.5. [101:A.9.6.3.5.7]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
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Submittal Date: Wed Aug 14 11:01:58 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
A.13.7.3.1.1.5(1)
The requirement of 10.3.5 13.7.3.1.1.5 (1) does not preclude transfer to secondary supply at less than 85 percent of nominal primary voltage, provided the requirements of 10.5.6 10.6.7 of NFPA 72 are met. [72:A.10.3.5(1)]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
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Street Address:
City:
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Zip:
Submittal Date: Mon Jul 15 15:06:43 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
A.13.7.3.8.3
In environments where red paint or red plastic is not suitable, an alternative material, such as stainless steel, could be used as long as the box meets the requirements of 17.14.8.2 of NFPA 72. [72:A.17.14.8.3]
A.14.3.1(1)
In existing buildings, existing walls in good repair and consisting of lath and plaster, gypsum wallboard, or masonry units can usually provide satisfactory protection for the purposes of this requirement where a 1-hour fire resistance rating is required. Further evaluation might be needed where a 2-hour fire resistance rating is required. Additional guidelines can be found in Annex D of NFPA 914, Code for Fire Protection of Historic Structures, and in the SFPE Handbook of Fire Protection Engineering. [101:A.7.1.3.2.1(1)]

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Zip:
Submittal Date: Wed Aug 14 12:08:19 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
A.14.3.1(3)
In existing buildings, existing walls in good repair and consisting of lath and plaster, gypsum wallboard, or masonry units can usually provide satisfactory protection for the purposes of this requirement where a 1-hour fire resistance rating is required. Further evaluation might be needed where a 2-hour fire resistance rating is required. Additional guidelines can be found in Annex D of NFPA 914 and in the SFPE Handbook of Fire Protection Engineering. [101:A.7.1.3.2.1(3)]
A.14.5.3.1.1(3)

It is not the intent to require a direct physical or electrical connection between the door release device and the lock. It is the intent to allow door movement initiated by operating the door release device required in 7.2.1.5.9 of NFPA 101: 14.5.2.10 as one option to initiate the irreversible process.

[101: A.7.2.1.6.1.1(3)]

Several factors need to be considered in approving an increase in delay time from 15 seconds to 30 seconds. Some of those factors include occupancy, occupant density, ceiling height, fire hazards present, fire protection features provided, and the location of the delayed-egress locks. An example of a location where the increase on delay time might not be approved is at an exit stair discharge door.

[101:A.7.2.1.6.1.1(3)]
A.14.8.1.2
The normal occupant load is not necessarily a suitable criterion, because the greatest hazard can occur when an unusually large crowd is present, which is a condition often difficult for AHJs to control by regulatory measures. The principle of this Code is to provide means of egress for the maximum probable number of occupants, rather than to attempt to limit occupants to a number commensurate with available means of egress. However, limits of occupancy are specified in certain special cases for other reasons. [101: A.7.3.1.2]

Suggested occupant load factors for components of large airport terminal buildings are given in Table A.14.8.1.2. However, the AHJ might elect to use different occupant load factors, provided that egress requirements are satisfied. [101: A.7.3.1.2]

Table A.14.8.1.2 Airport Terminal Occupant Load Factors

<table>
<thead>
<tr>
<th>Airport Terminal Area</th>
<th>ft² (gross)</th>
<th>m² (gross)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concourse</td>
<td>100</td>
<td>9.3</td>
</tr>
<tr>
<td>Waiting areas</td>
<td>15</td>
<td>1.4</td>
</tr>
<tr>
<td>Baggage claim</td>
<td>20</td>
<td>1.9</td>
</tr>
<tr>
<td>Baggage handling</td>
<td>300</td>
<td>27.9</td>
</tr>
</tbody>
</table>

[101: Table A.7.3.1.2]

The figure used in determining the occupancy load for mall shopping centers of varying sizes was arrived at empirically by surveying over 270 mall shopping centers, by studying mercantile occupancy parking requirements, and by observing the number of occupants per vehicle during peak seasons. [101: A.7.3.1.2]

These studies show that, with an increase in shopping center size, there is a decrease in the number of occupants per square foot of gross leasable area. [101: A.7.3.1.2]

This phenomenon is explained when one considers that, above a certain shopping center gross leasable area [approximately 600,000 ft² (56,000 m²)], there exists a multiplicity of the same types of stores. The purpose of duplicate types of stores is to increase the choices available to a customer for any given type of merchandise. Therefore, when shopping center size increases, the occupant load increases as well, but at a declining rate. In using Table A.14.8.1.2, the occupant load factor is applied only to the gross leasable area that uses the mall as a means of egress.

Relative to the 100 ft² (9.3 m²) per person occupant load factor specified in Table 14.8.1.2 for concentrated business use, some business use spaces such as call centers and work station areas might necessitate use of an occupant load factor less than 100 ft² (9.3 m²) per person. For example, desk cubicles as small as 25 ft² (2.3 m²) in area are available in the marketplace. Prudence needs to be exercised when determining the occupant load in concentrated business use areas. [101: A.7.3.1.2]

The value for concentrated business use is intended to address business use spaces with a higher density of occupants than would normally be expected in a general business occupancy. Where furnishings and floor layouts are arranged to maximize the number of occupants in the space, the value for concentrated business use should be applied. Examples of concentrated business use areas are call centers, trading floors, and data processing centers. [101: A.7.3.1.2]

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Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
<table>
<thead>
<tr>
<th>Committee Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Committee Statement: Extract update.</td>
</tr>
<tr>
<td>Response Message:</td>
</tr>
</tbody>
</table>
The effective capacity of stairways has been shown by research to be proportional to the effective width of the stairway, which is the nominal width minus 12 in. (305 mm). This phenomenon, and the supporting research, were described in the chapter, “Movement of People,” in the first, second, and third editions of the SFPE Handbook of Fire Protection Engineering and was also addressed in Appendix D of the 1985 edition of NFPA 101, among several other publications. In 1988, this appendix was moved to form Chapter 2 of the 1988 edition of NFPA 101M, Alternative Approaches to Life Safety. (This document was later designated as NFPA 101A, Guide on Alternative Approaches to Life Safety, and this chapter remained in the document through the 1998 edition.) In essence, the effective width phenomenon recognizes that there is an edge or boundary effect at the sides of a circulation path. It has been best examined in relation to stairway width, where the edge effect was estimated to be 6 in. (150 mm) on each side, but a similar phenomenon occurs with other paths, such as corridors and doors, although quantitative estimates of their edge effect are not as well established as they have been for stairways, at least those stairways studied in Canada during the late 1960s through the 1970s in office building evacuation drills and in crowd movement in a variety of buildings with assembly occupancy. [101 : A.7.3.3.2]

More recent studies have not been performed to determine how the edge effect might be changing (or has changed) with demographic changes to larger, heavier occupants moving more slowly, and thus swaying laterally, to maintain balance when walking. The impact of such demographic changes, which are significant and influential for evacuation flow and speed of movement on stairs, for example, has the effect of increasing the time of evacuation in a way that affects all stair widths, but will be most pronounced for nominal widths less than 56 in. (1422 mm). [101 : A.7.3.3.2]

Without taking into account occupant demographic changes in the last few decades that affect evacuation performance, especially on stairs, the formula for enhanced capacity of stairways wider than 44 in. (1120 mm) assumes that any portion of the nominal width greater than 44 in. (1120 mm) is as effective proportionally as the effective width of a nominal 44 in. (1120 mm) stair, that is, 32 in. (810 mm). Thus, the denominator (0.218) in the equation is simply the effective width of 32 in. (810 mm) divided by the capacity of 147 persons that is credited, by the 0.3 in. (7.6 mm) capacity factor in Table A.14.8.3.2, to the corresponding nominal width, 44 in. (1120 mm). [101 : A.7.3.3.2]

The resulting permitted stairway capacities, based on occupant load of single stories (in accordance with 7.3.1.4 of NFPA 101), for several stairway widths are shown in Table A.14.8.3.2 [101 : A.7.3.3.2].

Table A.14.8.3.2 Stairway Capacities

<table>
<thead>
<tr>
<th>Permitted Capacity (no. of persons)</th>
<th>Nominal Width</th>
<th>Clear Width Between Handrails&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Effective Width</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>in.</td>
<td>mm</td>
<td>in.</td>
</tr>
<tr>
<td>120&lt;sup&gt;b&lt;/sup&gt;</td>
<td>36</td>
<td>915</td>
<td>28</td>
</tr>
<tr>
<td>147</td>
<td>44</td>
<td>1120</td>
<td>36</td>
</tr>
<tr>
<td>202</td>
<td>56</td>
<td>1420</td>
<td>48</td>
</tr>
<tr>
<td>257</td>
<td>68</td>
<td>1725</td>
<td>60</td>
</tr>
</tbody>
</table>

<sup>a</sup>A reasonable handrail incursion of only 4 in. (100 mm), into the nominal width, is assumed on each side of the stair, although 7.3.3.2 of NFPA 101 permits a maximum incursion of 4½ in. (114 mm) on each side.

<sup>b</sup>Other Code sections limit the occupant load for such stairs more severely, (e.g., 50 persons in 7.2.2.2.1.2 of NFPA 101). Such lower limits are partly justified by the relatively small effective width of such stairs, which, if taken into account by Table 7.3.3.1 of NFPA 101, would result in a correspondingly low effective capacity of only 110 persons (24 divided by 0.218), or a more realistic capacity factor of 0.327, applicable to nominal width.

<sup>c</sup>A clear width of 60 in. (1525 mm) is the maximum permitted by the handrail reachability criteria of 7.2.2.4.1.2 of NFPA 101. Although some prior editions of the Code permitted wider portions of stairs [up to 88 in. (2240 mm), between handrails], such wider portions are less effective for reasonably safe crowd flow and generally should not be used for major crowd movement. To achieve the maximum possible, reasonably safe egress capacity for such stairs, retrofit of an intermediate — not necessarily central — handrail is recommended; for example, with an intermediate handrail located 36 in. (915 mm) from the closest side handrail. In this case, the effective capacity would be 358 persons for the formerly permitted, now retrofitted, stair. This is based on a retrofitted, effective width of about 78 in. (1980 mm) [subtracting 2 in. (51 mm) from each usable side of a handrail and assuming a 2 in. (51 mm) wide, retrofitted intermediate handrail]. [101 : A.7.3.3.2]
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Submittal Date: Wed Aug 14 12:49:09 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
A.14.10.1.4.2
It is difficult in actual practice to construct scissor stairs so that products of combustion that have entered one stairway do not penetrate into the other. Their use as separate required exits is discouraged. The term limited-combustible is intentionally not included in 14.10.1.4.2. The user’s attention is directed to the definitions of limited-combustible and noncombustible provisions for noncombustible and limited-combustible in 3.3.170 and 3.3.180.11, 4.5.9 and 4.5.10, respectively. [101:A.7.5.1.4.2]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
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Submittal Date: Thu Aug 15 09:19:18 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
It is the intent of 14.11.7 to permit the staging of building occupants in exterior discharge areas that are open to the outside air such as parking lots or lawns or areas that are bounded by fences or walls prior to either allowing travel to the public way or reentry into the building. The dimensional criteria 14.11.7 (1) and (2) permit sufficient personal space for each occupant while waiting from a reasonable distance from the building. Greater or closer distances might be permitted based on construction type, sprinkler protection, and exterior wall construction, as well as opening protectives. The provisions of 14.11.7 (3) and (4) require the exterior area(s) to be free of snow and ice, or ponding water, and be compliant with all applicable means of egress safeguards such as, but not limited to, illumination, marking, width, and door-swing direction. [101: A.7.7.7]
A.14.12.1.3(4)

Some processes, such as manufacturing or handling of photosensitive materials, cannot be performed in areas provided with the minimum specified lighting levels. The use of spaces with lighting levels below 1 ft-candle (10.8 lux) might necessitate additional safety measures, such as written emergency plans, training of new employees in emergency evacuation procedures, and periodic fire drills.

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Submitter Full Name: Gregory Harrington
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Submittal Date: Thu Aug 15 09:29:09 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:

A.14.14.1.7
See 3.3.144.2 3.3.145.2 of NFPA 101 for the definition of internally illuminated. [101:A.7.10.1.7]

Submitter Information Verification

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Submittal Date: Thu Aug 15 09:37:00 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message: 
A.16.2.1.5
These operations might necessitate the removal of the heater prior to refueling. The appliance also should be allowed to cool prior to refueling. [241: A.5.2.5]

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Submittal Date: Tue Jul 16 15:52:31 EDT 2013

Committee Statement

Committee Statement: Extract update - relocated as modified to A.16.2.1.14.
Response Message:
A.16.2.1.14
This might necessitate the removal of the heater prior to refueling. The appliance also should be allowed to cool prior to refueling. [241: A.5.2.14]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
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Street Address: 
City: 
State: 
Zip: 
Submittal Date: Tue Jul 16 15:53:59 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
A.16.4.2.4
Construction tarp[s] tarpaulins would not be considered appropriate barriers or opening protectives. [241:A.8.6.2.4]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
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Submittal Date: Tue Jul 16 16:01:17 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
Figure A.17.1.2(a) and Table A.17.1.2 are examples of two different approaches to hazard assessment. [1144: A.4.1.2]

Figure A.17.1.2(a) is an example of an assessment guide with assessment information based on observation of the areas around the structure. This form, intended to be given to the resident, can be very useful by indicating the most serious hazards and the mitigation recommendation(s) that can be taken to reduce the ignition hazard. In this example, samples of the kind of information noted in an assessment are given as observations and suggestions for mitigation. [1144: A.4.1.2]

This example of an assessment guide is designed to help determine how vulnerable the structure will be during a wildland fire and to convey to the resident those items that should be corrected (mitigated) so that their home will have a better chance to survive a wildland fire. This form is offered as an example of the kind of tool that might be useful during a site visit as a guide for assessing the structure ignition zone. Remember, the following assessment items are for prevention/mitigation measures to be done well in advance of wildland fire season. [1144: A.4.1.2]

Figure A.17.1.2(a) is a form used to document observations, collect data, provide a hazard assessment, and give mitigation recommendations for the resident. From the mitigation recommendations, a mitigation plan and schedule is developed in accordance with 17.1.10. For more information on the use of this assessment form, refer to the course Assessing Wildfire Hazards in the Home Ignition Zone, available from the national Firewise Communities Program (www.firewise.org). [1144: A.4.1.2]

Table A.17.1.2 is a modified rating form based on the previous edition of NFPA 1144, Standard for Reducing Structure Ignition Hazards from Wildland Fire. Infrastructure elements of water supply, signage, and other fire suppression resources have been deleted, since the presence or absence of such resources does not modify the existing hazards of the structure. The table is presented only as an example of a rating system and should be modified to meet the environmental conditions of the area under consideration. For more information on creating an assessment system, consult Wildland/Urban Interface Fire Hazard Assessment Methodology Guide Hazards: A New Look at Understanding Assessment Methodologies Pamphlet, produced by the national Firewise Communities Program (www.firewise.org). [1144: A.4.1.2]

A numeric rating form that will yield a hazard rating number can have a variety of uses, for example, determining relative hazards among several properties and mapping overall hazard ratings on a map. However, residents and homeowners often accept the rating number as finite and undertake mitigation measures that will merely reduce the rating rather than actually reduce the ignition potential of the structure. [1144: A.4.1.2]

Figure A.17.1.2(a) Structure Assessment—Guide Example with Notations. [1144:Figure A.4.1.2]
### Table A.17.1.2 Example of Structure Assessment Rating Form

<table>
<thead>
<tr>
<th>Rating Values by Areas Assessed</th>
<th>Overview of Surrounding Environment (4.2.1)</th>
<th>From Chimney to Eaves (4.2.2)</th>
<th>From Top of the Exterior Wall to Foundation (4.2.3)</th>
<th>From Foundation to Immediate Landscaped Area (4.2.4)</th>
<th>From Immediate Landscaped Area to Extent of Structure Ignition Zone (4.2.5)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Topographical Features</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(1) Topographical features that adversely affect wildland fire behavior (4.2.1)</td>
<td>0–5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2) Areas with history of high fire occurrence (4.3.4)</td>
<td>0–5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(3) Areas exposed to unusually severe fire weather and strong, dry winds (4.2.1.3)</td>
<td>0–5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(4) Local weather conditions and prevailing winds (4.2.1.2)</td>
<td>0–5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(5) Separation of structure on adjacent property that can contribute to fire spread/behavior (4.2.1.3)</td>
<td>0–5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Vegetation</strong> — Characteristics of predominant vegetation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rating Values by Areas Assessed</td>
<td>Overview of Surrounding Environment (4.2.1)</td>
<td>From Chimney to Eaves (4.2.2)</td>
<td>From Top of the Exterior Wall to Foundation (4.2.3)</td>
<td>From Foundation to Immediate Landscaped Area (4.2.4)</td>
<td>From Immediate Landscaped Area to Extent of Structure Ignition Zone (4.2.5)</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>---------------------------------------------</td>
<td>-------------------------------</td>
<td>-----------------------------------------------</td>
<td>-------------------------------------------------</td>
<td>-------------------------------------------------</td>
</tr>
<tr>
<td>(1) Light (e.g., grasses, forbs, sawgrasses, and tundra) NFDRS Fuel Models A, C, L, N, S, and T</td>
<td>5</td>
<td>15</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2) Medium (e.g., light brush and small trees) NFDRS Fuel Models D, E, F, H, P, Q, and U</td>
<td>10</td>
<td>20</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(3) Heavy (e.g., dense brush, timber, and hardwoods) NFDRS Fuel Models B, G, and O</td>
<td>15</td>
<td>25</td>
<td>15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(4) Slash (e.g., timber harvesting residue) NFDRS Fuel Models J, K, and L</td>
<td>15</td>
<td>30</td>
<td>20</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Topography (4.2.1.1, 4.2.4, 4.2.5)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(1) Slope 5–9%</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2) Slope 10–20%</td>
<td>4</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(3) Slope 21–30%</td>
<td>7</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(4) Slope 31–40%</td>
<td>10</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(5) Slope &gt;41%</td>
<td>15</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Building Setback</strong>, relative to slopes of 30% or more (4.2.1.5, 5.1.3.2)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(1) 30 ft (9.14 m) to slope</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2) 30 ft (9.14 m) to slope</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Roofing Materials and Assembly</strong>, nonrated (4.2.2.1, 4.2.2.3)</td>
<td></td>
<td>50*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Ventilation Soffits</strong>, without metal mesh or screening (4.2.3.4)</td>
<td></td>
<td>20</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Gutters</strong>, combustible (4.2.2.4, 4.2.2.5)</td>
<td></td>
<td>5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Building Construction</strong> (predominant)† (4.2.4)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(1) Noncombustible/fire-resistant/ignition-resistant siding and deck</td>
<td></td>
<td></td>
<td>Low</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2) Noncombustible/fire-resistant/ignition-resistant siding and</td>
<td></td>
<td></td>
<td>Medium</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Rating Values by Areas Assessed

<table>
<thead>
<tr>
<th>Areas Assessed</th>
<th>Overview of Surrounding Environment (4.2.1)</th>
<th>From Top of the Exterior Wall to Foundation (4.2.3)</th>
<th>From Foundation to Immediate Landscaped Area (4.2.4)</th>
<th>From Immediate Landscaped Area to Extent of Structure Ignition Zone (4.2.5)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>combustible deck</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(3) Combustible siding and deck</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Fences and Attachments, combustible (4.2.4.3)</strong></td>
<td></td>
<td></td>
<td></td>
<td>15</td>
</tr>
<tr>
<td><strong>Placement of Gas and Electric Utilities</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(1) One underground, one aboveground</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2) Both aboveground</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Fuel Modification</strong> within the structure ignition zone (4.2.4, 4.2.5)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(1) 71–100 ft (21–30 m) of vegetation treatment from the structure(s)</td>
<td></td>
<td></td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>(2) 30–70 ft (9–21 m) of vegetation treatment from the structure(s)</td>
<td></td>
<td></td>
<td></td>
<td>7</td>
</tr>
<tr>
<td>(3) &lt;30 ft (9 m) of vegetation treatment from the structure(s)</td>
<td></td>
<td></td>
<td></td>
<td>15</td>
</tr>
<tr>
<td><strong>No Fixed Fire Protection (NFPA 13, 13R, 13D sprinkler system)</strong></td>
<td></td>
<td></td>
<td></td>
<td>5</td>
</tr>
<tr>
<td><strong>TOTALS (if numerical ranking is desired)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Hazard Rating Scale

(Compare with above totals)

- Slight Structure Ignition Hazards from Wildland Fire: 0–14
- Moderate Structure Ignition Hazards from Wildland Fire: 15–29
- Significant Structure Ignition Hazards from Wildland Fire: 30–49
- Severe Structure Ignition Hazards from Wildland Fire: 50+

*Nonrated and combustible roof assemblies are predominantly structural exposures and severely increase the ignition hazard from wildland fire.

†The table provides both numerical and value rankings (low, medium, high). The user is urged to assign the value ranking of low, medium, or high based on the other ignition factors prevalent at the assessment.
site. For example, a deck made of combustible materials might rank low if it is small in size and the rest of
the site is in a low fuel loading area that will not promote a large amount of firebrands. That same deck
might rate high if it is in an area of high fuel loading that will promote numerous firebrands. Numeric
values can be substituted as a local option. [1144: Table A.4.1.2]

Submitter Information Verification

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Committee Statement

Committee Statement: Extract update. NOTE: Replace Figures A.17.1.2(a) and A.17.1.2.(b) with new Figures
A.4.1.2(a) and A.4.1.2(b) from NFPA 1144-2013.
A.17.1.6.6
Eaves should be boxed to prevent flying embers from entering small spaces. [1144:A.4.2.5.6]

Submitter Information Verification

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Committee Statement

**Committee Statement:** Extract update.
**Response Message:**
A.17.1.7.3
Windows should be constructed of multi-paned or tempered glass that will resist fracture from intense heat in accordance with 5.6.7.1 of NFPA 1144, and window screens made from a material that will not allow hot firebrands to enter the home’s interior in accordance with 5.6.7.2 of NFPA 1144. [1144:A.4.2.3.3]
A.17.1.7.6
Areas on, next to, or under a structure should be kept free of combustible fuel such as debris, vegetation, wooden furniture, brooms, welcome mats, furniture cushions, gasoline cans, firewood stacks, or piled construction materials. Look for combustible walkways, fencing, or decking attached to the structure, highly combustible fuels adjacent to the structure (e.g., junipers near decks and walkways), combustible materials (e.g., building materials, firewood) stored under decks or adjacent to the structure, animal nests among combustible structural fuels, and landscaping materials (e.g., bark mulch, ground cover plants) near the structure and surrounding plants that might support flaming combustion or that could easily be ignited by firebrands. [1144:A.4.2.3.5.6]
The structure ignition zone includes the spatially arranged traditional landscaping zones, but can exceed the extent of the property line. Figure A.17.1.8 illustrates the relationship of the structure and immediate landscaped area to the larger structure ignition zone. Within the immediate landscaped area [from the structure to approximately 30 ft (9 m)], often referred to as the defensible space, special consideration should be given that any combustible materials (e.g., plants, lawn furniture, litter, construction materials) should be removed or reduced to prevent their ignition, which in turn could ignite the structure. The total structure ignition zone includes any spatially arranged landscaping area and can exceed the extent of the property line. The level of risk of ignition within the total area of the ignition zone depends on the type of construction and is further influenced by slope, soils, and other site-specific conditions. [1144: A.4.2.4]

The AHJ should require the development of a landscape plan for the property. Such plans should address four zones around the property as follows:

1. The most immediate landscaped area is the closest to the house and includes the area encircling the structure for at least 30 ft (9 m) on all sides. The landscaped vegetation within 30 ft (9 m) of structures should be irrigated as needed, cleared of dead vegetation, and/or planted with succulents and other plants (where appropriate) that are low in flammability potential. Plantings should be limited to carefully spaced, low-growing, low-flammability species, grasses, and lawns. Shrubs planted next to the structure should be of low flammability, no more than 18 in. (45 cm) in height, and not planted against the home. The planting bed should be noncombustible (e.g., stone, gravel, bare ground) or irrigated if combustible materials (e.g., bark mulch) are used. All highly combustible plants, such as junipers and ornamental conifers, should be removed or trimmed and maintained to be ignition-resistant. Vegetation deposits (dry leaf and pine litter) that can support surface fire and flames should be removed regularly. Areas of vegetation (natural areas, undeveloped areas, landscaped areas, fields, etc.) that exist near the structure should be evaluated for the possibility of causing ignition of the structure.

2. Progressing outward from the structure, the types and densities of vegetation should change to reduce the continuity of vegetation fuels. For example, plantings can be done in islands. Trees can be introduced into this zone with careful consideration of their flammability and continued maintenance to separate crowns and avoid ladder fuels. Tree placement should be planned so that the edge of the canopy of the tree when fully mature is no closer than 10 ft (3 m) to the edge of the structure.

3. Progressing even farther from the structure, more medium-sized plants and well-spaced trees can be planted in well-spaced groupings to reduce exposure to wildland fire and help maintain privacy. The volume of vegetation (i.e., fuel) should be kept as low as possible or practical.

4. The most distant area [100–200 ft (30–60 m)] from the structure determines the extent of the structure ignition zone. Plants in this furthestmost area should be carefully pruned and thinned, and highly flammable vegetation removed. Particular attention should be paid to the types and densities of the vegetation in this area. For example, some vegetation and trees generate more firebrands than others and require additional thinning, removal, or replacement. [1144: A.4.2.4]

(1) The most immediate landscaped area is the closest to the house and includes the area encircling the structure for at least 30 ft (9 m) on all sides. The landscaped vegetation within 30 ft (9 m) of structures should be irrigated as needed, cleared of dead vegetation, and/or planted with succulents and other plants (where appropriate) that are low in flammability potential. Plantings should be limited to carefully spaced, low-growing, low-flammability species, grasses, and lawns. Shrubs planted next to the structure should be of low flammability, no more than 18 in. (45 cm) in height, and not planted against the home. The planting bed should be noncombustible (e.g., stone, gravel, bare ground) or irrigated if combustible materials (e.g., bark mulch) are used.

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(2) Progressing outward from the structure, the types and densities of vegetation should change to reduce the continuity of vegetation fuels. For example, plantings can be done in islands. Trees can be introduced into this zone with careful consideration of their flammability and continued maintenance to separate crowns and avoid ladder fuels. Tree placement should be planned so that the edge of the canopy of the tree when fully mature is no closer than 10 ft (3 m) to the edge of the structure.
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The most distant area [100–200 ft (30–60 m)] from the structure determines the extent of the structure ignition zone. Plants in this furthermost area should be carefully pruned and thinned, and highly flammable vegetation removed. Particular attention should be paid to the types and densities of the vegetation in this area. For example, some vegetation and trees generate more firebrands than others and require additional thinning, removal, or replacement.

[1144: A.4.2.4]

Figure A.17.1.8 The Structure Ignition Zone. [1144:Figure A.4.2.4]
A.17.3.5.2.1.5

Studies of structural ignition from radiant heat indicate that ignitions are unlikely to occur from burning vegetation beyond 120 ft (36.6 m) from a structure. Therefore, clearing of vegetation and thinning of trees to a distance of 120 ft (36.6 m) from a dwelling — as in a zoned Firewise landscape — will prevent ignition of a structure from the radiant heat from a flame front in a high-risk ecosystem (Cohen and Butler, 1996).

A tree crown spacing of 18 ft (5.5 m) for trees within the Zone 1 defensible space [within 30 ft (9 m) of a structure] will reduce radiant heat to at or below the level where ignition of wood occurs, with closer spacing of trees allowed in the zones further from the structure, as described in Table A.17.3.5.2.1.5. These tree-spacing recommendations apply equally to thinning of mature trees or planting of new trees in high- or extreme-risk areas. Tree spacing is measured between the outer edges of the crowns of mature trees, so new trees must be planted with spacing equivalent to the estimated diameter of the mature crown. [1144: A.6.2.5]

Table A.17.3.5.2.1.5 illustrates general clearance distances for tree crowns. However, these distances can be adjusted by the AHJ in consideration of species of trees and understory vegetation, slope of the property, the proximity to other neighboring structures, overlapping ignition zones, and other site-specific factors. [1144: A.6.2.5]

<table>
<thead>
<tr>
<th>Zone</th>
<th>Distance from Structure</th>
<th>Recommended Tree Crown Spacing</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0–30 ft (0–9 m)</td>
<td>18 ft (5.5 m)</td>
</tr>
<tr>
<td>2</td>
<td>30–60 ft (9–18 m)</td>
<td>12 ft (3.7 m)</td>
</tr>
<tr>
<td>3</td>
<td>60–100 ft (18–30 m)</td>
<td>6 ft (1.8 m)</td>
</tr>
<tr>
<td>4</td>
<td>Beyond 100 ft (30 m)</td>
<td>No restrictions</td>
</tr>
</tbody>
</table>

[1144: Table A.6.2.5]
A.20.1.5.4.3

The term phrase “unprotected materials containing foamed plastic” is meant to include foamed plastic items covered by “thermally thin” combustible fabrics or paint. (See NFPA 101 A.12.5.4.4A.10.2.3.4.)

Submitter Information Verification

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Committee Statement

Committee Statement: Extract update.
Response Message:
Second Revision No. 370-NFPA 1-2013 [ Section No. A.20.1.5.5.4.7.1(3) ]

A.20.1.5.5.4.7.1(3)
See A.12.4.1.1 and A.13.4.1.1 of NFPA. 101 A.10.14.3.1. [101:A.12.7.5.3.7.1(3); 101:A.13.7.5.3.7.1(3)]]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
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Submittal Date: Thu Aug 15 09:51:45 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
A.20.1.5.6.4

In large facilities, crowd managers typically have a specific area of responsibility. In such facilities, the requirements of 20.1.5.6.4 might apply only to the crowd managers’ area of responsibility.

[101: A.12.7.6.4; 101: A.13.7.6.4]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
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Street Address:
City:
State:
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Submital Date: Thu Aug 15 09:55:23 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
A.20.3.2.2
The purpose of this requirement is to prevent arrangements whereby a child client can be trapped in a space or area. It is intended that this provision be broadly interpreted by the AHJ to include equipment such as refrigerators and freezers. [101:A.16.2.2.2.4; 101:A.17.2.2.2.4]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
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Street Address:
City:
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Submittal Date: Thu Aug 15 10:00:16 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
A.20.6.2

Ambulatory health care occupants have, in large part, varied degrees of physical disability, and their removal to the outside, or even their disturbance caused by moving, is inexpedient or impractical in many cases, except as a last resort. Similarly, recognizing that there might be an operating necessity for the restraint of the mentally ill, often by use of barred windows and locked doors, fire exit drills are usually extremely disturbing, detrimental, and frequently impracticable. [101: A.20.7; 101: A.21.7]

In most cases, fire exit drills, as ordinarily practiced in other occupancies, cannot be conducted in ambulatory health care occupancies. Fundamentally, superior construction, early discovery and extinguishment of incipient fires, and prompt notification need to be relied on to reduce the occasion for evacuation of buildings of this class to a minimum. [101:A.20.7; 101:A.21.7]
A.20.6.2.1.5
Many ambulatory health care occupancies conduct fire drills without disturbing patients by choosing the location of the simulated emergency in advance and by closing the doors to patients' rooms or wards in the vicinity prior to the initiation of the drill. The purpose of a fire drill is to test and evaluate the efficiency, knowledge, and response of institutional personnel in implementing the facility fire emergency plan. Its purpose is not to disturb or excite patients. Fire drills should be scheduled on a random basis to ensure that personnel in ambulatory health care facilities are drilled not less than once in each 3-month period. [101: A.20.7.1.4; 101: A.21.7.1.4]

Drills should consider the ability to move patients to an adjacent smoke compartment. Relocation can be practiced using simulated patients or empty wheelchairs. [101:A.20.7.1.4; 101:A.21.7.1.4]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
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Street Address:
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Zip:
Submittal Date: Thu Aug 15 11:21:44 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
25.1.7.2.3

The intent is to require detectors only in nonsprinklered hazardous areas that are unoccupied. When the building is occupied, the detectors in the unoccupied, unsprinklered hazardous areas will initiate occupant notification. If the building is unoccupied, the fire in the nonsprinklered hazardous area is not a life safety issue, and the detectors, upon activation, are not required to notify anyone. The signal from a detector is permitted to be sent to a control panel in an area that is occupied when the building is occupied, but that is unoccupied when the building is unoccupied, without the need for central-station monitoring or the equivalent. [101 : A.12.3.4.2.3]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
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Zip:
Submittal Date: Thu Aug 15 12:55:40 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
### Second Revision No. 376-NFPA 1-2013 [ Section No. A.25.1.7.3.5 ]

**A.25.1.7.3.5**

Examples of devices that might be used to provide alternative visible means include scoreboards, message boards, and other electronic devices. [101 : A.12.3.4.3.5]

---

### Submitter Information Verification

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**Street Address:**  
**City:**  
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**Zip:**  
**Submittal Date:** Thu Aug 15 13:07:17 EDT 2013

### Committee Statement

**Committee Statement:** Editorial - duplicate.  
**Response Message:**
A.26.2

These laboratories are not intended to include isolated frozen section laboratories; areas in which oxygen is administered; blood donor rooms in which flammable, combustible, or otherwise hazardous materials normally used in laboratory procedures are not present; and clinical service areas not using hazardous materials. [99: A.3.3.91]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address: 
City: 
State: 
Zip: 
Submittal Date: Mon Jul 15 16:20:50 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
A.32.4.5.2(5)

Examples of interim measures that could be approved by the AHJ include, but are not limited to, the following:

1. Providing a fire watch
2. Removing the combustible materials at the end of the day's filming
3. Keeping lighting and other heat-producing sources away from the combustible materials
4. Providing baffles around heat-producing sources

[140: A.4.5.2(5)]
A.32.4.5.2(4)
It is important that combustible drapes, drops, and similar materials exhibit adequate fire performance. The requirement that a decoration be “flame retardant” is not enforceable as such. However, the AHJ might be able to make a judgment of adequate fire performance without requiring testing of the decoration. The AHJ may also require a fire test method different from NFPA 701 or NFPA 289, as some decorations may not be effectively tested by NFPA 701. Examples of approaches that can be taken by the AHJ include information on the composition of the decoration or evidence of its treatment with fire retardants or coatings. [140:A.4.5.2(4)]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Mon Jul 22 09:44:33 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
A.40.4.1.4
Transmission of power by direct drive should be used, where possible, in preference to belt or chain drives. [654: A.9.1.4]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Mon Jul 22 11:32:01 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
A.40.4.3.4.2.2
For this application, conductive particulate solids typically are those materials having bulk resistivity $<10^6$ ohm-m. [654:A.9.3.4.2.2]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Fri Aug 23 13:16:18 EDT 2013

Committee Statement

Committee Statement: Extract update - Errata 654-13-1.
Response Message:
A.40.4.3.5.1
Conductive containers are generally made from either metal or carbon-filled plastic having a volume resistivity less than $10^6$ ohm-m. [654:A.9.3.5.1]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Fri Aug 23 13:17:54 EDT 2013

Committee Statement

Committee Statement: Extract update - Errata 654-13-1.
Response Message:
A.41.1.2(7)

There are more detailed, and in some cases more stringent, requirements for torch-applied roofing found in Section 16.6 or NFPA 241. [51B:A.1.3.1(7)]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Fri Jul 19 10:07:22 EDT 2013

Committee Statement

Committee Statement: Editorial.
Response Message:
### A.41.4.1

A common example of a situation where Section Chapter 6 of NFPA 51B 41.4 would apply is work performed in a single-dwelling home by a plumber sweating a pipe. Another example is the repair of a wrought iron railing used for steps in a single-dwelling home. A third example is welding performed on construction or agricultural equipment on site. The NFPA 51B committee recognizes that it is not always practical to have more than one individual present, and completing a job with one person is a common practice. The NFPA 51B committee stresses that it is always better to have more than one individual present to ensure fire safety, but realizes that it is not always practical to do so. [51B: A.6.1]

### Submitter Information Verification

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**Zip:**  
**Submittal Date:** Fri Jul 19 10:13:12 EDT 2013

### Committee Statement

**Committee Statement:** Editorial.

**Response Message:**
Second Revision No. 574-NFPA 1-2013 [Section No. A.42.2.1.3]

A.42.2.1.3
See NFPA 52 and NFPA 58 for requirements for facilities where only these fuels are dispensed.

Submitter Information Verification

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Submittal Date: Thu Sep 26 16:23:45 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
Second Revision No. 575-NFPA 1-2013 [Section No. A.42.3.3.3.3]

A.42.3.3.3.3

Some of the specifications for vault design and construction include the following:

1. The walls and floor of the vault are to be constructed of reinforced concrete at least 6 in. (50 mm) thick.
2. The top and floor of the vault and the tank foundation must be designed to withstand all anticipated loading, including loading from vehicular traffic, where applicable.
3. The walls and floor of a belowgrade vault must be designed to withstand anticipated soil and hydrostatic loading.
4. The vault must be liquidtight.
5. The vault enclosure must have no openings except those necessary for access to, inspection of, and filling, emptying, and venting of the tank.
6. The vault shall be provided with connections to permit ventilation to dilute, disperse, and remove any vapors prior to personnel entering the vault.
7. The vault must be provided with a means for personnel entry.
8. The vault must be provided with an approved means to admit a fire suppression agent.

[30A: A.4.3.3.3]
Second Revision No. 576-NFPA 1-2013 [ Section No. A.42.8.3.3 ]

<table>
<thead>
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<th>A.42.8.3.4</th>
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<tr>
<td>The selection of the 50 ft (15 m) separation distance for gaseous fuels is based on the existing separation requirements prescribed in NFPA 30A. No technical data were available to support different separation distances, and the 50 ft (15 m) distance was considered reasonable and conservative, based on the information available to the technical committee at the time. <a href="#">30A: A.12.3.3</a>. The selection of the 20 ft (6 m) separation distance between storage containers of different gaseous fuels is based on long-standing requirements in NFPA 52, NFPA 2, and NFPA 58. The separation distance between containers storing gaseous fuels and liquid motor fuel dispensers is based on the maximum 18-foot length of dispenser hose attached to the liquid fuel dispenser and the potential for a liquid pool fire to affect the gaseous fuel storage containers. <a href="#">30A: A.12.3.4</a></td>
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Submitter Information Verification

<table>
<thead>
<tr>
<th>Submitter Full Name:</th>
<th>Gregory Harrington</th>
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<tr>
<td>Organization:</td>
<td>National Fire Protection Assoc</td>
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Committee Statement

<table>
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<th>Extract update.</th>
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<td>Response Message:</td>
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</table>
Multipurpose dry chemical (ammonium phosphate) fire extinguishing agent is known to cause corrosion to aluminum aircraft components. Although the agent is capable of extinguishing fires on or near aircraft, it is likely that the agent will spread to other, uninvolved aircraft, causing damage from corrosion.

Submitter Information Verification

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Submittal Date: Fri Aug 23 13:04:18 EDT 2013

Committee Statement

Committee Statement: Extract update - incorporates TIA 12-1 on NFPA 407.
Response Message:
Multipurpose dry chemical (ammonium phosphate) should not be selected due to corrosion concerns relative to the agent. Carbon dioxide extinguishers should not be selected due to their limited range and effectiveness in windy conditions. [407:A.4.1.6.1]
Natural gas is a flammable gas. It is colorless, tasteless, and nontoxic. It is a light gas, weighing about two-thirds as much as air. As used in the systems covered by this standard, it tends to rise and diffuses rapidly in air when it escapes from the system.

Natural gas burns in air with a luminous flame. At atmospheric pressure, the ignition temperature of natural gas–air mixtures has been reported to be as low as 900°F (482°C). The flammable limits of natural gas–air mixtures at atmospheric pressure are about 5 percent to 15 percent by volume natural gas.

Natural gas is nontoxic but can cause anoxia (asphyxiation) when it displaces the normal 21 percent oxygen in air in a confined area without adequate ventilation.

Hydrogen is a colorless gas with no odor. It is not toxic; the immediate health hazard is that it can cause thermal burns. It is flammable and can form mixtures with air that are flammable or explosive. Hydrogen can react violently if combined with oxidizers, such as air, oxygen, and halogens. Hydrogen is an asphyxiant and can displace oxygen in a workplace atmosphere. The concentrations at which flammable or explosive mixtures form are much lower than the concentration at which asphyxiation risk is significant.

Hydrogen Data and Physical Properties.

Flash point: Not applicable (This material is a gas.)
Flammability limits in air: 4.0 percent to 75.0 percent
Autoignition temperature: 932°F (500°C)
Flammability classification (per 29 CFR 1910.1200): Flammable gas
Known or anticipated hazardous products of combustion: None

Cryogenic fluids are gases that have been liquefied by having their temperature brought below –130°F (–90°C). They are typically stored at low pressures in vacuum jacketed containers. Some of the potential hazards of cryogenic fluids are the following:

1. Extreme cold that freezes or damages human skin on contact and can embrittle metals
2. Extreme pressure resulting from rapid vaporization of the fluid during a leak or release of the cryogenic fluid
3. Asphyxiation resulting from a release of the cryogenic fluid that vaporizes and displaces air

Personnel handling cryogenic fluids should use the protective clothing prescribed on the material safety data sheet (MSDS). This clothing typically includes heavy leather gloves, aprons, and eye protection.
<table>
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<th>Organization:</th>
<th>National Fire Protection Assoc</th>
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<td>Submittal Date:</td>
<td>Fri Jul 12 17:23:46 EDT 2013</td>
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</table>

### Committee Statement

Committee Statement: Extract update.

Response Message:
Current DOT and TC specifications, exemptions, and specified permits do not address the use of cylinders that are approved for the transportation of natural gas to be used in CNG service.

The following Compressed Gas Association publications are relevant cylinder inspection standards:

1. CGA C-6, *Standards for Visual Inspection of Steel Compressed Gas Cylinders*
2. CGA C-6.1, *Standards for Visual Inspection of High Pressure Aluminum Compressed Gas Cylinders*
4. CGA C-10, *Recommended Procedures for Changes of Gas Service for Compressed Gas Cylinders*

The following Compressed Gas Association publication is specified in ANSI/ISA NGV2, *Basic Requirements for Compressed Natural Gas Vehicle (NGV) Fuel Containers*, as appropriate for CNG container inspection: CGA C-6.4, *Methods of External Visual Inspection of Natural Gas Vehicle (NGV) Fuel Containers and Their Installations*

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Submitter Full Name: Gregory Harrington
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Street Address:
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Submittal Date: Fri Jul 12 17:27:21 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
A.50.1.4
This judgment should take into account the type of cooking being performed, the items being cooked, and the frequency of cooking operations. Examples of operations that might not require compliance with Chapter NFPA 96 include the following:

(1) Day care centers warming bottles and lunches
(2) Therapy cooking facilities in health care occupancies
(3) Churches and meeting operations that are not cooking meals that produce grease-laden vapors
(4) Employee break rooms where food is warmed

Submitter Information Verification

Submitter Full Name: Gregory Harrington
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Submittal Date: Mon Aug 19 15:03:52 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
See Figure A.50.2.2(a) through Figure A.50.2.2(h) for clarification of the appropriate clearances required in 50.2.2. [96:A.4.2]

**Figure A.50.2.2(a) Typical Section View for Building with Two Stories or More with Fire-Rated Floor–Ceiling Assembly. [96:Figure A.4.2(a)]**

**Figure A.50.2.2(b) Typical Section View for One-Story Building with Fire-Rated Roof–Ceiling Assembly. [Clearances given in Figure A.50.2.2(a) apply also to this drawing.] [96:Figure A.4.2(b)]**

**Figure A.50.2.2(c) Typical Section View for Building with Two Stories or More with Non-Fire-Rated Ceiling and Fire-Rated Floor. [Clearances given in Figure A.50.2.2(a) apply also to this drawing.] [96:Figure A.4.2(c)]**
Figure A.50.2.2(d) Typical Section View for One-Story Building Without Fire-Rated Roof-Ceiling Assembly. [96:Figure A.4.2(d)]

Figure A.50.2.2(e) Detail Drawings Showing Hoods Penetrating Ceilings. [96:Figure A.4.2(e)]
Figure A.50.2.2(f) Wall Mounted Fan [96:Figure A.4.2(f)]
Figure A.50.2.2(g) Example of Clearance Reduction System: 9 in. (229 mm) Clearance to Combustible Material. [96:Figure A.4.2(g)]

Figure A.50.2.2(h) Example of Clearance Reduction System: 3 in. (76 mm) Clearance to Combustible Material. [96:Figure A.4.2(h)]

Submitter Information Verification

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Page 821 of 866
Committee Statement

Committee Statement: Wrong figure shown for Figure A.50.2.2(f) - should be Figure A.4.2(f) from NFPA 96-2014.

Response Message:
Fixed temperature-sensing elements other than the fusible metal alloy type should be permitted to remain continuously in service, provided they are inspected and cleaned or replaced if necessary in accordance with the manufacturer’s instructions every 12 months or more frequently to ensure proper operation of the system. Where no buildup of grease or other material is evident or the devices can be adequately cleaned, annual replacement is not necessary. [96: A.11.2.6]

Submitter Information Verification

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Committee Statement

**Committee Statement:** Extract update.  
**Response Message:**
A.50.6.1

A good operating practice is for cleaning personnel of commercial kitchen exhaust systems to have personal protective equipment (PPE) and height access equipment. The following items should be considered as a minimum:

1. Eye protection
2. Hand protection
3. Head protection
4. Foot protection
5. Respiratory protection
6. Fall protection
7. Ladders
8. Lock-out/tag-out kit

Preparation. The fan should be turned off, locked out, and tagged out. Open flames should be extinguished, and switches/breakers serving the appliance and cooking area outlets should be locked out. If the switches/breakers are not capable of being locked out and tagged out, any solid-fuel cooking appliances should be extinguished and the solid fuel removed. [96: A.11.6.1]

Removal or Covering of Equipment. Food products, cookware, and cooking support equipment that can be removed should be removed from the cleaning area. Equipment that cannot be removed should be covered. [96: A.11.6.1]

Cleaning Methods. The following methods for cleaning surfaces covered with grease and contaminants have been proved to be effective:

1. Manual cleaning by scraping, grinding, or scrubbing
2. Chemical cleaning with agents and water
3. Pressure washing with pressurized water or pressurized water and agents
4. Steam cleaning with pressurized steam

Waste Water and Solid Waste. Water and agents used in the cleaning process and solid waste should be collected for disposal. [96: A.11.6.1]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
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Submittal Date: Mon Aug 19 15:27:24 EDT 2013
Committee Statement

Committee Statement: Extract update.
Response Message:
## Second Revision No. 395-NFPA 1-2013 [ New Section after A.50.5.6.2 ]

### A.50.6.1.1

Cooking appliances that are designed for permanent installation, including, but not limited to, ranges, ovens, stoves, broilers, grills, fryers, griddles, and barbecues, should be installed in accordance with the manufacturer’s installation instructions.

1. Commercial electric cooking appliances should be listed and labeled in accordance with ANSI/UL 197.
2. Microwave cooking appliances should be listed and labeled in accordance with ANSI/UL 923.
3. Oil-burning stoves should be listed and labeled in accordance with ANSI/UL 896.
4. Wood-fired cooking appliances should be listed and labeled in accordance with ANSI/UL 737, UL Subject 2162, or UL Subject 2728, depending on exact appliance type.
5. Gas-fired cooking appliances should be listed and labeled in accordance with ANSI Z83.11. Gas-fired cooking appliances should be listed and labeled in accordance with ANSI Z83.11.
6. Gas-wood-fired cooking appliances should be listed and labeled in accordance with ANSI Z83.11, ANSI/UL 737, and/or UL Subject 2162, depending on exact appliance type.

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### Submitter Information Verification

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**Submittal Date:** Mon Aug 19 15:34:12 EDT 2013

### Committee Statement

**Committee Statement:** Extract update.  
**Response Message:**
A.50.6.1.2.1
Gas-fueled appliances should be installed to the requirements of NFPA 54 or NFPA 58. [96:A.12.1.2.1]

Submitter Information Verification

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Submittal Date: Mon Aug 19 15:38:15 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
A.60.2.19
Examples of use include, but are not limited to, blending, mixing, reacting, distillation, heating or cooling, pumping, compressing, drying, screening, filling, loading and unloading, repackaging, scrubbing, absorbing, neutralizing, and incineration. [400: A.3.3.276]

Submitter Information Verification

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Submittal Date: Thu Jul 18 12:52:35 EDT 2013

Committee Statement

Committee Statement: Relocated to A.3.3.276.
Response Message:
Normal Temperature and Pressure (NTP). There are different definitions of normal conditions. The normal conditions defined here are the ones most commonly used in the compressed gas and cryogenic fluid industry. [A.3.3.66 76]
A.63.2.8

Under the requirements of 29 CFR 1910.38 established by OSHA regulations, employers must establish an employee alarm system that complies with 29 CFR 1910.165. The requirements of 29 CFR 1910.165 for the employee alarm system include, but are not limited to, systems that are capable of being perceived above ambient noise or light levels by all employees in the affected portions of the workplace. Tactile devices may be used to alert those employees who would not otherwise be able to recognize the audible or visual alarm. The alarm system can be electrically powered or powered by pneumatic or other means. State, local, or other governmental regulations might also establish requirements for employee alarm systems.

Submitter Information Verification

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Submittal Date: Mon Jul 15 11:49:01 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
A.65.10.3.6
Appropriate sprinkler system design criteria should be determined based on an engineering analysis
prepared by a fire-protection engineer. [1124: A.7.3.6]

A.65.10.3.7
See A.65.10.3.6. [1124: A.7.3.7]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
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Submittal Date: Fri Aug 23 12:06:11 EDT 2013

Committee Statement

Committee Statement: Extract update - incorporates TIA 13-2 on NFPA 1124.
Response Message:
A.65.10.3.20

Refer to the Material Safety Data Sheet (MSDS) for additional information. [1124:A.7.3.20]

Submitter Information Verification

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Submittal Date: Mon Jul 22 14:50:34 EDT 2013

Committee Statement

Committee Statement: Editorial.
Response Message:
For existing buildings, appropriate sprinkler system criteria should be determined based on an engineering analysis prepared by a fire protection engineer. [4124: A.7.5.1.1]
Second Revision No. 192-NFPA 1-2013 [Section No. A.66.1.3(9)]

<table>
<thead>
<tr>
<th>A.66.1.3(9)</th>
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<tbody>
<tr>
<td>Requirements for the use and installation of alcohol-based hand rubs are covered in this Code and NFPA 101, Life Safety Code. [30:A.1.1.2(9)]</td>
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Submitter Information Verification

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<td>Wed Jul 24 13:45:42 EDT 2013</td>
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Committee Statement

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<td>Response Message:</td>
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A.66.3.3.19
Hazardous Material or Hazardous Chemical. These dangers can arise from, but are not limited to, toxicity, reactivity, instability, or corrosivity. [30:2015 A.3.3.24]

Submitter Information Verification

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Committee Statement

Committee Statement: Extract update.
Response Message:
A.66.3.3.33.3.1

Nonmetallic Portable Tank. Permissible nonmetallic portable tanks for shipping Class I, Class II, and Class IIIA liquids are governed by hazardous materials transportation regulations promulgated by the United Nations (UN) and the U.S. Department of Transportation (DOT). Small tanks for Class IIIB liquids are not governed by either UN or DOT hazardous materials regulations. Fiber portable tanks for Class IIIB liquids include composite designs consisting of a multi-ply corrugated box with a rigid or flexible inner plastic bladder. [30:2015 A.3.3.51.4.1]
A.66.3.3.40

Warehouse. Warehousing operations referred to in these definitions are those operations not accessible to the public and include general-purpose, merchandise, distribution, and industrial warehouse–type operations. [30, : 2015 A.3.3.62 ]
A.66.6.5.1(8)

With respect to frictional heat or sparks, it is recognized that there is a need to control sources of ignition, including mechanical sparks from hand tools, that have sufficient energy to ignite flammable vapors. Studies, anecdotes, codes, and referenced standards (e.g., API 2214, Spark Ignition Properties of Hand Tools) show that there is a potential for hand tool sparks to ignite flammable vapors from a limited number of chemicals and under certain unique conditions. These include flammable liquids with low minimum ignition energies, operations in which flammable or combustible liquids are heated, and atypical spark generation that can occur between specific types of hand tools and struck surfaces (i.e., thermite reactions or impact of steel tools on quartzitic materials). Even spark-resistant tools might not provide suitable protection against ignition. For example, hard metal particles can become imbedded in the relatively soft metal of spark-resistant tools, and these particles can cause sparks when the tools are used. [30: A.6.5.1(8)]

NFPA 30 requires analyses, such as job safety analyses or activity hazard analyses, of the hazards and risks of a given task and the application of appropriate protective measures to prevent or mitigate the hazards and risks. This includes identification and mitigation of ignition risk from multiple sources, including hand tools. Due to the complexity of the numerous operations involving flammable liquids, NFPA 30 cannot address all conditions in which spark-resistant tools should be made mandatory, might be advisable, or are unnecessary to help control the ignition risk of any given operation. [30: A.6.5.1(8)]

It is recognized that the adoption of the new Globally Harmonized System for labeling by the U.S. Occupational Safety and Health Administration (29 CFR 1910.1200, Appendix C) creates a generalized mandate for the use of spark-resistant tools. However, based on available technical information, this mandate goes beyond what is considered necessary for fire safety, given the fact that it applies to liquids that present little risk of ignition unless heated to or above their flash points. (See A.66.6.4.1.2.) [30: A.6.5.1(8)]

Submitter Information Verification

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Submittal Date: Wed Jul 24 13:56:14 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
A.66.6.7.1
Other recognized fire prevention and control factors, involving construction, location, and separation, are addressed elsewhere in this section Section 66.6. [30:A.6.7.1]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
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City: 
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Submittal Date: Wed Jul 24 14:00:32 EDT 2013

Committee Statement

Committee Statement: Extract update.
Response Message:
A.66.9.4.1(6)
The term rigid nonmetallic intermediate bulk container is used to describe intermediate bulk containers that have a plastic vessel that serves as the primary liquid-holding component. This vessel can be enclosed in or encased by an outer structure consisting of a steel cage, a single-wall metal or plastic enclosure, a double wall of foamed or solid plastic, or a paperboard enclosure. These are often called composite IBCs, which is the term used by the U.S. Department of Transportation (DOT) to describe them. The term rigid nonmetallic intermediate bulk container also denotes an all-plastic single-wall IBC that might or might not have a separate plastic base and for which the containment vessel also serves as the support structure. IBCs that have an outer liquidtight metal structure are considered to be metal IBCs or metal portable tanks by DOT and are defined in 66.9.4.1(1). [30:A.9.4.1(5)6]
Paragraph Subsection 66.16.8.2 requires that control of liquid spread be provided to prevent a pool fire on the floor from spreading and opening more sprinkler heads than the design of the sprinkler system anticipates. For example, if the sprinkler system is designed to provide 0.45 gpm/ft$^2$ over 3000 ft$^2$ (18 mm/min over 280 m$^2$), 66.16.8.2 requires that the spread of liquid also be limited to 3000 ft$^2$ (280 m$^2$). Various means are available to achieve this control.

Typical methods use trench or spot drains that divide the floor of the storage area into rectangles having areas equal to or less than the design area of the sprinkler system. Drains are centered under racks, and the floor is sloped toward the drain trenches with a minimum slope of 1 percent. The floor is made highest at the walls. See Figure A.66.16.8.2(a) and Figure A.66.16.8.2(b). Trenches are arranged as described in NFPA 15, Standard for Water Spray Fixed Systems for Fire Protection, and as shown in Figure A.66.16.8.2(c). Note particularly the dimensions of the trenches, and note that the solid covering spans one-third of the width on either side of the open grate and the open grate spans the middle third. Spot drains can be similarly arranged. Another method, shown in Figure A.66.16.8.2(d), uses spot drains located at building columns, where the area between any four columns does not exceed the design area of the sprinkler system. The floor is sloped to direct water flow to the drains.

Connections to the drains are provided at trapped sumps, arranged as described in NFPA 15. See Figure A.66.16.8.2(e). To provide a safety factor, the drain pipes are sometimes sized to carry 150 percent of anticipated sprinkler discharge. The following equation can be used to calculate the flow of the drain pipe:

$$F = 1.5DA$$ \[\text{A.66.16.8.2}\]

where:

- $F$ = flow (gpm or L/min)
- $D$ = sprinkler design density (gpm/ft$^2$ or L/min/m$^2$)
- $A$ = sprinkler design area (ft$^2$ or m$^2$)

Additional information can be found in Guidelines for Safe Warehousing of Chemicals, Center for Chemical Process Safety, American Institute of Chemical Engineers.

Figure A.66.16.8.2(a) General Scheme for Warehouse Spill Control of Liquids. [30: Figure A.16.8.2(a)]

Figure A.66.16.8.2(b) Plan View of Warehouse Spill Control of Liquids. [30: Figure A.16.8.2(b)]

Figure A.66.16.8.2(c) Details of Drainage Trench Design. [30: Figure A.16.8.2(c)]
Figure A.66.16.8.2(d) Typical Arrangement of Floor Drains. [30: Figure A.16.8.2(d)]

Submittal Information Verification

Submitter Full Name: Gregory Harrington
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Street Address: 
City: 
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Submittal Date: Wed Jul 24 14:11:58 EDT 2013

Committee Statement
A.66.17.1.1
Facilities designed in accordance with Chapter 17 of NFPA 30 do not use the maximum allowable quantity and control area concepts found in the building code. [30:A.17.1.1]

Submitter Information Verification

Submitter Full Name: Gregory Harrington
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Street Address:
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Submittal Date: Wed Jul 24 14:14:48 EDT 2013

Committee Statement

Committee Statement: Editorial.
Response Message:
A.66.19.7.1.3
The goal of 66.19.7 is to consolidate in one location all requirements for commercial kitchen cooking oil storage and operations. There are a number of chapters in NFPA 30 that apply to these systems, including chapters on storage tanks and piping systems, transferring and dispensing of liquids, and so forth. Many of these requirements are more applicable to industrial or process situations and commercial kitchen cooking oil storage and use was not anticipated. All applicable chapters have been assessed in detail. Those specific requirements in this section that are in potential conflict with other sections of this code have been identified, and alternate methods or exceptions have been developed where appropriate. This approach eliminates the need to add exceptions throughout the existing code, improving ease of use particularly for fire officials. [30: A.19.7.1.3]

A.66.19.7.2.1.2
Waste oil is drained from commercial cooking equipment via a transfer pump and transfer lines to a waste oil storage tank. The oil might be as hot as 375°F (190°C), still well below the oil’s flash point. Experience shows that the oil loses significant heat in the transfer process. The maximum temperature of waste cooking oil entering the storage tank is typically below 235°F (113°C). The storage tank should be constructed of materials compatible with cooking oil in that temperature range. [30: A.19.7.2.1.2]

A.66.19.7.2.2.1
Existing steel tanks listed for flammable and combustible liquids are considered acceptable for waste oil use. These tank standards contain design and construction requirements that would not meet food code requirements, making the tanks unacceptable for storage of liquid food products (i.e., fresh cooking oil). [30: A.19.7.2.2.1]

A.66.19.7.2.3.4
High flash point cooking oils do not create ignitable vapors when stored under the conditions specified in 66.19.7. [30: A.19.7.2.3.4]

A.66.19.7.2.4.2
Nonmetallic tanks will melt above the liquid level as an external exposure fire progresses, venting the vapor space of the tank. [30: A.19.7.2.4.2]

A.66.19.7.2.5
Although generally not required for tanks storing Class III B liquids, overfill protection is considered necessary for cooking oil storage tanks to prevent inadvertent spillage. [30: A.19.7.2.5]

A.66.19.7.2.6.1
The prohibition of electrical immersion heaters in nonmetallic tanks eliminates a primary ignition source for the oil stored in the tank. [30: A.19.7.2.6.1]

A.66.19.7.2.6.2
The temperature limitation of 140°F (60 °C) corresponds to ASTM C 1055 (ISO 13732-1) restrictions for maximum allowable temperatures of nonmetallic industrial surfaces for human contact. [30: A.19.7.2.6.2]

A.66.19.7.3.1.1
The kitchen cooking area has historically been an area where fires occur. Tanks should, therefore, be located away from the kitchen cooking area. [30: A.19.7.3.1.1]

A.66.19.7.3.1.2
The area beneath the ventilation hood is another area of potential accidental ignition. [30: A.19.7.3.1.2]

A.66.19.7.3.3.2
An example of a fitting with a positive shutoff is a spring-loaded check valve or a hydraulic quick-coupling with a spring-loaded poppet. [30: A.19.7.3.3.2]

A.66.19.7.3.4.1
Cooking oil storage tanks are atmospheric tanks with open vents. The requirement in Section 66.21 to pressurize the tank for leak testing would be difficult to achieve in the field, due to tank construction and configuration. It is also desirable to prevent water contamination of the cooking oil. A more appropriate test would be to fill the tank with cooking oil to cover all connections and seams below the normal liquid level. [30: A.19.7.3.4.1]
Waste oil lines are generally pumped until there is little residual oil remaining in the lines. Fresh cooking oil lines are likely to contain residual oil after fill and removal operations. Restricting the fresh oil line size to 1.25 in. (32 mm) maximum inside diameter limits the amount of oil in the line. Additionally, the requirement for check valves or antisiphon valves on the lines at points where the lines connect to the tank eliminates the possibility of a compromised line siphoning the contents of the tank. To the extent possible, transfer lines should avoid being routed over seating areas. These requirements are designed to minimize fire risk by limiting cooking oil quantities in transfer lines that could become involved in a fire. In buildings protected by automatic fire sprinklers, the need to add sprinklers in previously unprotected spaces (assuming the transfer lines are located in these spaces) should be considered in accordance with the requirements of NFPA 13, *Standard for the Installation of Sprinkler Systems*. [30: A.19.7.5.1]

The temperature and pressure ratings for the waste oil lines are consistent with the maximum expected conditions. [30: A.19.7.5.2]
Protection from tampering or trespassing might include one or more of the following: appropriate fencing around isolated tanks in remote areas; "No Trespassing" signs; warning signs indicating the fire hazard of the tank or its contents; locked or secured access to stairways and ladders; locked or secured hatches, valves, and so forth. [30: A.21.7.2.2]
F.1.1 NFPA Publications.
National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471.


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SFPE Engineering Guide.

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Committee Statement

Committee Statement: Added ref to NFPA 2113 (A.40.3.2.2.5); NFPA 499 (A.40.4.7); updated title of NFPA 13R.
Response Message:
Second Revision No. 398-NFPA 1-2013 [ Section No. G.1.2.2 ]

F.1.2.2 ANSI Publications.
American National Standards Institute, Inc., 25 West 43rd Street, 4th Floor, New York, NY 10036.
ANSI/ISA 12.02.01, Electrical Apparatus for use in Class I, Zones 0, 1 & 2 Hazardous (Classified) Locations - Intrinsic Safety, 2002.
ANSI/ISA 61241, (12.10.02), Electrical Apparatus for Use in Zone 20, Zone 21 and Zone 22 Hazardous (Classified) Locations - General Requirements, 2006.

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Committee Statement

Committee Statement: Extract update.
Response Message:
## F.1.2.4 ASHRAE Publications

American Society of Heating, Refrigerating and Air Conditioning Engineers, Inc., 1791 Tullie Circle, NE, Atlanta, GA 30329-2305.


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### Committee Statement

**Committee Statement:** Referenced publication was added to new A.53.1.1.1.

**Response Message:**
F.1.2.6 ASTM Publications.
ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959.

ASTM Manual on Flash Point Standards and Their Use.
ASTM E 2174, Standard Practice for On-Site Inspection of Installed Fire Stops, 2010ae1.

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Committee Statement

Committee Statement:

Added refs to ASTM E 1491 and ASTM E 2021 (A.40.4.7); added ASTM A380/A380M (A.63.3.1.19.2).

Response Message:

Public Comment No. 35-NFPA 1-2013 [Section No. G.1.2.5]
F.1.2.13  IEC Publication s.
International Electrotechnical Commission, 3, rue de Varembé, P.O. Box 131, CH-1211 Geneva 20, Switzerland.


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Submittal Date: Mon Jul 22 11:35:08 EDT 2013

Committee Statement

Committee Statement: Added IEC ref (A.40.4.3.4).
Response Message:
### F.1.2.21 UL Publications.

Underwriters Laboratories Inc., 333 Pfingsten Road, Northbrook, IL 60062-2096.

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Submittal Date: Mon Aug 19 15:44:48 EDT 2013

Committee Statement

Committee Statement: Added informational references from NFPA 96-2014 extracts.
Response Message:
F.2 References for Extracts.
The following documents are listed here to provide reference information, including title and edition, for extracts given throughout the nonmandatory sections of this code as indicated by a reference in brackets [ ] following a section or paragraph. These documents are not a part of the requirements of this document unless also listed in Chapter 2 for other reasons.

<table>
<thead>
<tr>
<th>Document Title</th>
<th>Edition</th>
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<tbody>
<tr>
<td>NFPA 10, Standard for Portable Fire Extinguishers</td>
<td>2013 edition</td>
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<tr>
<td>NFPA 13, Standard for the Installation of Sprinkler Systems</td>
<td>2013 edition</td>
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<td>NFPA 14, Standard for the Installation of Standpipe and Hose Systems</td>
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<td>NFPA 51B, Standard for Fire Prevention During Welding, Cutting, and Other Hot Work</td>
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<td>NFPA 70® , National Electrical Code®</td>
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<td>NFPA 70B, Recommended Practice for Electrical Equipment Maintenance</td>
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<td>NFPA 72® , National Fire Alarm and Signaling Code</td>
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<td>NFPA 102, Standard for Grandstands, Folding and Telescopic Seating, Tents, and Membrane Structures</td>
<td>2011 edition</td>
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<td>NFPA 140, Standard on Motion Picture and Television Production Studio Soundstages, Approved Production Facilities, and Production Locations</td>
<td>2013 edition</td>
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<tr>
<td>NFPA 220, Standard on Types of Building Construction</td>
<td>2015 edition</td>
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</tbody>
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Committee Statement

Committee Statement: Editorial - NFPA 1600 extracts deleted.
Response Message: