November 2014

At its meeting on October 24, 2014, the Ohio Board of Building Standards adopted the rule changes identified as Amendments Group 89. These rule amendments were adopted for an effective date of January 1, 2015.

Amendments Group 89 included the following amended Ohio Building Code (OBC) rules. For your use, a summary of the changes is provided below and the text of the rules can be found immediately following this coversheet:

<table>
<thead>
<tr>
<th>Rule Number</th>
<th>OBC Chapter</th>
<th>Chapter Title</th>
<th>Effective date</th>
</tr>
</thead>
<tbody>
<tr>
<td>4101:1-3-01</td>
<td>3</td>
<td>Use and occupancy classification.</td>
<td>January 1, 2015</td>
</tr>
</tbody>
</table>

**Reason for Amendments:** 4101:1-3-01 to clarify the appropriate NFPA 70 (National Electrical Code) edition to be used for R-3 occupancies using the Residential Code of Ohio requirements; 4101:1-35-01 to update the NFPA 70 standard in the Ohio Building Code to the 2014 edition for non-residential buildings as a result of approved Petition #13-004, to add “residential” to the title of ASHRAE 90.1, and to list TIA 10-4 and TIA 10-5 with the NFPA 72 standard to clarify the intent of the low frequency alarm requirements for fire alarm and emergency alarm systems and smoke alarms.

If you should have any questions regarding these rule changes, please call BBS staff at (614)644-2613.
4101:1-3-01 Use and occupancy classification.

[Comment: When a reference is made within this rule to a federal statutory provision, an industry consensus standard, or any other technical publication, the specific date and title of the publication as well as the name and address of the promulgating agency are listed in rule 4101:1-35-01 of the Administrative Code. The application of the referenced standards shall be limited and as prescribed in section 102.5 of rule 4101:1-1-01 of the Administrative Code.]

SECTION 301
GENERAL

301.1 Scope. The provisions of this chapter shall control the classification of all buildings and structures as to use and occupancy.

SECTION 302
CLASSIFICATION

302.1 General. Structures or portions of structures shall be classified with respect to occupancy in one or more of the groups listed below. A room or space that is intended to be occupied at different times for different purposes shall comply with all of the requirements that are applicable to each of the purposes for which the room or space will be occupied. Structures with multiple occupancies or uses shall comply with Section 508. Where a structure is proposed for a purpose that is not specifically provided for in this code, such structure shall be classified in the group that the occupancy most nearly resembles, according to the fire safety and relative hazard involved.

2. Business (see Section 304): Group B
3. Educational (see Section 305): Group E
4. Factory and Industrial (see Section 306): Groups F-1 and F-2
6. Institutional (see Section 308): Groups I-1, I-2, I-3 and I-4
7. Mercantile (see Section 309): Group M
8. Residential (see Section 310): Groups R-1, R-2, R-3 and R-4
9. Storage (see Section 311): Groups S-1 and S-2
10. Utility and Miscellaneous (see Section 312): Group U

SECTION 303
ASSEMBLY GROUP A

303.1 Assembly Group A. Assembly Group A occupancy includes, among others, the use of a building or structure, or a portion thereof, for the gathering of persons for purposes such as civic, social or religious functions; recreation, food or drink consumption or awaiting transportation.

Exceptions:

1. A building or tenant space used for assembly purposes with an occupant load of less than 50 persons shall be classified as a Group B occupancy.
2. A room or space used for assembly purposes with an occupant load of less than 50 persons and accessory to another occupancy shall be classified as a Group B occupancy or as part of that occupancy.
3. A room or space used for assembly purposes that is less than 750 square feet (70 m\(^2\)) in area and accessory to another occupancy shall be classified as a Group B occupancy or as part of that occupancy.
4. Assembly areas that are accessory to Group E occupancies are not considered separate occupancies except when applying the assembly occupancy requirements of Chapter 11.
5. Accessory religious educational rooms and religious auditoriums with occupant loads of less than 100 are not considered separate occupancies.

Assembly occupancies shall include the following:

A-1 Assembly uses, usually with fixed seating, intended for the production and viewing of the performing arts or motion pictures including, but not limited to:
- Motion picture theaters
- Symphony and concert halls
- Television and radio studios admitting an audience
- Theaters

A-2 Assembly uses intended for food and/or drink consumption including, but not limited to:
- Banquet halls
- Night clubs
- Restaurants
- Taverns and bars

A-3 Assembly uses intended for worship, recreation or amusement and other assembly uses not classified elsewhere in Group A including, but not limited to:
Amusement arcades
Art galleries
Bowling alleys
Community halls
Courtrooms
Dance halls (not including food or drink consumption)
Exhibition halls
Funeral parlors
Gymnasiums (without spectator seating)
Indoor swimming pools (without spectator seating)
Indoor tennis courts (without spectator seating)
Lecture halls
Libraries
Museums
Places of religious worship
Pool and billiard parlors
Waiting areas in transportation terminals

A-4 Assembly uses intended for viewing of indoor sporting events and activities with spectator seating including, but not limited to:

Arenas
Skating rinks
Swimming pools
Tennis courts

A-5 Assembly uses intended for participation in or viewing outdoor activities including, but not limited to:

Amusement park structures
Bleachers
Grandstands
Stadiums

SECTION 304
BUSINESS GROUP B

304.1 Business Group B. Business Group B occupancy includes, among others, the use of a building or structure, or a portion thereof, for office, professional or service-type transactions, including storage of records and accounts. Business occupancies shall include, but not be limited to, the following:

Airport traffic control towers
Ambulatory health care facilities
Animal hospitals, kennels and pounds
Banks
Barber and beauty shops
Car wash
Civic administration
Clinic—outpatient
Dry cleaning and laundries: pick-up and delivery stations and self-service
Educational occupancies for students above the 12th grade
Electronic data processing
Laboratories: testing and research
Motor vehicle showrooms
Post offices
Print shops
Professional services (architects, attorneys, dentists, physicians, engineers, etc.)
Radio and television stations
Telephone exchanges
Training and skill development not within a school or academic program

304.1.1 Definitions. The following words and terms shall, for the purposes of this section and as used elsewhere in this code, have the meanings shown herein.

AMBULATORY HEALTH CARE FACILITY. In accordance with Section 422, buildings or portions thereof used to provide medical, surgical, psychiatric, nursing or similar care on a less than 24-hour basis to individuals who are rendered incapable of self-preservation.

CLINIC, OUTPATIENT. Buildings or portions thereof used to provide medical care on less than a 24-hour basis to individuals who are not rendered incapable of self-preservation by the services provided.

SECTION 305
EDUCATIONAL GROUP E

305.1 Educational Group E. Educational Group E occupancy includes, among others, the use of a building or structure, or a portion thereof, by six or more persons at any one time for educational purposes through the 12th grade. Religious educational rooms and religious auditoriums, which are accessory to places of religious worship in accordance with Section 303.1 and have occupant loads of less than 100, shall be classified as A-3 occupancies.
305.2 Day care. The use of a building or structure, or portion thereof, for educational, supervision or personal care services for more than five children older than 2 1/2 years of age, shall be classified as a Group E occupancy. A child day care facility that provides care for more than five but no more than 100 children 2 1/2 years or less of age, where the rooms in which the children are cared for are located on a level of exit discharge serving such rooms and each of these child care rooms has an exit door directly to the exterior, shall be classified as Group E.

SECTION 306
FACTORY GROUP F

306.1 Factory Industrial Group F. Factory Industrial Group F occupancy includes, among others, the use of a building or structure, or a portion thereof, for assembling, disassembling, fabricating, finishing, manufacturing, packaging, repair or processing operations that are not classified as a Group H hazardous or Group S storage occupancy.

306.2 Factory Industrial F-1 Moderate-hazard Occupancy. Factory industrial uses which are not classified as Factory Industrial F-2 Low Hazard shall be classified as F-1 Moderate Hazard and shall include, but not be limited to, the following:
- Aircraft (manufacturing, not to include repair)
- Appliances
- Athletic equipment
- Automobiles and other motor vehicles
- Bakeries
- Beverages: over 16-percent alcohol content
- Bicycles
- Boats
- Brooms or brushes
- Business machines
- Cameras and photo equipment
- Canvas or similar fabric
- Carpets and rugs (includes cleaning)
- Clothing
- Construction and agricultural machinery
- Disinfectants
- Dry cleaning and dyeing
- Electric generation plants
- Electronics
- Engines (including rebuilding)
Food processing
Furniture
Hemp products
Jute products
Laundries
Leather products
Machinery
Metals
Millwork (sash and door)
Motion pictures and television filming (without spectators)
Musical instruments
Optical goods
Paper mills or products
Photographic film
Plastic products
Printing or publishing
Recreational vehicles
Refuse incineration
Shoes
Soaps and detergents
Textiles
Tobacco
Trailers
Upholstering
Wood; distillation
Woodworking (cabinet)

306.3 Factory Industrial F-2 Low-hazard Occupancy. Factory industrial uses that involve the fabrication or manufacturing of noncombustible materials which during finishing, packing or processing do not involve a significant fire hazard shall be classified as F-2 occupancies and shall include, but not be limited to, the following:

Beverages; up to and including 16-percent alcohol content
Brick and masonry
Ceramic products
Foundries
Glass products
Gypsum
Ice
Metal products (fabrication and assembly)
SECTION 307
HIGH-HAZARD GROUP H

307.1 High-hazard Group H. High-hazard Group H occupancy includes, among others, the use of a building or structure, or a portion thereof, that involves the manufacturing, processing, generation or storage of materials that constitute a physical or health hazard in quantities in excess of those allowed in control areas complying with Section 414, based on the maximum allowable quantity limits for control areas set forth in Tables 307.1(1) and 307.1(2). Hazardous occupancies are classified in Groups H-1, H-2, H-3, H-4 and H-5 and shall be in accordance with this section, the requirements of Section 415 and the fire code. Hazardous materials stored, or used on top of roofs or canopies shall be classified as outdoor storage or use and shall comply with the fire code.

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

1. Buildings and structures occupied for the application of flammable finishes, provided that such buildings or areas conform to the requirements of Section 416 and the fire code.

2. Wholesale and retail sales and storage of flammable and combustible liquids in mercantile occupancies conforming to the fire code.

3. Closed piping system containing flammable or combustible liquids or gases utilized for the operation of machinery or equipment.

4. Cleaning establishments that utilize combustible liquid solvents having a flash point of 140°F (60°C) or higher in closed systems employing equipment listed by an approved testing agency, provided that this occupancy is separated from all other areas of the building by 1-hour fire barriers constructed in accordance with Section 707 or 1-hour horizontal assemblies constructed in accordance with Section 712, or both.

5. Cleaning establishments that utilize a liquid solvent having a flash point at or above 200°F (93°C).


7. Refrigeration systems.

8. The storage or utilization of materials for agricultural purposes on the premises.

9. Stationary batteries utilized for facility emergency power, uninterrupted power supply or telecommunication facilities, provided that the batteries are provided with safety venting caps and ventilation is provided in accordance with the mechanical code.

10. Corrosives shall not include personal or household products in their original packaging used in retail display or commonly used building
11. Buildings and structures occupied for aerosol storage shall be classified as Group S-1, provided that such buildings conform to the requirements of the fire code.

12. Display and storage of nonflammable solid and nonflammable or noncombustible liquid hazardous materials in quantities not exceeding the maximum allowable quantity per control area in Group M or S occupancies complying with Section 414.2.5.

13. The storage of black powder, smokeless propellant and small arms primers in Groups M and R-3 and special industrial explosive devices in Groups B, F, M and S, provided such storage conforms to the quantity limits and requirements prescribed in the fire code.

### TABLE 307.1(1)
MAXIMUM ALLOWABLE QUANTITY PER CONTROL AREA OF HAZARDOUS MATERIALS POSING A PHYSICAL HAZARD

<table>
<thead>
<tr>
<th>MATERIAL</th>
<th>CLASS</th>
<th>GROUP WHEN THE MAXIMUM ALLOWABLE QUANTITY IS EXCEEDED</th>
<th>STORAGE&lt;sup&gt;b&lt;/sup&gt;</th>
<th>USE-CLOSED SYSTEMS&lt;sup&gt;b&lt;/sup&gt;</th>
<th>USE-OPEN SYSTEMS&lt;sup&gt;b&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Solid pounds (cubic feet)</td>
<td>Liquid gallons (pounds)</td>
<td>Gas (cubic feet at NTP)</td>
<td>Solid pounds (cubic feet)</td>
</tr>
<tr>
<td>Combustible liquid&lt;sup&gt;c, j&lt;/sup&gt;</td>
<td>II IIIB</td>
<td>H-2 or H-3 N/A</td>
<td>120&lt;sup&gt;d, e&lt;/sup&gt;</td>
<td>N/A</td>
<td>120&lt;sup&gt;d&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>H-2 or H-3 N/A</td>
<td>330&lt;sup&gt;d, e&lt;/sup&gt;</td>
<td>13,200&lt;sup&gt;e, f&lt;/sup&gt;</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Combustible fiber</td>
<td></td>
<td>H-3</td>
<td>(100)</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(1,000)</td>
<td>N/A</td>
<td>N/A</td>
<td>(1,000)</td>
</tr>
<tr>
<td>Consumer fireworks(Class C, Common)</td>
<td>1.4G</td>
<td>H-3</td>
<td>0</td>
<td>N/A</td>
<td>0</td>
</tr>
<tr>
<td>Flammable gas</td>
<td></td>
<td>H-2</td>
<td>N/A</td>
<td>45&lt;sup&gt;d&lt;/sup&gt;</td>
<td>N/A</td>
</tr>
<tr>
<td>Flammable gas</td>
<td></td>
<td>H-3</td>
<td>N/A</td>
<td>45&lt;sup&gt;d&lt;/sup&gt;</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Explosives

| Division 1.1 | H-1 | 1<sup>c, g</sup> | 1<sup>c, g</sup> | (1)<sup>c, g</sup> | N/A | 0.25<sup>g</sup> | (0.25)<sup>g</sup> | N/A | 0.25<sup>g</sup> | (0.25)<sup>g</sup> |
| Division 1.2 | H-1 | 1<sup>c, g</sup> | 1<sup>c, g</sup> | (1)<sup>c, g</sup> | N/A | 0.25<sup>g</sup> | (0.25)<sup>g</sup> | N/A | 0.25<sup>g</sup> | (0.25)<sup>g</sup> |
| Division 1.3 | H-1 or H-2 | 1<sup>c, g</sup> | 1<sup>c, g</sup> | (1)<sup>c, g</sup> | N/A | 0.25<sup>g</sup> | (0.25)<sup>g</sup> | N/A | 0.25<sup>g</sup> | (0.25)<sup>g</sup> |
| Division 1.4 | H-3 | 50<sup>e, g</sup> | 50<sup>e, g</sup> | (50)<sup>e, g</sup> | N/A | 50<sup>e, g</sup> | (50)<sup>e, g</sup> | N/A | 50<sup>e, g</sup> | (50)<sup>e, g</sup> |
| Division 1.4G | H-3 | 125<sup>d, e, l</sup> | N/A | N/A | N/A | 25<sup>d, e</sup> | N/A | N/A | N/A |
| Division 1.5 | H-1 | 1<sup>c, g</sup> | (1)<sup>c, g</sup> | N/A | 0.25<sup>d</sup> | (0.25)<sup>d</sup> | N/A | 0.25<sup>d</sup> | (0.25)<sup>d</sup> |
| Division 1.6 | H-1 | 1<sup>d, e, g</sup> | N/A | N/A | N/A | 1<sup>d, e, g</sup> | N/A | N/A | N/A |

Flammable gas

| Gaseous Liquefied | H-2 | N/A | N/A | 1,000<sup>d, e</sup> | N/A | N/A | N/A | 1,000<sup>d, e</sup> | N/A |

<sup>a</sup> Results are rounded to the nearest 0.1 percent.
<sup>b</sup> Results are rounded to the nearest cubic foot.
<sup>c</sup> Results are rounded to the nearest cubic foot.
<sup>d</sup> Results are rounded to the nearest whole number.
<sup>e</sup> Results are rounded to the nearest whole number.
<sup>f</sup> Results are rounded to the nearest cubic foot.
<sup>g</sup> Results are rounded to the nearest whole number.
<table>
<thead>
<tr>
<th>Flammable liquid&lt;sup&gt;c&lt;/sup&gt;</th>
<th>1A</th>
<th>1B and 1C</th>
<th>H-2 or H-3</th>
<th>N/A</th>
<th>30&lt;sup&gt;d,e&lt;/sup&gt;</th>
<th>120&lt;sup&gt;d,e&lt;/sup&gt;</th>
<th>N/A</th>
<th>N/A</th>
<th>30&lt;sup&gt;d&lt;/sup&gt;</th>
<th>120&lt;sup&gt;d&lt;/sup&gt;</th>
<th>N/A</th>
<th>N/A</th>
<th>10&lt;sup&gt;d&lt;/sup&gt;</th>
<th>30&lt;sup&gt;d&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammable liquid, combination (1A, 1B, 1C)</td>
<td>N/A</td>
<td>H-2 or H-3</td>
<td>N/A</td>
<td>120&lt;sup&gt;d,e,h&lt;/sup&gt;</td>
<td>N/A</td>
<td>N/A</td>
<td>120&lt;sup&gt;d,h&lt;/sup&gt;</td>
<td>N/A</td>
<td>N/A</td>
<td>30&lt;sup&gt;d,h&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flammable solid</td>
<td>N/A</td>
<td>H-3</td>
<td>125&lt;sup&gt;d,e&lt;/sup&gt;</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
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<td></td>
</tr>
<tr>
<td>Inert gas</td>
<td>Gaseous</td>
<td>Gaseous</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Organic peroxide</td>
<td>UD</td>
<td>H-1</td>
<td>1&lt;sup&gt;g&lt;/sup&gt;</td>
<td>(1)</td>
<td>N/A</td>
<td>N/A</td>
<td>0.25&lt;sup&gt;g&lt;/sup&gt;</td>
<td>(0.25)&lt;sup&gt;g&lt;/sup&gt;</td>
<td>N/A</td>
<td>0.25&lt;sup&gt;g&lt;/sup&gt;</td>
<td>(0.25)&lt;sup&gt;g&lt;/sup&gt;</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td></td>
<td>I</td>
<td>H-2</td>
<td>5&lt;sup&gt;g&lt;/sup&gt;</td>
<td>(5)</td>
<td>N/A</td>
<td>N/A</td>
<td>1&lt;sup&gt;d&lt;/sup&gt;</td>
<td>(1)</td>
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<td></td>
<td>II</td>
<td>H-3</td>
<td>125&lt;sup&gt;d&lt;/sup&gt;</td>
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<td>N/A</td>
<td>125&lt;sup&gt;d&lt;/sup&gt;</td>
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<td>N/A</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td></td>
<td>IV</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
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<td></td>
</tr>
<tr>
<td>Oxidizer</td>
<td>4</td>
<td>H-1</td>
<td>1&lt;sup&gt;g&lt;/sup&gt;</td>
<td>(1)</td>
<td>N/A</td>
<td>N/A</td>
<td>0.25&lt;sup&gt;a&lt;/sup&gt;</td>
<td>(0.25)&lt;sup&gt;a&lt;/sup&gt;</td>
<td>N/A</td>
<td>0.25&lt;sup&gt;a&lt;/sup&gt;</td>
<td>(0.25)&lt;sup&gt;a&lt;/sup&gt;</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>H-2 or H-3</td>
<td>10&lt;sup&gt;a&lt;/sup&gt;</td>
<td>(10)</td>
<td>N/A</td>
<td>N/A</td>
<td>2&lt;sup&gt;d&lt;/sup&gt;</td>
<td>(2)&lt;sup&gt;d&lt;/sup&gt;</td>
<td>N/A</td>
<td>2&lt;sup&gt;d&lt;/sup&gt;</td>
<td>(2)&lt;sup&gt;d&lt;/sup&gt;</td>
<td>N/A</td>
<td>N/A</td>
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<tr>
<td></td>
<td>2</td>
<td>H-3</td>
<td>250&lt;sup&gt;d&lt;/sup&gt;</td>
<td>(250)</td>
<td>N/A</td>
<td>N/A</td>
<td>250&lt;sup&gt;d&lt;/sup&gt;</td>
<td>(250)&lt;sup&gt;d&lt;/sup&gt;</td>
<td>N/A</td>
<td>250&lt;sup&gt;d&lt;/sup&gt;</td>
<td>(250)&lt;sup&gt;d&lt;/sup&gt;</td>
<td>N/A</td>
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<td></td>
<td>1</td>
<td>N/A</td>
<td>4,000&lt;sup&gt;e,f&lt;/sup&gt;</td>
<td>(4,000)&lt;sup&gt;e,f&lt;/sup&gt;</td>
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<td>N/A</td>
<td>4,000&lt;sup&gt;e,f&lt;/sup&gt;</td>
<td>(4,000)&lt;sup&gt;e,f&lt;/sup&gt;</td>
<td>N/A</td>
<td>4,000&lt;sup&gt;e,f&lt;/sup&gt;</td>
<td>(4,000)&lt;sup&gt;e,f&lt;/sup&gt;</td>
<td>N/A</td>
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<td></td>
</tr>
<tr>
<td>Oxidizing gas</td>
<td>Gaseous</td>
<td>H-3</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>(150)&lt;sup&gt;e&lt;/sup&gt;</td>
<td>1,500&lt;sup&gt;d,e&lt;/sup&gt;</td>
<td>N/A</td>
<td>N/A</td>
<td>(150)&lt;sup&gt;d,e&lt;/sup&gt;</td>
<td>1,500&lt;sup&gt;d,e&lt;/sup&gt;</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Pyrophoric material</td>
<td>N/A</td>
<td>H-2</td>
<td>4&lt;sup&gt;g&lt;/sup&gt;</td>
<td>(4)</td>
<td>N/A</td>
<td>N/A</td>
<td>50&lt;sup&gt;e,g&lt;/sup&gt;</td>
<td>(50)&lt;sup&gt;e,g&lt;/sup&gt;</td>
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<td>(50)&lt;sup&gt;e,g&lt;/sup&gt;</td>
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<td></td>
</tr>
<tr>
<td>Unstable (reactive)</td>
<td>4</td>
<td>H-1</td>
<td>1&lt;sup&gt;g&lt;/sup&gt;</td>
<td>(1)</td>
<td>N/A</td>
<td>N/A</td>
<td>10&lt;sup&gt;d&lt;/sup&gt;</td>
<td>(10)&lt;sup&gt;d&lt;/sup&gt;</td>
<td>N/A</td>
<td>10&lt;sup&gt;d&lt;/sup&gt;</td>
<td>(10)&lt;sup&gt;d&lt;/sup&gt;</td>
<td>N/A</td>
<td>N/A</td>
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<tr>
<td></td>
<td>3</td>
<td>H-1 or H-2</td>
<td>5&lt;sup&gt;g&lt;/sup&gt;</td>
<td>(5)</td>
<td>N/A</td>
<td>N/A</td>
<td>50&lt;sup&gt;d&lt;/sup&gt;</td>
<td>(50)&lt;sup&gt;d&lt;/sup&gt;</td>
<td>N/A</td>
<td>50&lt;sup&gt;d&lt;/sup&gt;</td>
<td>(50)&lt;sup&gt;d&lt;/sup&gt;</td>
<td>N/A</td>
<td>N/A</td>
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<td></td>
<td>2</td>
<td>H-3</td>
<td>250&lt;sup&gt;d&lt;/sup&gt;</td>
<td>(250)</td>
<td>N/A</td>
<td>N/A</td>
<td>250&lt;sup&gt;d&lt;/sup&gt;</td>
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<tr>
<td>Water reactive</td>
<td>3</td>
<td>H-2</td>
<td>5&lt;sup&gt;d&lt;/sup&gt;</td>
<td>(5)</td>
<td>N/A</td>
<td>N/A</td>
<td>5&lt;sup&gt;d&lt;/sup&gt;</td>
<td>(5)&lt;sup&gt;d&lt;/sup&gt;</td>
<td>N/A</td>
<td>5&lt;sup&gt;d&lt;/sup&gt;</td>
<td>(5)&lt;sup&gt;d&lt;/sup&gt;</td>
<td>N/A</td>
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<td>2</td>
<td>H-3</td>
<td>50&lt;sup&gt;d&lt;/sup&gt;</td>
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</tbody>
</table>

For SI: 1 cubic foot = 0.028 m<sup>3</sup>, 1 pound = 0.454 kg, 1 gallon = 3.785 L. NL = Not Limited; N/A = Not Applicable; UD = Unclassified Detonable
a. For use of control areas, see Section 414.2.
b. The aggregate quantity in use and storage shall not exceed the quantity listed for storage.
c. The quantities of alcoholic beverages in retail and wholesale sales occupancies shall not be limited providing the liquids are packaged in individual containers not exceeding 1.3 gallons. In retail and wholesale sales occupancies, the quantities of medicines, foodstuffs, consumer or industrial products, and cosmetics containing not more than 50 percent by volume of water-miscible liquids with the remainder of the solutions not being flammable, shall not be limited, provided that such materials are packaged in individual containers not exceeding 1.3 gallons.
d. Maximum allowable quantities shall be increased 100 percent in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.1.1. Where Note e also applies, the increase for both notes shall be applied accumulatively.
e. Maximum allowable quantities shall be increased 100 percent when stored in approved storage cabinets, day boxes, gas cabinets or exhausted enclosures or in listed safety cans in accordance with Section 2703.9.10 of the fire code. Where Note d also applies, the increase for both notes shall be applied accumulatively.
f. The permitted quantities shall not be limited in a building equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.
g. Permitted only in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.

h. Containing not more than the maximum allowable quantity per control area of Class IA, IB or IC flammable liquids.

i. The maximum allowable quantity shall not apply to fuel oil storage complying with Section 603.3.2 of the fire code.

j. Quantities in parenthesis indicate quantity units in parenthesis at the head of each column.

k. A maximum quantity of 200 pounds of solid or 20 gallons of liquid Class 3 oxidizers is allowed when such materials are necessary for maintenance purposes, operation or sanitation of equipment. Storage containers and the manner of storage shall be approved.

l. Net weight of the pyrotechnic composition of the fireworks. Where the net weight of the pyrotechnic composition of the fireworks is not known, 25 percent of the gross weight of the fireworks, including packaging, shall be used.

m. For gallons of liquids, divide the amount in pounds by 10 in accordance with Section 2703.1.2 of the fire code.

n. For storage and display quantities in Group M and storage quantities in Group S occupancies complying with Section 414.2.5, see Tables 414.2.5(1) and 414.2.5(2).

o. Densely packed baled cotton that complies with the packing requirements of ISO 8115 shall not be included in this material class.

p. The following shall not be included in determining the maximum allowable quantities:
   1. Liquid or gaseous fuel in fuel tanks on vehicles.
   2. Liquid or gaseous fuel in fuel tanks on motorized equipment operated in accordance with this code.
   3. Gaseous fuels in piping systems and fixed appliances regulated by the fuel gas code.
   4. Liquid fuels in piping systems and fixed appliances regulated by the mechanical code.

**TABLE 307.1(2)**

**MAXIMUM ALLOWABLE QUANTITY PER CONTROL AREA OF HAZARDOUS MATERIAL POSING A HEALTH HAZARD**

<table>
<thead>
<tr>
<th>MATERIAL</th>
<th><strong>STORAGE</strong></th>
<th><strong>USE-CLOSED SYSTEMS</strong></th>
<th><strong>USE-OPEN SYSTEMS</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Solid pounds (cubic feet)</td>
<td>Liquid gallons (pounds)&lt;sup&gt;c, f&lt;/sup&gt;</td>
<td>Gas (cubic feet at NTP)&lt;sup&gt;e&lt;/sup&gt;</td>
</tr>
<tr>
<td>Corrosive</td>
<td>5,000</td>
<td>500</td>
<td>Gaseous 810&lt;sup&gt;f&lt;/sup&gt; Liquefied (150)&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>Highly toxic</td>
<td>10</td>
<td>(10)&lt;sup&gt;h&lt;/sup&gt;</td>
<td>Gaseous 20&lt;sup&gt;g&lt;/sup&gt; Liquefied (4)&lt;sup&gt;b, h&lt;/sup&gt;</td>
</tr>
<tr>
<td>Toxic</td>
<td>500</td>
<td>(500)&lt;sup&gt;b&lt;/sup&gt;</td>
<td>Gaseous 810&lt;sup&gt;f&lt;/sup&gt; Liquefied (150)&lt;sup&gt;b, h&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

For SI: 1 cubic foot = 0.028 m<sup>3</sup>, 1 pound = 0.454 kg, 1 gallon = 3.785 L.

a. For use of control areas, see Section 414.2.

b. In retail and wholesale sales occupancies, the quantities of medicines, foodstuffs, consumer or industrial products, and cosmetics, containing not more than 50 percent by volume of water-miscible liquids and...
with the remainder of the solutions not being flammable, shall not be limited, provided that such materials are packaged in individual containers not exceeding 1.3 gallons.
c. For storage and display quantities in Group M and storage quantities in Group S occupancies complying with Section 414.2.5, see Tables 414.2.5(1) and 414.2.5(2).
d. The aggregate quantity in use and storage shall not exceed the quantity listed for storage.
e. Maximum allowable quantities shall be increased 100 percent in buildings equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1. Where Note f also applies, the increase for both notes shall be applied accumulatively.
f. Maximum allowable quantities shall be increased 100 percent when stored in approved storage cabinets, gas cabinets or exhausted enclosures as specified in the fire code. Where Note e also applies, the increase for both notes shall be applied accumulatively.
g. Allowed only when stored in approved exhausted gas cabinets or exhausted enclosures as specified in the fire code.
h. Quantities in parenthesis indicate quantity units in parenthesis at the head of each column.
i. For gallons of liquids, divide the amount in pounds by 10 in accordance with Section 2703.1.2 of the fire code.

307.1.1 Hazardous materials. Hazardous materials in any quantity shall conform to the requirements of this code, including Section 414, and the fire code.

307.2 Definitions. The following words and terms shall, for the purposes of this section and as used elsewhere in this code, have the meanings shown herein.

AEROSOL. A product that is dispensed from an aerosol container by a propellant.

Aerosol products shall be classified by means of the calculation of their chemical heats of combustion and shall be designated Level 1, 2 or 3.

Level 1 aerosol products. Those with a total chemical heat of combustion that is less than or equal to 8,600 British thermal units per pound (Btu/lb) (20 kJ/g).

Level 2 aerosol products. Those with a total chemical heat of combustion that is greater than 8,600 Btu/lb (20 kJ/g), but less than or equal to 13,000 Btu/lb (30 kJ/g).

Level 3 aerosol products. Those with a total chemical heat combustion that is greater than 13,000 Btu/lb (30 kJ/g).

AEROSOL CONTAINER. A metal can or a glass or plastic bottle designed to dispense an aerosol. Metal cans shall be limited to a maximum size of 33.8 fluid ounces (1000 ml). Glass or plastic bottles shall be limited to a maximum size of 4 fluid ounces (118 ml).

BALED COTTON. A natural seed fiber wrapped in and secured with industry accepted materials, usually consisting of burlap, woven polypropylene, polyethylene or cotton or sheet polyethylene, and secured with steel, synthetic or wire bands or wire; also includes linters (lint removed from the cottonseed) and motes (residual materials from the ginning process).
BALED COTTON, DENSELY PACKED. Cotton made into banded bales with a packing density of at least 22 pounds per cubic foot (360 kg/m$^3$), and dimensions complying with the following: a length of 55 inches (1397 ± 20 mm), a width of 21 inches (533.4 ± 20 mm) and a height of 27.6 to 35.4 inches (701 to 899 mm).

BARRICADE. A structure that consists of a combination of walls, floor and roof, which is designed to withstand the rapid release of energy in an explosion and which is fully confined, partially vented or fully vented; or other effective method of shielding from explosive materials by a natural or artificial barrier.

  Artificial barricade. An artificial mound or revetment a minimum thickness of 3 feet (914 mm).

  Natural barricade. Natural features of the ground, such as hills, or timber of sufficient density that the surrounding exposures that require protection cannot be seen from the magazine or building containing explosives when the trees are bare of leaves.

BOILING POINT. The temperature at which the vapor pressure of a liquid equals the atmospheric pressure of 14.7 pounds per square inch (psi) (101 kPa) gage or 760 mm of mercury. Where an accurate boiling point is unavailable for the material in question, or for mixtures which do not have a constant boiling point, for the purposes of this classification, the 20-percent evaporated point of a distillation performed in accordance with ASTM D 86 shall be used as the boiling point of the liquid.

CLOSED SYSTEM. The use of a solid or liquid hazardous material involving a closed vessel or system that remains closed during normal operations where vapors emitted by the product are not liberated outside of the vessel or system and the product is not exposed to the atmosphere during normal operations; and all uses of compressed gases. Examples of closed systems for solids and liquids include product conveyed through a piping system into a closed vessel, system or piece of equipment.

COMBUSTIBLE DUST. Finely divided solid material that is 420 microns or less in diameter and which, when dispersed in air in the proper proportions, could be ignited by a flame, spark or other source of ignition. Combustible dust will pass through a U.S. No. 40 standard sieve.

COMBUSTIBLE FIBERS. Readily ignitable and free-burning materials in a fibrous or shredded form, such as cocoa fiber, cloth, cotton, excelsior, hay, hemp,
henequen, istle, jute, kapok, oakum, rags, sisal, Spanish moss, straw, tow, wastepaper, certain synthetic fibers or other like materials. This definition does not include densely packed baled cotton.

**COMBUSTIBLE LIQUID.** A liquid having a closed cup flash point at or above 100°F (38°C). Combustible liquids shall be subdivided as follows:

- **Class II.** Liquids having a closed cup flash point at or above 100°F (38°C) and below 140°F (60°C).
- **Class IIIA.** Liquids having a closed cup flash point at or above 140°F (60°C) and below 200°F (93°C).
- **Class IIIB.** Liquids having a closed cup flash point at or above 200°F (93°C).

The category of combustible liquids does not include compressed gases or cryogenic fluids.

**COMPRESSED GAS.** A material, or mixture of materials, that:

1. Is a gas at 68°F (20°C) or less at 14.7 pounds per square inch atmosphere (psia) (101 kPa) of pressure; and
2. Has a boiling point of 68°F (20°C) or less at 14.7 psia (101 kPa) which is either liquefied, nonliquefied or in solution, except those gases which have no other health-or physical-hazard properties are not considered to be compressed until the pressure in the packaging exceeds 41 psia (282 kPa) at 68°F (20°C).

The states of a compressed gas are categorized as follows:

1. Nonliquefied compressed gases are gases, other than those in solution, which 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, are partially liquid at a temperature of 68°F (20°C).
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.

**CONTROL AREA.** Spaces within a building where quantities of hazardous materials not exceeding the maximum allowable quantities per control area are
stored, dispensed, used or handled. See also the definition of “Outdoor control area” in the fire code.

CORROSIVE. A chemical that causes visible destruction of, or irreversible alterations in, living tissue by chemical action at the point of contact. A chemical shall be considered corrosive if, when tested on the intact skin of albino rabbits by the method described in DOTn 49 CFR, Part 173.137, such a chemical destroys or changes irreversibly the structure of the tissue at the point of contact following an exposure period of 4 hours. This term does not refer to action on inanimate surfaces.

CRYOGENIC FLUID. A liquid having a boiling point lower than -150°F (-101°C) at 14.7 pounds per square inch atmosphere (psia) (an absolute pressure of 101 kPa).

DAY BOX. A portable magazine designed to hold explosive materials constructed in accordance with the requirements for a Type 3 magazine as defined and classified in Chapter 33 of the fire code.

DEFLAGRATION. An exothermic reaction, such as the extremely rapid oxidation of a flammable dust or vapor in air, in which the reaction progresses through the unburned material at a rate less than the velocity of sound. A deflagration can have an explosive effect.

DETONATION. An exothermic reaction characterized by the presence of a shock wave in the material which establishes and maintains the reaction. The reaction zone progresses through the material at a rate greater than the velocity of sound. The principal heating mechanism is one of shock compression. Detonations have an explosive effect.

DISPENSING. The pouring or transferring of any material from a container, tank or similar vessel, whereby vapors, dusts, fumes, mists or gases are liberated to the atmosphere.

EXPLOSION. An effect produced by the sudden violent expansion of gases, which may be accompanied by a shock wave or disruption, or both, of enclosing materials or structures. An explosion could result from any of the following:

1 Chemical changes such as rapid oxidation, deflagration or detonation, decomposition of molecules and runaway polymerization (usually detonations).
2 Physical changes such as pressure tank ruptures.
3 Atomic changes (nuclear fission or fusion).

EXPLOSIVE. A chemical compound, mixture or device, the primary or common purpose of which is to function by explosion. The term 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 USC Title 18: 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 DOTn 49 CFR Parts 100-185.

**High explosive.** Explosive material, such as dynamite, which can be caused to detonate by means of a No. 8 test blasting cap when unconfined.

**Low explosive.** Explosive material that will burn or deflagrate when ignited. It is characterized by a rate of reaction that is less than the speed of sound. Examples of low explosives include, but are not limited to, black powder; safety fuse; igniters; igniter cord; fuse lighters; fireworks, 1.3G (Class B, Special) and propellants, 1.3C.

**Mass-detonating explosives.** Division 1.1, 1.2 and 1.5 explosives alone or in combination, or loaded into various types of ammunition or containers, most of which can be expected to explode virtually instantaneously when a small portion is subjected to fire, severe concussion, impact, the impulse of an initiating agent or the effect of a considerable discharge of energy from without. Materials that react in this manner represent a mass explosion hazard. Such an explosive will normally cause severe structural damage to adjacent objects. Explosive propagation could occur immediately to other items of ammunition and explosives stored sufficiently close to and not adequately protected from the initially exploding pile with a time interval short enough so that two or more quantities must be considered as one for quantity-distance purposes.

**UN/DOTn Class 1 explosives.** The former classification system used by DOTn included the terms “high” and “low” explosives as defined herein. The following terms further define explosives under the current system applied by DOTn for all explosive materials defined as hazard Class 1 materials. Compatibility group letters are used in concert with the division to specify further limitations on each division noted (i.e., the letter G identifies the material as a pyrotechnic substance or article containing a pyrotechnic substance and similar materials).

**Division 1.1.** Explosives that have a mass explosion hazard. A mass explosion is one which affects almost the entire load instantaneously.

**Division 1.2.** Explosives that have a projection hazard but not a mass explosion hazard.
**Division 1.3.** Explosives that have a fire hazard and either a minor blast hazard or a minor projection hazard or both, but not a mass explosion hazard.

**Division 1.4.** Explosives that pose a minor explosion hazard. The explosive effects are largely confined to the package and no projection of fragments of appreciable size or range is to be expected. An external fire must not cause virtually instantaneous explosion of almost the entire contents of the package.

**Division 1.5.** Very insensitive explosives. This division is comprised of substances that have a mass explosion hazard, but that are so insensitive there is very little probability of initiation or of transition from burning to detonation under normal conditions of transport.

**Division 1.6.** Extremely insensitive articles which do not have a mass explosion hazard. This division is comprised of articles that contain only extremely insensitive detonating substances and which demonstrate a negligible probability of accidental initiation or propagation.

**FIREWORKS.** Any composition or device for the purpose of producing a visible or audible effect for entertainment purposes by combustion, deflagration or detonation that meets the definition of 1.4G fireworks or 1.3G fireworks as set forth herein.

**Fireworks, 1.3G.** (Formerly Class B, Special Fireworks.) Large fireworks devices, which are explosive materials, intended for use in fireworks displays and designed to produce audible or visible effects by combustion, deflagration or detonation. Such 1.3G fireworks include, but are not limited to, firecrackers containing more than 130 milligrams (2 grains) of explosive composition, aerial shells containing more than 40 grams of pyrotechnic composition, and other display pieces which exceed the limits for classification as 1.4G fireworks. Such 1.3G fireworks are also described as fireworks, UN0335 by the DOTn.

**Fireworks, 1.4G.** (Formerly Class C, Common Fireworks.) Small fireworks devices containing restricted amounts of pyrotechnic composition designed primarily to produce visible or audible effects by combustion. Such 1.4G fireworks which comply with the construction, chemical composition and labeling regulations of the DOTn for fireworks, UN0336, and the U.S. Consumer Product Safety Commission (CPSC) as set forth in CPSC 16 CFR: Parts 1500 and 1507, are not explosive materials for the purpose of this code.

**FLAMMABLE GAS.** A material that is a gas at 68°F (20°C) or less at 14.7
pounds per square inch atmosphere (psia) (101 kPa) of pressure [a material that has a boiling point of 68°F (20°C) or less at 14.7 psia (101 kPa)] which:

1. Is ignitable at 14.7 psia (101 kPa) when in a mixture of 13 percent or less by volume with air; or
2. Has a flammable range at 14.7 psia (101 kPa) with air of at least 12 percent, regardless of the lower limit.

The limits specified shall be determined at 14.7 psi (101 kPa) of pressure and a temperature of 68°F (20°C) in accordance with ASTM E 681.

**FLAMMABLE LIQUEFIED GAS.** A liquefied compressed gas which, under a charged pressure, is partially liquid at a temperature of 68°F (20°C) and which is flammable.

**FLAMMABLE LIQUID.** A liquid having a closed cup flash point below 100°F (38°C). Flammable liquids are further categorized into a group known as Class I liquids. The Class I category is subdivided as follows:

- **Class IA.** Liquids having a flash point below 73°F (23°C) and a boiling point below 100°F (38°C).
- **Class IB.** Liquids having a flash point below 73°F (23°C) and a boiling point at or above 100°F (38°C).
- **Class IC.** Liquids having a flash point at or above 73°F (23°C) and below 100°F (38°C).

The category of flammable liquids does not include compressed gases or cryogenic fluids.

**FLAMMABLE MATERIAL.** A material capable of being readily ignited from common sources of heat or at a temperature of 600°F (316°C) or less.

**FLAMMABLE SOLID.** A solid, other than a blasting agent or explosive, that is capable of causing fire through friction, absorption or moisture, spontaneous chemical change, or retained heat from manufacturing or processing, or which has an ignition temperature below 212°F (100°C) or which burns so vigorously and persistently when ignited as to create a serious hazard. A chemical shall be considered a flammable solid as determined in accordance with the test method of CPSC 16 CFR; Part 1500.44, if it ignites and burns with a self-sustained flame at a rate greater than 0.1 inch (2.5 mm) per second along its major axis.

**FLASH POINT.** The minimum temperature in degrees Fahrenheit at which a liquid will give off sufficient vapors to form an ignitable mixture with air near the surface or in the container, but will not sustain combustion. The flash point of a liquid shall be determined by appropriate test procedure and apparatus as spec-
ified in ASTM D 56, ASTM D 93 or ASTM D 3278.

HANDLING. The deliberate transport by any means to a point of storage or use.

HAZARDOUS MATERIALS. Those chemicals or substances that are physical hazards or health hazards as defined and classified in this section and the fire code, whether the materials are in usable or waste condition.

HEALTH HAZARD. A classification of a chemical for which there is statistically significant evidence that acute or chronic health effects are capable of occurring in exposed persons. The term “health hazard” includes chemicals that are toxic or highly toxic, and corrosive.

HIGHLY TOXIC. A material which produces a lethal dose or lethal concentration that falls within any of the following categories:

1. A chemical that has a median lethal dose (LD_{50}) of 50 milligrams or less per kilogram of body weight when administered orally to albino rats weighing between 200 and 300 grams each.

2. A chemical that has a median lethal dose (LD_{50}) of 200 milligrams or less per kilogram of body weight when administered by continuous contact for 24 hours (or less if death occurs within 24 hours) with the bare skin of albino rabbits weighing between 2 and 3 kilograms each.

3. A chemical that has a median lethal concentration (LC_{50}) in air of 200 parts per million by volume or less of gas or vapor, or 2 milligrams per liter or less of mist, fume or dust, when administered by continuous inhalation for 1 hour (or less if death occurs within 1 hour) to albino rats weighing between 200 and 300 grams each.

Mixtures of these materials with ordinary materials, such as water, might not warrant classification as highly toxic. While this system is basically simple in application, any hazard evaluation that is required for the precise categorization of this type of material shall be performed by experienced, technically competent persons.

INCOMPATIBLE MATERIALS. Materials that, when mixed, have the potential to react in a manner that generates heat, fumes, gases or byproducts which are hazardous to life or property.

INERT GAS. A gas that is capable of reacting with other materials only under abnormal conditions such as high temperatures, pressures and similar extrinsic physical forces. Within the context of the code, inert gases do not exhibit either physical or health properties as defined (other than acting as a simple asphyxiant).
or hazard properties other than those of a compressed gas. Some of the more common inert gases include argon, helium, krypton, neon, nitrogen and xenon.

**OPEN SYSTEM.** The use of a solid or liquid hazardous material involving a vessel or system that is continuously open to the atmosphere during normal operations and where vapors are liberated, or the product is exposed to the atmosphere during normal operations. Examples of open systems for solids and liquids include dispensing from or into open beakers or containers, dip tank and plating tank operations.

**OPERATING BUILDING.** A building occupied in conjunction with the manufacture, transportation or use of explosive materials. Operating buildings are separated from one another with the use of intraplant or intraline distances.

**ORGANIC PEROXIDE.** An organic compound that contains the bivalent -O-O- structure and which may be considered to be a structural derivative of hydrogen peroxide where one or both of the hydrogen atoms have been replaced by an organic radical. Organic peroxides can pose an explosion hazard (detonation or deflagration) or they can be shock sensitive. They can also decompose into various unstable compounds over an extended period of time.

- **Class I.** Those formulations that are capable of deflagration but not detonation.
- **Class II.** Those formulations that burn very rapidly and that pose a moderate reactivity hazard.
- **Class III.** Those formulations that burn rapidly and that pose a moderate reactivity hazard.
- **Class IV.** Those formulations that burn in the same manner as ordinary combustibles and that pose a minimal reactivity hazard.
- **Class V.** Those formulations that burn with less intensity than ordinary combustibles or do not sustain combustion and that pose no reactivity hazard.
- **Unclassified detonable.** Organic peroxides that are capable of detonation. These peroxides pose an extremely high explosion hazard through rapid explosive decomposition.

**OXIDIZER.** A material that readily yields oxygen or other oxidizing gas, or that readily reacts to promote or initiate combustion of combustible materials and, if heated or contaminated, can result in vigorous self-sustained decomposition.

- **Class 4.** An oxidizer that can undergo an explosive reaction due to contamination or exposure to thermal or physical shock and that causes a severe increase in the burning rate of combustible materials with which it comes into contact. Additionally, the oxidizer causes a severe increase in the
burning rate and can cause spontaneous ignition of combustibles.

**Class 3.** An oxidizer that causes a severe increase in the burning rate of combustible materials with which it comes in contact.

**Class 2.** An oxidizer that will cause a moderate increase in the burning rate of combustible materials with which it comes in contact.

**Class 1.** An oxidizer that does not moderately increase the burning rate of combustible materials.

**OXIDIZING GAS.** A gas that can support and accelerate combustion of other materials.

**PHYSICAL HAZARD.** A chemical for which there is evidence that it is a combustible liquid, cryogenic fluid, explosive, flammable (solid, liquid or gas), organic peroxide (solid or liquid), oxidizer (solid or liquid), oxidizing gas, pyrophoric (solid, liquid or gas), unstable (reactive) material (solid, liquid or gas) or water-reactive material (solid or liquid).

**PYROPHORIC.** A chemical with an autoignition temperature in air, at or below a temperature of 130°F (54.4°C).

**PYROTECHNIC COMPOSITION.** A chemical mixture that produces visible light displays or sounds through a self-propagating, heat-releasing chemical reaction which is initiated by ignition.

**TOXIC.** A chemical falling within any of the following categories:

1. A chemical that has a median lethal dose (LD₅₀) of more than 50 milligrams per kilogram, but not more than 500 milligrams per kilogram of body weight when administered orally to albino rats weighing between 200 and 300 grams each.

2. A chemical that has a median lethal dose (LD₅₀) of more than 200 milligrams per kilogram, but not more than 1,000 milligrams per kilogram of body weight when administered by continuous contact for 24 hours (or less if death occurs within 24 hours) with the bare skin of albino rabbits weighing between 2 and 3 kilograms each.

3. A chemical that has a median lethal concentration (LC₅₀) in air of more than 200 parts per million, but not more than 2,000 parts per million by volume of gas or vapor, or more than 2 milligrams per liter but not more than 20 milligrams per liter of mist, fume or dust, when administered by continuous inhalation for 1 hour (or less if death occurs within 1 hour) to albino rats weighing between 200 and 300 grams each.

**UNSTABLE (REACTIVE) MATERIAL.** A material, other than an explosive, which in the pure state or as commercially produced, will vigorously polymerize,
decompose, condense or become self-reactive and undergo other violent chemical changes, including explosion, when exposed to heat, friction or shock, or in the absence of an inhibitor, or in the presence of contaminants, or in contact with incompatible materials. Unstable (reactive) materials are subdivided as follows:

**Class 4.** Materials that in themselves are readily capable of detonation or explosive decomposition or explosive reaction at normal temperatures and pressures. This class includes materials that are sensitive to mechanical or localized thermal shock at normal temperatures and pressures.

**Class 3.** Materials that in themselves are capable of detonation or of explosive decomposition or explosive reaction but which require a strong initiating source or which must be heated under confinement before initiation. This class includes materials that are sensitive to thermal or mechanical shock at elevated temperatures and pressures.

**Class 2.** Materials that in themselves are normally unstable and readily undergo violent chemical change but do not detonate. This class includes materials that can undergo chemical change with rapid release of energy at normal temperatures and pressures, and that can undergo violent chemical change at elevated temperatures and pressures.

**Class 1.** Materials that in themselves are normally stable but which can become unstable at elevated temperatures and pressure.

**WATER-REACTIVE MATERIAL.** A material that explodes; violently reacts; produces flammable, *toxic* or other hazardous gases; or evolves enough heat to cause autoignition or ignition of combustibles upon exposure to water or moisture. Water-reactive materials are subdivided as follows:

**Class 3.** Materials that react explosively with water without requiring heat or confinement.

**Class 2.** Materials that react violently with water or have the ability to boil water. Materials that produce flammable, toxic or other hazardous gases or evolve enough heat to cause autoignition or ignition of combustibles upon exposure to water or moisture.

**Class 1.** Materials that react with water with some release of energy, but not violently.

**307.3 High-hazard Group H-1.** Buildings and structures containing materials that pose a detonation hazard shall be classified as Group H-1. Such materials shall include, but not be limited to, the following:

Detonable pyrophoric materials

Explosives:
Division 1.1
Division 1.2
Division 1.3

Exception: Materials that are used and maintained in a form where either confinement or configuration will not elevate the hazard from a mass fire to mass explosion hazard shall be allowed in H-2 occupancies.

Division 1.4

Exception: Articles, including articles packaged for shipment, that are not regulated as an explosive under Bureau of Alcohol, Tobacco and Firearms regulations, or unpackaged articles used in process operations that do not propagate a detonation or deflagration between articles shall be allowed in H-3 occupancies.

Division 1.5
Division 1.6

Organic peroxides, unclassified detonable
Oxidizers, Class 4
Unstable (reactive) materials, Class 3 detonable and Class 4

307.4 High-hazard Group H-2. Buildings and structures containing materials that pose a deflagration hazard or a hazard from accelerated burning shall be classified as Group H-2. Such materials shall include, but not be limited to, the following:

Class I, II or IIIA flammable or combustible liquids which are used or stored in normally open containers or systems, or in closed containers or systems pressurized at more than 15 psi (103.4 kPa) gage.

Combustible dusts
Cryogenic fluids, flammable
Flammable gases
Organic peroxides, Class I
Oxidizers, Class 3, that are used or stored in normally open containers or systems, or in closed containers or systems pressurized at more than 15 psi (103 kPa) gage
Pyrophoric liquids, solids and gases, nondetonable
Unstable (reactive) materials, Class 3, nondetonable
Water-reactive materials, Class 3

307.5 High-hazard Group H-3. Buildings and structures containing materials that readily support combustion or that pose a physical hazard shall be classified
as Group H-3. Such materials shall include, but not be limited to, the following:

Class I, II or IIIA flammable or combustible liquids that are used or stored in
normally closed containers or systems pressurized at 15 pounds per square
inch gauge (103.4 kPa) or less
Combustible fibers, other than densely
packed baled cotton
Consumer fireworks, 1.4G (Class C, Common)
Cryogenic fluids, oxidizing
Flammable solids
Organic peroxides, Class II and III
Oxidizers, Class 2 Oxidizers, Class 3, that are used or stored in normally
closed containers or systems pressurized at 15 pounds per square inch
gauge (103 kPa) or less
Oxidizing gases
Unstable (reactive) materials, Class 2
Water-reactive materials, Class 2

307.6 High-hazard Group H-4. Buildings and structures which contain materials
that are health hazards shall be classified as Group H-4. Such materials shall
include, but not be limited to, the following:
Corrosives
Highly toxic materials
Toxic materials

307.7 High-hazard Group H-5 structures. Semiconductor fabrication facilities
and comparable research and development areas in which hazardous production
materials (HPM) are used and the aggregate quantity of materials is in excess of
those listed in Tables 307.1(1) and 307.1(2) shall be classified as Group H-5.
Such facilities and areas shall be designed and constructed in accordance with
Section 415.8.

307.8 Multiple hazards. Buildings and structures containing a material or
materials representing hazards that are classified in one or more of Groups H-1,
H-2, H-3 and H-4 shall conform to the code requirements for each of the
occupancies so classified.

SECTION 308
INSTITUTIONAL GROUP I

308.1 Institutional Group I. Institutional Group I occupancy includes, among
others, the use of a building or structure, or a portion thereof, in which people are
cared for or live in a supervised environment, having physical limitations because
of health or age are harbored for medical treatment or other care or treatment, or in which people are detained for penal or correctional purposes or in which the liberty of the occupants is restricted. Institutional occupancies shall be classified as Group I-1, I-2, I-3 or I-4.

308.2 Group I-1. This occupancy shall include buildings, structures or parts thereof housing more than 16 persons, on a 24-hour basis, who because of age, mental disability or other reasons, live in a supervised residential environment that provides personal care services. The occupants are capable of responding to an emergency situation without physical assistance from staff. This group shall include, but not be limited to, the following:

- Alcohol and drug centers
- Assisted living facilities
- Congregate care facilities
- Convalescent facilities
- Group homes
- Halfway houses
- Residential board and care facilities
- Social rehabilitation facilities

A facility such as the above with five or fewer persons shall be classified as a Group R-3 or shall comply with the Residential Code of Ohio. A facility such as above, housing at least six and not more than 16 persons, shall be classified as Group R-4.

This group shall also include residential care facilities (see section 310.2 Definitions) where more than sixteen individuals reside and supervision and personal care services are provided for three or more individuals and when no more than five need physical assistance in response to an emergency.

308.3 Group I-2. This occupancy shall include buildings and structures used for medical, surgical, psychiatric, nursing or custodial care for persons who are not capable of self-preservation. This group shall include, but not be limited to, the following:

- Child care facilities
- Detoxification facilities
- Hospitals
- Mental hospitals
- Nursing homes

This occupancy shall also include nursing homes where personal care services
and skilled nursing care are provided for three or more individuals.

This group shall also include residential care facilities (see section 310.2 Definitions) where more than sixteen individuals reside and supervision and personal care services are provided for three or more individuals when more than five are not capable of responding to an emergency without physical assistance.

308.3.1 Definitions. The following words and terms shall, for the purposes of this section and as used elsewhere in this code, have the meanings shown herein.

CHILD CARE FACILITIES. Facilities that provide care on a 24-hour basis to more than five children, 2 ½ years of age or less.

CUSTODIAL CARE. See Section 202.

DETOXIFICATION FACILITIES. Facilities that serve patients who are provided treatment for substance abuse on a 24-hour basis and who are incapable of self-preservation or who are harmful to themselves or others.

HOSPITALS AND MENTAL HOSPITALS. Buildings or portions thereof used on a 24-hour basis for the medical, psychiatric, obstetrical or surgical treatment of inpatients who are incapable of self-preservation.

NURSING HOMES. A home used for the reception and care of individuals who by reason of illness or physical or mental impairment require skilled nursing care and of individuals who require personal care services but not skilled nursing care. A nursing home is required to be licensed by the Ohio Department of Health to provide personal care services and skilled nursing care.

308.4 Group I-3. This occupancy shall include buildings and structures that are inhabited by more than five persons who are under restraint or security. An I-3 facility is occupied by persons who are generally incapable of self-preservation due to security measures not under the occupants’ control. This group shall include, but not be limited to, the following:

Correctional centers
Detention centers
Jails
Prerelease centers
Prisons
Reformatories
Buildings of Group I-3 shall be classified as one of the occupancy conditions indicated in Sections 308.4.1 through 308.4.5 (see Section 408.1).

**308.4.1 Condition 1.** This occupancy condition shall include buildings in which free movement is allowed from sleeping areas, and other spaces where access or occupancy is permitted, to the exterior via means of egress without restraint. A Condition 1 facility is permitted to be constructed as Group R.

**308.4.2 Condition 2.** This occupancy condition shall include buildings in which free movement is allowed from sleeping areas and any other occupied smoke compartment to one or more other smoke compartments. Egress to the exterior is impeded by locked exits.

**308.4.3 Condition 3.** This occupancy condition shall include buildings in which free movement is allowed within individual smoke compartments, such as within a residential unit comprised of individual sleeping units and group activity spaces, where egress is impeded by remote-controlled release of means of egress from such a smoke compartment to another smoke compartment.

**308.4.4 Condition 4.** This occupancy condition shall include buildings in which free movement is restricted from an occupied space. Remote-controlled release is provided to permit movement from sleeping units, activity spaces and other occupied areas within the smoke compartment to other smoke compartments.

**308.4.5 Condition 5.** This occupancy condition shall include buildings in which free movement is restricted from an occupied space. Staff-controlled manual release is provided to permit movement from sleeping units, activity spaces and other occupied areas within the smoke compartment to other smoke compartments.

**308.5 Group I-4, day care facilities.** This group shall include buildings and structures occupied by persons of any age who receive custodial care for less than 24 hours by individuals other than parents or guardians, relatives by blood, marriage or adoption, and in a place other than the home of the person cared for. A facility such as the above with five or fewer persons shall be classified as a Group R-3 or shall comply with the Residential Code of Ohio. Places of worship during religious functions are not included.

**308.5.1 Adult care facility.** A facility that provides accommodations for less than 24 hours for more than five unrelated adults and provides supervision and personal care services shall be classified as Group I-4.

**Exception:** A facility where occupants are capable of responding to an
emergency situation without physical assistance from the staff shall be classified as Group R-3.

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

Exception: A child day care facility that provides care for more than five but no more than 100 children 2 ½ years or less of age, where the rooms in which the children are cared for are located on a level of exit discharge serving such rooms and each of these child care rooms has an exit door directly to the exterior, shall be classified as Group E.

SECTION 309
MERCANTILE GROUP M

309.1 Mercantile Group M. Mercantile Group M occupancy includes, among others, the use of a building or structure or a portion thereof, for the display and sale of merchandise and involves stocks of goods, wares or merchandise incidental to such purposes and accessible to the public. Mercantile occupancies shall include, but not be limited to, the following:

Department stores
Drug stores
Markets
Motor fuel-dispensing facilities
Retail or wholesale stores
Sales rooms

309.2 Quantity of hazardous materials. The aggregate quantity of nonflammable solid and nonflammable or noncombustible liquid hazardous materials stored or displayed in a single control area of a Group M occupancy shall not exceed the quantities in Table 414.2.5(1).

SECTION 310
RESIDENTIAL GROUP R

310.1 Residential Group R. Residential Group R includes, among others, the use of a building or structure, or a portion thereof, for sleeping purposes when not classified as an Institutional Group I or when not a detached one-, two-, or three-
family dwelling regulated by the Residential Code of Ohio.

**Detached One-, Two-, or Three- Family Dwellings.** The “Residential Code of Ohio for One-, Two-, or Three- Family Dwellings” shall apply to structures comprised exclusively of one-, two-, or three-family dwellings (having independent exits) and their accessory structures in jurisdictions where a residential department is certified by the board. If no residential department is certified in a jurisdiction, construction documents for structures comprised exclusively of one-, two-, or three-family dwellings are not required to be submitted for approval.

Residential occupancies shall include the following:

**R-1** Residential occupancies containing sleeping units where the occupants are primarily transient in nature, including:
- Boarding houses (transient)
- Hotels (transient)
- Motels (transient)

*R-1 occupancies typically will include sleeping units but may also include dwelling units when those units are not used primarily as permanent residences.*

*SRO facilities are not an occupancy within the R-1 occupancy group but in order to qualify for Fire Marshal issued licensure, an SRO facility must be designed and constructed to meet the R-1 criteria in this code.*

Congregate living facilities (transient) with 10 or fewer occupants are permitted to comply with the construction requirements found in Chapters 4-34 of this code for Group R-3.

**R-2** Residential occupancies containing sleeping units or more than three dwelling units where the occupants are primarily permanent in nature in structures with shared exits, including:
- Apartment houses
- Boarding houses (nontransient)
- Convents
- Dormitories
- Fraternities and sororities
- Hotels (nontransient)
- Live/work units
- Monasteries
- Motels (nontransient)
SRO (Single room occupancy) facility (also see R-1)
Vacation timeshare properties
Congregate living facilities with 16 or fewer occupants are permitted to comply with the construction requirements found in Chapters 4-34 of this code for Group R-3.

Residential occupancies in buildings or structures of mixed use containing one or more dwelling units where the occupants are primarily permanent in nature in structures with shared exits.

This group includes buildings or structures containing two or three dwelling units when the units share an exit.

R-3 Residential occupancies having more than three dwelling units where the occupants are primarily permanent in nature and not classified as Group R-1, R-2, R-4 or I, and where each unit has independent exit including:

- Adult care facilities that provide accommodations for five or fewer persons of any age for less than 24 hours.
- Child care facilities that provide accommodations for five or fewer persons of any age for less than 24 hours.
- Congregate living facilities with 16 or fewer persons.

This group includes residential occupancies in buildings or structures of mixed use, three stories or less, where the occupants are primarily permanent in nature and where each dwelling unit has an independent exit.

The “Residential Code of Ohio for One-, Two-, and Three-Family Dwellings” (RCO) is permitted to be used in place of the requirements of this code for R-3 occupancies in buildings three stories or less, comprised exclusively of dwelling units where each unit has an independent exit with the following conditions:

1. No more than one dwelling unit is allowed to be located above another unit. Fire separation between units within a grouping of two units including a unit located partially or totally above another unit shall be in accordance with the RCO section 302.2. Fire separation between any grouping of two units and other adjacent units shall be in accordance with RCO sections 302.2 through 302.6.

2. Chapter 1 of the OBC shall be applicable for code administration purposes.
3. The edition of NFPA 70 listed in Chapter 35 of the OBC shall be applicable for electrical components, equipment, and system requirements.

Adult care and child care facilities that are within a single-family home are permitted to comply with the Residential Code of Ohio.

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

Group R-4 occupancies shall meet the requirements for construction as defined for Group R-3, except as otherwise provided for in this code or shall comply with the Residential Code of Ohio provided the building is protected by an automatic sprinkler system installed in accordance with Section 903.2.8.

**310.2 Definitions.** The following words and terms shall, for the purposes of this section and as used elsewhere in this code, have the meanings shown herein.

**BOARDING HOUSE.** A building arranged or used for lodging for compensation, with or without meals, and not occupied as a single-family unit.

**CONGREGATE LIVING FACILITIES.** A building or part thereof that contains sleeping units where residents share bathroom and/or kitchen facilities.

**CUSTODIAL CARE.** See Section 202.

**DWELLING.** Any building that exclusively contains one, two, or three dwelling units, each of which may be occupied by a family and no more than five lodgers or boarders, intended, or designed to be built, used, rented, leased, let or hired out to be occupied, or that is occupied for living purposes, physically separated from adjacent structures, and with an independent exit from each dwelling unit.

**DWELLING, ONE-, TWO-, OR THREE-FAMILY.** See Dwelling.

**DWELLING UNIT.** A single unit providing complete, independent living facilities for one or more persons, that includes permanent provisions for living, sleeping, eating, cooking and sanitation. The dwelling unit may include any accessory space intended for the exclusive use of the occupants of an individual dwelling unit such as a private garage, greenhouse, etc.

**DORMITORY.** A space in a building where group sleeping accommodations are provided in one room, or in a series of closely associated rooms, for persons not
members of the same family group, under joint occupancy and single management, as in college dormitories or fraternity houses.

**PERSONAL CARE SERVICE.** Assistance to residents with the activities of daily living to include assistance with the self-administration of medications and preparation of special diets as may be prescribed by physician or licensed dietitian. For purposes of this code, personal care service shall extend to assurance of physical safety of the resident.

**PRIMARILY TRANSIENT.** Use of a space for sleeping that has facilities for sanitation, with or without other spaces used for living purposes, offered or otherwise intended to be used for short periods of time but not intended to be used as a permanent residence or an institutional-use group facility where care or supervision is provided.

**RESIDENTIAL CARE/ASSISTED LIVING FACILITIES.** Any building or part thereof, regardless of by which name held out publicly, housing residents on a 24-hour basis, who, because of age, mental illness, severe mental disability, infirmity, or other reason, live in a supervised residential environment which provides personal care service as a condition of licensing, and the occupants of which are capable of responding to an emergency situation without physical assistance from staff. This classification shall include, but not be limited to, residential care facilities holding themselves out as: board and care facilities, assisted living facilities, halfway houses, adult care or mental health group homes, congregate care facilities, social rehabilitation facilities, alcohol and drug abuse centers, and convalescent facilities with a maximum of 16 persons as residents.

**SRO (Single room occupancy) FACILITY.** A facility with more than five sleeping rooms that is kept, used, maintained, advertised or held out to the public as a place where each individual is provided with separate sleeping accommodations which is intended to be the permanent residence of a single occupant. SRO facilities are required to be licensed by the Ohio Fire Marshal and do not include agricultural labor camps, apartment houses, lodging houses, rooming houses or college dormitories.

**TRANSIENT.** See **PRIMARILY TRANSIENT** above.
311.1 Storage Group S. Storage Group S occupancy includes, among others, the use of a building or structure, or a portion thereof, for storage that is not classified as a hazardous occupancy.

311.2 Moderate-hazard storage, Group S-1. Buildings occupied for storage uses that are not classified as Group S-2, including, but not limited to, storage of the following:

   - Aerosols, Levels 2 and 3
   - Aircraft hangar (storage and repair)
   - Bags: cloth, burlap and paper
   - Bamboos and rattan
   - Baskets
   - Belting: canvas and leather
   - Books and paper in rolls or packs
   - Boots and shoes
   - Buttons, including cloth covered, pearl or bone
   - Cardboard and cardboard boxes
   - Clothing, woolen wearing apparel
   - Cordage
   - Dry boat storage (indoor)
   - Furniture Furs
   - Glues, mucilage, pastes and size
   - Grains
   - Horns and combs, other than celluloid
   - Leather
   - Linoleum
   - Lumber
   - Motor vehicle repair garages complying with the maximum allowable quantities of hazardous materials listed in Table 307.1(1) (see Section 406.6)
   - Photo engravings
   - Resilient flooring
   - Silks
   - Soaps
   - Sugar
   - Tires, bulk storage of
   - Tobacco, cigars, cigarettes and snuff
   - Upholstery and mattresses
   - Wax candles

311.3 Low-hazard storage, Group S-2. Includes, among others, buildings used
for the storage of noncombustible materials such as products on wood pallets or in paper cartons with or without single thickness divisions; or in paper wrappings. Such products are permitted to have a negligible amount of plastic trim, such as knobs, handles or film wrapping. Group S-2 storage uses shall include, but not be limited to, storage of the following:

Asbestos
Beverages up to and including 16-percent alcohol in metal, glass or ceramic containers
Cement in bags
Chalk and crayons
Dairy products in nonwaxed coated paper containers
Dry cell batteries
Electrical coils
Electrical motors
Empty cans
Food products
Foods in noncombustible containers
Fresh fruits and vegetables in nonplastic trays or containers
Frozen foods
Glass
Glass bottles, empty or filled with noncombustible liquids
Gypsum board
Inert pigments
Ivory
Meats
Metal cabinets
Metal desks with plastic tops and trim
Metal parts
Metals
Mirrors
Oil-filled and other types of distribution transformers
Parking garages, open or enclosed
Porcelain and pottery
Stoves
Talc and soapstones
Washers and dryers

SECTION 312
UTILITY AND MISCELLANEOUS GROUP U
312.1 **General.** Buildings and structures of an accessory character and miscellaneous structures not classified in any specific occupancy *and not used for agricultural purposes as defined in section 3781.06 of the Revised Code*, shall be constructed, equipped and maintained to conform to the requirements of this code commensurate with the fire and life hazard incidental to their occupancy. Group U shall include, but not be limited to, the following:

- Agricultural buildings *not used for agricultural purposes as defined in section 3781.06 of the Revised Code*
- Aircraft hangars, *residential* (see Section 412.5)
- Barns
- Carports
- Fences more than 6 feet (1829 mm) high
- Grain silos, accessory to a residential occupancy
- Greenhouses
- Livestock shelters *not used for agricultural purposes as defined in section 3781.06 of the Revised Code*
- Private garages
- Retaining walls
- Sheds
- Stables
- Tanks
- Towers
Effective: 01/01/2015

Five Year Review (FYR) Dates: 11/01/2016

CERTIFIED ELECTRONICALLY

Certification

11/20/2014

Date

Promulgated Under: 119.03
Statutory Authority: 3781.10(A)
Rule Amplifies: 3781.10, 3781.11, 3791.04
Prior Effective Dates: 7/1/79, 1/1/81, 7/1/82, 3/1/85, 7/1/85, 3/1/86, 9/1/86, 1/1/89, 1/1/90, 8/1/90, 8/2/91, 9/1/92, 7/5/93, 9/1/94, 7/1/95, 3/1/98, 4/1/99, 1/1/02, 7/1/02, 8/15/03, 3/1/05, 9/6/05, 7/1/07, 1/1/09, 11/1/11, 7/1/14
4101:1-35-01 Referenced standards.

3501.1 General. This chapter lists the standards that are referenced in various sections of the building code. The standards are listed herein by the promulgating agency of the standard, the standard identification, the effective date and title. The application of the referenced standards shall be as specified in Section 102.5.

3501.2 Referenced codes. When indicated in this code, the following codes refer to provisions in the listed chapters of the administrative code:

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<td>Plumbing Code</td>
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3501.3 Building Code Referenced Standards.

Aluminum Association
1525 Wilson Boulevard, Suite 600
Arlington, VA 22209

AA Standard reference number
ADM1—10 Title
ASM 35—00  Aluminum Sheet Metal Work in Building Construction
(Fourth Edition)

American Architectural Manufacturers Association
1827 Waldon Office
Square, Suite 550
Schaumburg, IL 60173

**AAMA**
**Standard reference number**  Title
1402—09  Standard Specifications for Aluminum Siding, Soffit and Fascia

**AAMA/WDMA/CSA**

American Concrete Institute
38800 Country Club Drive
Farmington Hills, MI 48331

**ACI**
**Standard reference number**  Title
216.1—07  Standard Method for Determining Fire Resistance of Concrete and Masonry Construction Assemblies
318—08  Building Code Requirements for Structural Concrete
530—08  Building Code Requirements for Masonry Structures
530.1—08  Specifications for Masonry Structures

American Forest & Paper Association
1111 19th St, NW Suite 800
Washington, DC 20036

**AF&PA**
**Standard reference number**  Title
WCD No. 4—03 Wood Construction Data—Plank and Beam Framing for Residential
NDS—05 National Design Specification (NDS) for Wood Construction with 2005 Supplement
AF&PA—93 Span Tables for Joists and Rafters
ANSI/AF&PA PWF—07 Permanent Wood Foundation Design Specification
ANSI/AF&PA SDPWS—08 Special Design Provisions for Wind and Seismic

American Institute of Steel Construction
One East Wacker Drive, Suite 3100
Chicago, IL 60601-2001

AISC
Standard reference number Title
341—05 Seismic Provisions for Structural Steel Buildings, including Supplement No. 1 dated 2005
360—05 Specification for Structural Steel Buildings

American Iron and Steel Institute
1140 Connecticut Avenue
Suite 705
Washington, DC 20036

AISI
Standard reference number Title
S100—07 North American Specification for the Design of Cold-formed Steel Structural Members
S200—08 North American Standard for Cold-formed Steel Framing—General
S210—08 North American Standard for Cold-formed Steel Framing—Floor and Roof System Design
S211—08 North American Standard for Cold-formed Steel Framing—Wall Stud
S212—08 North American Standard for Cold-formed Steel Framing—Header Design
S213—08  North American Standard for Cold-formed Steel Framing—Lateral Design


American Institute of Timber Construction
Suite 140
7012 S. Revere Parkway
Englewood, CO 80112

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Automotive Lift Institute
P.O. Box 85
Courtland, NY 13045

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APA - Engineered Wood Association
7011 South 19th
Tacoma, WA 98466

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The Association of Pool & Spa Professionals
2111 Eisenhower Avenue
Alexandria, VA 22314

APSP
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American Society of Agricultural and Biological Engineers  
2950 Niles Road  
St. Joseph, MI 49085

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American Society of Civil Engineers  
Structural Engineering Institute  
1801 Alexander Bell Drive  
Reston, VA 20191-4400

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American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.
1791 Tullie Circle, NE
Atlanta, GA 30329-2305

**ASHRAE Standard Reference Number**  
ASHRAE 90.1-2007  *Energy Standard for Buildings Except Low-Rise Residential Buildings*

American Society of Mechanical Engineers
Three Park Avenue
New York, NY 10016-5990

**ASME Standard reference number**  
Title
A17.1/CSA B44—2010  Safety Code for Elevators and Escalators
A18.1—2008  Safety Standard for Platform Lifts and Stairway Chairlifts
A90.1—2009  Safety Standard for Belt Manlifts
B16.18—2001  (Reaffirmed 2005) Cast Copper Alloy Solder Joint Pressure Fittings
B16.22—2001  (Reaffirmed 2005) Wrought Copper and Copper Alloy Solder Joint Pressure Fittings
B20.1—2009  Safety Standard for Conveyors and Related Equipment
B31.3—2008  Process Piping

ASTM International  
100 Barr Harbor Drive  
West Conshohocken, PA 19428-2959
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C 552—07 Standard Specification for Cellular Glass Thermal Insulation
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C 568—10 Specification for Limestone Dimension Stone
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C 631—09 Specification for Bonding Compounds for Interior Gypsum Plastering
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C 652—10 Specification for Hollow Brick (Hollow Masonry Units Made from Clay or Shale)


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C 840—08 Specification for Application and Finishing of Gypsum Board

C 841—03 (2008)e1 Specification for Installation of Interior Lathing and Furring

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C 1186—08  Specification for Flat-Fiber Cement Sheets
C 1261—10  Specification for Firebox Brick for Residential Fireplaces
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C 1395/C 1395M—06a  Specification for Gypsum Ceiling Board
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D 4434/D 4434M-09  Specification for Poly (Vinyl Chloride) Sheet Roofing
D 4479—07  Specification for Asphalt Roof Coatings—Asbestos-free
D 4586—07  Specification for Asphalt Roof Cement—Asbestos-free
D 4601—04  Specification for Asphalt-coated Glass Fiber Base Sheet Used in Roofing
D 4637/D 4637M-10  Specification for EPDM Sheet Used in Single-ply Roof Membrane
D 4829—08a  Test Method for Expansion Index of Soils
D 4869—05e01  Specification for Asphalt-saturated (Organic Felt) Underlayment Used in Steep Slope Roofing
D 4945—08  Test Method for High-strain Dynamic Testing of Piles
D 4990—97a (2005)e1  Specification for Coal Tar Glass Felt Used in Roofing and Waterproofing.
D 5019—07a  Specification for Reinforced Nonvulcanized Polymeric Sheet Used in Roofing Membrane
D 5055—10  Specification for Establishing and Monitoring Structural Capacities of Prefabricated Wood I-joists
D 5456—10  Specification for Evaluation of Structural Composite Lumber Products
D 5516—09  Test Method of Evaluating the Flexural Properties of Fire-retardant-treated Softwood Plywood Exposed to the Elevated Temperatures
D 5643—06  Specification for Coal Tar Roof Cement, Asbestos-free
D 5664—10  Test Methods for Evaluating the Effects of Fire-retardant Treatment and Elevated Temperatures on Strength Properties of Fire-retardant-treated Lumber
D 5665—99a (2006)  Specification for Thermoplastic Fabrics Used in Cold-applied Roofing and Waterproofing
D 6083—05e01 Specification for Liquid Applied Acrylic Coating Used in Roofing


D 6164—05 e1 Specification for Styrene-butadiene-styrene (SBS) Modified Bituminous Sheet Metal Materials Using Polyester Reinforcements

D 6222—08 Specification for Atactic Polypropylene (APP) Modified Bituminous Sheet Materials Using Polyester Reinforcements

D 6223/D6223M-02(2009)e1 Specification for Atactic Polypropylene (APP) Modified Bituminous Sheet Materials Using a Combination of Polyester and Glass Fiber Reinforcements

D 6298—05e1 Specification for Fiberglass Reinforced Styrene-butadiene-styrene (SBS) Modified Bituminous Sheets with a Factory Applied Metal Surface

D 6305—08 Practice for Calculating Bending Strength Design Adjustment Factors for Fire-retardant-treated Plywood Roof Sheathing


D 6694—08 Standard Specification for Liquid-applied Silicone Coating Used in Spray Polyurethane Foam Roofing

D 6754/D6754M-10 Standard Specification for Ketone Ethylene Ester Based Sheet Roofing

D 6757—07 Standard Specification for Inorganic Underlayment for Use with Steep Slope Roofing Products

D 6841—08 Standard Practice for Calculating Design Value Treatment Adjustment Factors for Fire-retardant-treated Lumber

D 6878—08e1 Standard Specification for Thermoplastic Polyolefin Based Sheet Roofing
E 84—10b  Test Methods for Surface Burning Characteristics of Building Materials
E 90—09  Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements
E 96/E 96M—05  Test Method for Water Vapor Transmission of Materials
E 108—10a  Test Methods for Fire Tests of Roof Coverings
E 119—10b  Test Methods for Fire Tests of Building Construction and Materials
E 136—09b  Test Method for Behavior of Materials in a Vertical Tube Furnace at 750°C
E 331—00 (2009)  Test Method for Water Penetration of Exterior Windows, Skylights, Doors and Curtain Walls by Uniform Static Air Pressure Difference
E 681—09  Test Methods for Concentration Limits of Flammability of Chemical Vapors and Gases
E 814—10  Test Method of Fire Tests of Through-penetration Firestoppers
E 970—10  Test Method for Critical Radiant Flux of Exposed Attic Floor Insulation Using a Radiant Heat Energy Source
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<th>Standard No.</th>
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<td>E 1300—09a</td>
<td>Practice for Determining Load Resistance of Glass in Buildings.</td>
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<td>E 1592—05</td>
<td>Test Method for Structural Performance of Sheet Metal Roof and Siding Systems by Uniform Static Air Pressure Difference</td>
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<td>E 1886—05</td>
<td>Test Method for Performance of Exterior Windows, Curtain Walls, Doors and Storm Shutters Impacted by Missiles and Exposed to Cyclic Pressure Differentials</td>
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<td>E 2404—10</td>
<td>Standard Practice for Specimen Preparation and Mounting of Textile, Paper or Vinyl Wall or Ceiling Coverings to Assess Surface Burning Characteristics</td>
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<tr>
<td>E 2573—07a</td>
<td>Standard Practice for Specimen Preparation and Mounting of Site-fabricated Stretch Systems to Assess Surface Burning Characteristics</td>
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</table>
F 547—06 Terminology of Nails for Use with Wood and Wood-based Materials
F 1667—10 Specification for Driven Fasteners: Nails, Spikes and Staples
F 2006—10 Standard/Safety Specification for Window Fall Prevention Devices for Nonemergency Escape (Egress) and Rescue (Ingress) Windows
F 2090—10 Specification for Window Fall Prevention Devices with Emergency Escape (Egress) Release Mechanisms
F 2200—05 Standard Specification for Automated Vehicular Gate Construction
G 152—06 Practice for Operating Open Flame Carbon Arc Light Apparatus for Exposure of Nonmetallic Materials
G 154—06 Practice for Operating Fluorescent Light Apparatus for UV Exposure of Nonmetallic Materials
G 155—05a Practice for Operating Xenon Arc Light Apparatus for Exposure of Nonmetallic Materials

The Association of the Wall and Ceiling Industries International
513 West Broad Street, Suite 210
Falls Church, VA 22046

AWCI
Standard reference number Title

American Wood Protection Association
P.O. Box 361784
Birmingham, AL 35236-1784

AWPA
Standard
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<th>Reference Number</th>
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<tr>
<td>C1—03</td>
<td>All Timber Products—Preservative Treatment by Pressure Processes</td>
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<td>M4—06</td>
<td>Standard for the Care of Preservative-treated Wood Products</td>
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<td>U1—10</td>
<td>USE CATEGORY SYSTEM: User Specification for Treated Wood Except Section 6, Commodity Specification H</td>
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American Welding Society  
550 N.W. LeJeune Road  
Miami, FL 33126

**AWS**  
Standard Reference Number | Title  
--- | ---  
D1.1—10 | Structural Welding Code—Steel  
D1.3—08 | Structural Welding Code—Sheet Steel  
D1.4—05 | Structural Welding Code—Reinforcing Steel

Builders Hardware Manufacturers’ Association  
355 Lexington Avenue, 17th Floor  
New York, NY 10017-6603

**BHMA**  
Standard Reference Number | Title  
--- | ---  
A 156.10—05 | Power Operated Pedestrian Doors  
A 156.19—07 | Standard for Power Assist and Low Energy Operated Doors

Canadian General Standards Board  
Place du Portage 111, 6B1  
11 Laurier Street  
Gatineau, Quebec, Canada KIA 1G6

**CGSB**  
Standard Reference Number | Title  
--- | ---
CAN/CGSB 37.54—95  Polyvinyl Chloride Roofing and Waterproofing Membrane

Composite Panel Association
19465 Deerfield Avenue, Suite 306
Leesburg, VA 20176

**CPA**

**Standard reference number**  **Title**
ANSI A135.4—2004  Basic Hardboard
ANSI A135.5—2004  Prefinished Hardboard Paneling
ANSI A135.6—2006  Hardboard Siding

**CPSC**

**Standard reference number**  **Title**
16 CFR Part 1301(1977)  *Ban of Unstable Refuse Bins*
16 CFR Part 1404 (1979)  Cellulose Insulation
16 CFR Part 1500 (1991)  Hazardous Substances and Articles; Administration and Enforcement Regulations

Canadian Standards Association
5060 Spectrum Way, Suite 100
Mississauga, Ontario, L4W 5N6 Canada

CSA
Standard reference number
101/I.S.2/A440—08 Specifications for Windows, Doors and Unit Skylights

Cedar Shake and Shingle Bureau
P.O. Box 1178
Sumas, WA 98295-1178

CSSB
Standard reference number
CSSB—97 Grading and Packing Rules for Western Red Cedar Shakes and Western Red Shingles of the Cedar Shake and Shingle Bureau

Door and Access Systems Manufacturers Association International
1300 Summer Avenue
Cleveland, OH 44115-2851

DASMA
Standard reference number
115—05  Standard Method for Testing Sectional Garage Doors and Rolling Doors: Determination of Structural Performance Under Missile Impact and Cyclic Wind Pressure

U.S. Department of Commerce
National Institute of Standards and Technology
1401 Constitution Avenue, NW
Washington, DC 20230

DOC
Standard reference number   Title
PS-1—07   Structural Plywood
PS-2—04   Performance Standard for Wood-based Structural-use Panels
PS 20—05   American Softwood Lumber Standard

U.S. Department of Labor
c/o Superintendent of Documents
U.S. Government Printing Office
Washington, DC 20402-9325

DOL
Standard reference number   Title

U.S. Department of Transportation
c/o Superintendent of Documents
1200 New Jersey Avenue, SE
Washington, DC 20402-9325

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Standard reference
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<td>49CFR Parts 100-185-2005</td>
<td>Hazardous Materials Regulations</td>
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<td>49 CFR—1998</td>
<td>Specification of Transportation of Explosive and Other Dangerous Articles, UN 0335, UN 0336 Shipping Containers</td>
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European Committee for Standardization (EN)
Central Secretariat
Rue de Stassart 36
B-10 50 Brussels

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<th>EN Standard reference number</th>
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<td>EN 1081-98</td>
<td>Resilient Floor Coverings—Determination of the Electrical Resistance</td>
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Federal Emergency Management Agency
Federal Center Plaza
500 C Street S.W.
Washington, DC 20472

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<td>FIA-TB11—01</td>
<td>Crawlspace Construction for Buildings Located in Special Flood Hazard Areas</td>
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Factory Mutual Global Research
Standards Laboratories Department
1301 Atwood Avenue, P.O. Box 7500
Johnson, RI 02919
reference
number  Title
4450 (1989)  Approval Standard for Class 1 Insulated Steel Deck Roofs—with Supplements through July 1992
4470 (2010)  Approval Standard for Class 1 Roof Covers
4474 (04)  Evaluating the Simulated Wind Uplift Resistance of Roof Assemblies Using Static Positive and/or Negative Differential Pressures

Gypsum Association
810 First Street N.E. #510
Washington, DC 20002-4268

GA
Standard
reference
number  Title
GA 216—10  Application and Finishing of Gypsum Panel Products
GA 600—09  Fire-resistance Design Manual, 18th Edition

Hardwood Plywood Veneer Association
1825 Michael Faraday Drive
Reston, VA 20190-5350

HPVA
Standard
reference
number  Title
HP-1—2009  Standard for Hardwood and Decorative Plywood

U.S. Department of Housing and Urban Development
451 7th Street, SW,
Washington, DC 20410

HUD
Standard
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International Code Council, Inc.  
500 New Jersey Ave, NW 6th Floor  
Washington, DC 20001

**ICC Standard Reference Number**

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<td>ICC/ANSI A117.1—09</td>
<td>Accessible and Usable Buildings and Facilities</td>
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<td>ICC Standard on Bleachers, Folding and Telescopic Seating and</td>
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<td>ICC 400—07</td>
<td>Standard on Design and Construction of Log Structures</td>
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<td>ICC 500—08</td>
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<td>IEBC – 09</td>
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<td>International Energy Conservation Code <em>(adoption includes only section 101 of chapter 1 and chapters 2 through 6)</em></td>
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<td>International Fuel Gas Code <em>(including ICC Emergency Amendment changing IFGC Sections 406.7)</em></td>
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<td>SBCCI SSTD 11—99</td>
<td>Test Standard for Determining Wind Resistance of Concrete or Clay Roof Tiles</td>
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International Organization for Standardization  
ISO Central Secretariat,  
1 ch, de la Voie-Creuse,  
Case Postale 56  
CH-1211 Geneva 20, Switzerland

**ISO Standard Reference**
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<td>ISO 8115—86</td>
<td>Cotton Bales–Dimensions and Density</td>
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National Association of Architectural Metal Manufacturers,  
800 Roosevelt Road,  
Bldg. C, Suite 312  
Glen Ellyn, IL 60137

**NAAMM**  
**Standard reference number**  
**Title**

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<td>FP 1001—07</td>
<td>Guide Specifications for Design of Metal Flag Poles</td>
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National Concrete Masonry Association,  
13750 Sunrise Valley,  
Herndon, VA 22071-4662

**NCMA**  
**Standard reference number**  
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<td>Details for Concrete Masonry Fire Walls</td>
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National Fire Protection Association  
1 Batterymarch Park  
Quincy, MA 02269-9101

**NFPA**  
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<td>Installation of Sprinkler Systems (including TIA 10-2)</td>
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13R—10  Installation of Sprinkler Systems in Residential Occupancies Up to and Including Four Stories in Height *(including TIA 10-2)*

14—10  Installation of Standpipe and Hose System

16—07  Installation of Foam-water Sprinkler and Foam-water Spray Systems

17—09  Dry Chemical Extinguishing Systems

17A—09  Wet Chemical Extinguishing

20—10  Installation of Stationary Pumps for Fire Protection

30—08  Flammable and Combustible Liquids Code

31—06  Installation of Oil-burning Equipment

32—07  Dry Cleaning Plants

40—11  Storage and Handling of Cellulose Nitrate Film

58—11  Liquefied Petroleum Gas Code

61—08  Prevention of Fires and Dust Explosions in Agricultural and Food Product Facilities

70—14  National Electrical Code *(including TIA 11-1)*

72—10  National Fire Alarm and Signaling Code *(including TIA 10-4 and TIA 10-5)*

80—10  Fire Doors and Other Opening Protectives

85—07  Boiler and Combustion System Hazards Code

(note: NFPA 8503 has been incorporated into NFPA 85)

92B—09  Smoke Management Systems in Malls, Atria and Large Spaces

99—05  Standard for Health Care Facilities

105—10  Standard for the Installation of Smoke Door Assemblies

110—10  Emergency and Standby Power Systems

111—10  Stored Electrical Energy Emergency and Standby Power Systems

120—10  Coal Preparation Plants

170—09  Standard for Fire Safety and Emergency Symbols

211—10  Chimneys, Fireplaces, Vents and Solid Fuel-burning

252—08  Standard Methods of Fire Tests of Door Assemblies

253—06  Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source

257—07  Standard for Fire Test for Window and Glass Block Assemblies
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<td>Standard Method of Test for the Evaluation of Flammability Characteristics of Exterior Nonload-bearing Wall Assemblies Containing Combustible Components</td>
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<td>286—06</td>
<td>Standard Method of Fire Test for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth</td>
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<td>288—07</td>
<td>Standard Method of Fire Tests of Floor Fire Door Assemblies Installed Horizontally in Fire-resistance-rated Floor Systems</td>
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<td>Prevention of Fire &amp; Dust Explosions from the Manufacturing, Processing and Handling of Combustible Particulate Solids</td>
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<td>Prevention of Sulfur Fires and Explosions</td>
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<td>Standard Methods of Fire Tests for Flame-propagation of Textiles and Films</td>
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<td>Manufacture, Transportation and Storage of Fireworks and Pyrotechnic Articles</td>
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<td>2001—08</td>
<td>Clean Agent Fire Extinguishing Systems</td>
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Precast Prestressed Concrete Institute  
175 W. Jackson Boulevard, Suite 500  
Chicago, IL 60604-6938  

**PCI**  
**Standard**
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<td>MNL 124—89</td>
<td>Design for Fire Resistance of Precast Prestressed Concrete</td>
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<td>MNL 128—01</td>
<td>Recommended Practice for Glass Fiber Reinforced Concrete Panels</td>
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Post-Tensioning Institute  
8601 North Black Canyon Highway, Suite 103  
Phoenix, AZ 85021

**PTI**  
**Standard Reference Number**  
**Title**

| PTI—2008 | Standard Requirements for Analysis of Shallow Concrete Foundations on Expansive Soils, Third Edition |
| PTI—2008 | Standard Requirements for Design of Shallow Post-tensioned Concrete Foundation on Expansive Soils, Second Edition |

Rack Manufacturers Institute  
8720 Red Oak Boulevard, Suite 201  
Charlotte, NC 28217

**RMI**  
**Standard Reference Number**  
**Title**

| ANSI/MH16.1—08 | Specification for Design, Testing and Utilization of Industrial Steel Storage Racks |

Steel Deck Institute,  
P. O. Box 25  
Fox River Grove, IL 60021

**SDI**  
**Standard Reference Number**  
**Title**

| ANSI/NC1.0—06 | Standard for Noncomposite Steel Floor Deck |
### ANSI/RD1.0—06
**Standard for Steel Roof Deck**

Steel Joist Institute,  
1173B London Links Drive  
Forest, VA 24551

#### SJI

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<td>K-1.1—05</td>
<td>Standard Specification for Open Web Steel Joists, K-series</td>
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<td>LH/DLH-1.1—05</td>
<td>Standard Specification for Longspan Steel Joists, LH-series and Deep Longspan Steel Joists, DLH-series</td>
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Single-Ply Roofing Institute,  
411 Waverly Oaks Road, Suite 331B,  
Waltham, MA 02452

#### SPRI

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<td>Wind Design Standard for Edge Systems Used with Low Slope Roofing Systems</td>
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<td>RP-4—02</td>
<td>Wind Design Guide for Ballasted Single-ply Roofing Systems</td>
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Telecommunications Industry Association  
2500 Wilson Boulevard  
Arlington, VA 22201-3834

#### TIA
TIA-222-G—09 Structural Standards for Steel Antenna Towers and Antenna Supporting Structures including-Addendum 1, 222-G-1, Dated 2007

The Masonry Society, 3970 Broadway, Unit 201-D, Boulder, CO 80304-1135

TMS

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<td>Standard Method for Determining Fire Resistance of Concrete and Masonry Construction Assemblies</td>
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<td>Building Code Requirements for Masonry Structures</td>
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<td>Specification for Masonry Structures</td>
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Truss Plate Institute, 218 N. Lee Street, Suite 312 Alexandria, VA 22314

TPI

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<td>National Design Standards for Metal-plate-connected Wood Truss Construction</td>
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Underwriters Laboratories, Inc. 333 Pfingsten Road Northbrook, IL 60062-2096

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<td>Fire Tests of Door Assemblies</td>
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<td>10C-09</td>
<td>Positive Pressure Fire Tests of Door Assemblies</td>
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<td>Sliding Hardware for Standard Horizontally-mounted Tin Clad Fire Doors</td>
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<td>Swinging Hardware for Standard Tin Clad Fire Doors Mounted Singly and in Pairs</td>
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<td>103-10</td>
<td>Factory-built Chimneys, for Residential Type and Building Heating Appliances</td>
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<td>217-06</td>
<td>Single and Multiple Station Smoke Alarms</td>
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<td>263-03</td>
<td>Standard for Fire Test of Building Construction and Materials</td>
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<td>Smoke Detectors for Fire Protective Signaling Systems</td>
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<td>300-05</td>
<td>Fire Testing of Fire Extinguishing Systems for Protection of Restaurant Cooking Areas</td>
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<td>305-97</td>
<td>Panic Hardware</td>
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<tr>
<td>325-02</td>
<td>Door, Drapery, Gate, Louver and Window Operations and Systems—with Revisions through February 2006</td>
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<td>Fire Dampers</td>
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<td>555C-2006</td>
<td>Ceiling Dampers</td>
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<td>555S-99</td>
<td>Smoke Dampers—with Revisions through July 2006</td>
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<td>580-2006</td>
<td>Test for Uplift Resistance of Roof Assemblies</td>
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<td>641-95</td>
<td>Type L Low-temperature Venting Systems</td>
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<td>710B-04</td>
<td>Recirculating Systems—with Revisions through April 2006</td>
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<td>723-08</td>
<td>Standard for Test for Surface Burning Characteristics of Building Materials</td>
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<td>790-04</td>
<td>Standard Test Methods for Fire Tests of Roof Coverings</td>
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<td>793-08</td>
<td>Standards for Automatically Operated Roof Vents for Smoke and Heat</td>
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<td>864-03</td>
<td>Standards for Control Units and Accessories for Fire Alarm Systems—with Revisions through March 2006</td>
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<td>924-06</td>
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<td>1040-96</td>
<td>Fire Test of Insulated Wall Construction—with Revisions through June 2001</td>
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<td>1256-02</td>
<td>Fire Test of Roof Deck Construction—with Revisions through January 2007</td>
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<td>1479-03</td>
<td>Fire Tests of Through-penetration Firestops—with Revisions through April 2007</td>
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<td>Solid-fuel-type Room Heater</td>
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1715—97  Fire Test of Interior Finish Material—with Revisions through March 2004
1777—07  Chimney Liners
1784—01  Air Leakage Tests of Door Assemblies—with Revisions through December 2004
1897—04  Uplift Tests for Roof Covering Systems
1975—06  Fire Test of Foamed Plastics Used for Decorative Purposes
1994—04  Standard for Luminous Egress Path Marking Systems—with Revisions through February 2005
2017—08  Standards for General-purpose Signaling Devices and Systems
2200—98  Stationary Engine Generator Assemblies

Underwriters Laboratories of Canada,
7 Underwriters Road,
Toronto, Ontario, Canada M1R3B4

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<td>CAN/ULC S102.2—2010</td>
<td>Standard Method of Test for Surface Burning Characteristics of Flooring, Floor Coverings and Miscellaneous Materials and Assemblies—with 2000 Revisions</td>
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United States Code,
c/o Superintendent of Documents
U.S. Government Printing Office,
Washington, DC 20402-9325

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<td>10 U.S.C. Sections 18233(A)(1) and 18237-1994</td>
<td>Importation, Manufacture, Distribution and Storage of Explosive Materials</td>
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Window and Door Manufacturers Association  
1400 East Touhy Avenue #470  
Des Plaines, IL 60018

**WDMA**  
**Standard reference number** | **Title**  
AAMA/WDMA/CSA 101/I.S.2/A440—08 | Specifications for Windows, Doors and Unit Skylights

Wire Reinforcement Institute, Inc.  
942 Main Street, Suite 300  
Hartford, CT 06103

**WRI**  
**Standard reference number** | **Title**  
WRI/CRSI—81 | Design of Slab-on-ground Foundations—with 1996 Update
Effective: 01/01/2015

Five Year Review (FYR) Dates: 11/01/2016

CERTIFIED ELECTRONICALLY

Certification

11/20/2014

Date

Promulgated Under: 119.03
Statutory Authority: 3781.10(A)
Rule Amplifies: 3781.10, 3781.11, 3791.04
Prior Effective Dates: 9/1/92, 2/1/93, 7/1/95, 7/1/97, 3/1/98, 7/1/98, 1/1/99, 12/1/00, 1/1/02, 3/1/05, 9/6/05, 3/1/06, 7/1/07, 1/1/08, 3/31/08 (Emer.), 6/24/08, 1/1/09, 11/1/11, 3/15/12, 3/1/13