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2015 International Fire Code

BOOK PART III—Building and Equipment Design Features

SECTION 601 GENERAL

601.1 Scope. The provisions of this chapter shall apply to the ~~installation~~, operation and maintenance of fuel-fired appliances and heating systems, emergency and standby power systems, electrical systems and equipment, mechanical refrigeration systems, elevator recall, stationary storage battery systems and commercial kitchen equipment.

601.2 Permits. Permits shall be obtained for refrigeration systems, battery systems and solar photovoltaic power systems as set forth in Sections 105.6 and 105.7.

SECTION 602 DEFINITIONS

602.1 Definitions. The following terms are defined in Chapter 2:

BATTERY SYSTEM, STATIONARY LEAD-ACID.

BATTERY TYPES.

COMMERCIAL COOKING APPLIANCES.

CRITICAL CIRCUIT.

EMERGENCY POWER SYSTEM.

HOOD.

Type I.

Type II.

REFRIGERANT.

REFRIGERATION SYSTEM.

STANDBY POWER SYSTEM.

SECTION 603 FUEL-FIRED APPLIANCES

603.1 Installation. The installation of nonportable fuel gas appliances and systems shall comply with the ~~International Fuel Gas~~Uniform Statewide Building Code. ~~The installation of all~~ All other fuel-fired appliances, ~~other than internal combustion engines, oil lamps and including portable devices such as blow torches, melting pots and weed burners,~~ shall comply with this section ~~and the International Mechanical Code~~.

603.1.1 Manufacturer's instructions. ~~The installation~~ Appliances shall be maintained in accordance with the manufacturer's instructions and applicable federal, state and local rules and regulations. Where it becomes necessary to change, modify or alter a manufacturer's instructions in any way, written approval shall first be obtained from the manufacturer.

603.1.2 Approval. ~~The design, construction and installation of fuel fired appliances shall be in accordance with the International Fuel Gas Code and the International Mechanical Code.~~

603.1.3 Electrical wiring and equipment. Electrical wiring and equipment used in connection with oil-burning equipment shall be ~~installed and~~ maintained in accordance with Section 605 and NFPA 70.

603.1.4 Fuel oil. The grade of fuel oil used in a burner shall be that for which the burner is *approved* and as stipulated by the burner manufacturer. Oil containing gasoline shall not be used. Waste crankcase oil shall be an acceptable fuel in Group F, M and S occupancies where utilized in equipment *listed* for use with waste oil and where such equipment is installed in accordance with the manufacturer's instructions and the terms of its listing.

603.1.5 Access. ~~The installation~~

Appliances shall be readily accessible for cleaning hot surfaces; removing burners; replacing motors, controls, air filters, chimney connectors, draft regulators and other working parts; and for adjusting, cleaning and lubricating parts.

603.1.6 Testing, diagrams and instructions. ~~After installation~~

Following servicing or maintenance of the oil-burning equipment, operation and combustion performance tests shall be conducted to determine that the burner is in proper operating condition and that all accessory equipment, controls, and safety devices function properly.

603.1.6.1 Diagrams. ~~Contractors installing industrial oil-burning systems shall furnish not less than two~~

Two copies of diagrams showing the main oil lines and controlling valves shall be provided, one copy of which shall be posted at the oil-burning equipment and another at an *approved* location that will be accessible in case of emergency.

603.1.6.2 Instructions. After completing the installation, the installer shall instruct the *owner* or operator in the proper operation of the equipment. The installer shall furnish the *owner* or operator with the name and telephone number of persons to contact for technical information or assistance and routine or emergency services.

603.1.7 Clearances. Working clearances between oil-fired appliances and electrical panelboards and equipment shall be in accordance with NFPA 70. Clearances between oil-fired equipment and oil supply tanks shall be in accordance with NFPA 31.

603.2 Chimneys. Masonry, metal, and factory-built chimneys shall be constructed~~maintained~~ in accordance with the ~~*International Building Code*~~ *International Building Code* ~~Factory-built chimneys shall be installed in accordance with the~~ *International Mechanical Code*. Metal chimneys shall be constructed and installed in accordance ~~with~~ NFPA 211.

603.3 Fuel oil storage systems. Fuel oil storage systems shall be ~~installed in~~

~~accordance with this code. Fuel oil piping systems shall be installed in accordance with maintained as provided by the *International Mechanical*~~*Uniform Statewide Building Code*.

603.3.1 Fuel oil storage in outside, above-ground tanks. Where connected to a fuel-oil piping system, the maximum amount of fuel oil storage allowed outside above ground without additional protection shall be 660 gallons (2498 L) unless otherwise installed in accordance with the *Uniform Statewide Building Code*. The storage of fuel oil above ground in quantities exceeding 660 gallons (2498 L) shall ~~comply~~be maintained in accordance with NFPA 31.

603.3.2 Fuel oil storage inside buildings. Fuel oil storage inside buildings shall comply with Sections 603.3.2.1 through 603.3.2.5 or Chapter 57.

603.3.2.1 Quantity limits. One or more fuel oil storage tanks containing Class II or III *combustible liquid* shall be permitted in a building. The aggregate capacity of all such tanks shall not exceed 660 gallons (2498 L).

- **Exception:** The aggregate capacity limit shall be permitted to be increased to 3,000 gallons (11 356 L) of Class II or III liquid for storage in protected above-ground tanks complying with Section 5704.2.9.7, where all of the following conditions are met:
 1. The entire 3,000-gallon (11 356 L) quantity shall be stored in protected above-ground tanks.
 2. The 3,000-gallon (11 356 L) capacity shall be permitted to be stored in a single tank or multiple smaller tanks.
 3. The tanks shall be located in a room protected by an *automatic sprinkler system* complying with Section 903.3.1.1.

603.3.2.2 Restricted use and connection. Tanks installed in accordance with Section 603.3.2 shall be used only to supply fuel oil to fuel-burning or generator equipment installed in accordance with Section 603.3.2.4. Connections between tanks and equipment supplied by such tanks shall be made using closed piping systems.

603.3.2.3 Applicability of maximum allowable quantity and control area requirements. The quantity of *combustible liquid* stored in tanks complying with Section 603.3.2 shall not be counted towards the maximum allowable quantity set forth in Table 5003.1.1(1), and such tanks shall not be required to be located in a *control area*.

603.3.2.4 ~~Installation~~Separation. Tanks and piping systems shall be ~~installed and~~ separated from other uses in accordance with ~~Section 915 and Chapter 13, both of the *International Mechanical*~~*the Uniform Statewide Building Code*, as applicable.

- **Exception:** Protected above-ground tanks complying with Section 5704.2.9.7 shall not be required to be separated from surrounding areas.

603.3.2.5 Tanks in basements. Tanks in *basements* shall be located not more than two stories below grade plane.

603.3.3 Underground storage of fuel oil. The storage of fuel oil in underground storage tanks shall comply with NFPA 31.

603.4 Portable unvented heaters. Portable unvented fuel-fired heating equipment shall be prohibited in occupancies in Groups A, E, I, R-1, R-2, R-3 and R-4.

- **Exceptions:**

1. *Listed* and *approved* unvented fuel-fired heaters, including portable outdoor gas-fired heating appliances, in one- and two-family *dwelling*s.
2. Portable outdoor gas-fired heating appliances shall be allowed in accordance with Section 603.4.2.

603.4.1 Prohibited locations. Unvented fuel-fired heating equipment shall not be located in, or obtain combustion air from, any of the following rooms or spaces: sleeping rooms, bathrooms, toilet rooms or storage closets.

603.4.2 Portable outdoor gas-fired heating appliances. Portable gas-fired heating appliances located outdoors shall be in accordance with Sections 603.4.2.1 through 603.4.2.3.4.

603.4.2.1 Location. Portable outdoor gas-fired heating appliances shall be located in accordance with Sections 603.4.2.1.1 through 603.4.2.1.4.

603.4.2.1.1 Prohibited locations. The storage or use of portable outdoor gas-fired heating appliances is prohibited in any of the following locations:

1. Inside of any occupancy where connected to the fuel gas container.
2. Inside of tents, canopies and membrane structures.
3. On exterior balconies.
 - **Exception:** As allowed in Section 6.20 of NFPA 58.

603.4.2.1.2 Clearance to buildings. Portable outdoor gas-fired heating appliances shall be located not less than 5 feet (1524 mm) from buildings.

603.4.2.1.3 Clearance to combustible materials. Portable outdoor gas-fired heating appliances shall not be located beneath, or closer than 5 feet (1524 mm) to combustible decorations and combustible overhangs, awnings, sunshades or similar combustible attachments to buildings.

603.4.2.1.4 Proximity to exits. Portable outdoor gas-fired heating appliances shall not be located within 5 feet (1524 mm) of *exits* or *exit discharges*.

603.4.2.2 Installation and operation. Portable outdoor gas-fired heating appliances shall be installed and operated in accordance with Sections 603.4.2.2.1 through 603.4.2.2.4.

603.4.2.2.1 Listing and approval. Only *listed* and *approved* portable outdoor gas-fired heating appliances utilizing a fuel gas container that is integral to the appliance shall be used.

603.4.2.2.2 Installation and maintenance. Portable outdoor gas-fired heating appliances shall be installed and maintained in accordance with the manufacturer's instructions.

603.4.2.2.3 Tip-over switch. Portable outdoor gas-fired heating appliances shall be equipped with a tilt or tip-over switch that automatically shuts off the flow of gas if the appliance is tilted more than 15 degrees (0.26 rad) from the vertical.

603.4.2.2.4 Guard against contact. The heating element or combustion chamber of portable outdoor gas-fired heating appliances shall be permanently guarded so as to prevent accidental contact by persons or material.

603.4.2.3 Gas containers. Fuel gas containers for portable outdoor gas-fired heating appliances shall comply with Sections 603.4.2.3.1 through 603.4.2.3.4.

603.4.2.3.1 Approved containers. Only *approved* DOTn or ASME gas containers shall be used.

603.4.2.3.2 Container replacement. Replacement of fuel gas containers in portable outdoor gas-fired heating appliances shall not be conducted while the public is present.

603.4.2.3.3 Container capacity. The maximum individual capacity of gas containers used in connection with portable outdoor gas-fired heating appliances shall not exceed 20 pounds (9 kg).

603.4.2.3.4 Indoor storage prohibited. Gas containers shall not be stored inside of buildings except in accordance with Section 6109.9.

603.5 Heating appliances. Heating appliances shall be *listed* and shall comply with Sections 603.5.1 and 603.5.2.

603.5.1 Guard against contact. The heating element or combustion chamber shall be permanently guarded so as to prevent accidental contact by persons or material.

603.5.2 Heating appliance ~~installation and maintenance.~~ Heating appliances shall be maintained as installed and maintained in accordance with the Uniform Statewide Building Code, the manufacturer's instructions, ~~the International Building Code, the International Mechanical Code, the International Fuel Gas Code and NFPA 70.~~

603.6 Chimneys and appliances. Chimneys, incinerators, smokestacks or similar devices for conveying smoke or hot gases to the outer air and the stoves, furnaces, fireboxes or boilers to which such devices are connected, shall be maintained so as not to create a fire hazard.

603.6.1 Masonry chimneys. Masonry chimneys that, upon inspection, are found to be without a flue liner and that have open mortar joints which will permit smoke or gases to be discharged into the building, or which are cracked as to be dangerous, shall be repaired or relined ~~with a listed chimney liner system installed in accordance with the manufacturer's instructions or a flue lining system installed in accordance with the requirements of the International~~ Uniform Statewide Building Code and appropriate for the intended class of chimney service.

603.6.2 Metal chimneys. Metal chimneys which are corroded or ~~improperly supported~~ damaged shall be repaired or replaced.

603.6.3 Decorative shrouds. Decorative shrouds installed at the termination of factory-built chimneys shall be removed except where such shrouds are *listed* and *labeled* for use with the specific factory-built chimney system and are installed in accordance with the chimney manufacturer's instructions.

603.6.4 Factory-built chimneys. Existing factory-built chimneys that are damaged, ~~corroded or improperly supported~~ corroded shall be repaired or replaced.

603.6.5 Connectors. Existing chimney and vent connectors that are damaged, ~~corroded or improperly supported~~ corroded shall be repaired or replaced.

603.7 Discontinuing operation of unsafe heating appliances. The *fire code official* is authorized to order that measures be taken to prevent the operation of any existing stove, oven, furnace, incinerator, boiler or any other heat-producing device or appliance found to be defective or in violation of this code ~~requirements for existing appliances~~ after giving notice to this effect to any person, *owner*, firm or agent or operator in charge of the same. The *fire code official* is authorized to take measures to prevent the operation of any device or appliance without notice when inspection shows the existence of an immediate fire hazard or when imperiling human life. The defective device shall remain withdrawn from service until all necessary repairs or *alterations* have been made.

603.7.1 Unauthorized operation. It shall be a violation of this code for any person, user, firm or agent to continue the utilization of any device or appliance (the operation of which has been discontinued or ordered discontinued in accordance with Section 603.7) unless written authority to resume operation is given by the *fire code official*. Removing or breaking the means by which operation of the device is prevented shall be a violation of this code.

603.8 Incinerators. Commercial, industrial and residential-type incinerators and chimneys shall be ~~constructed~~maintained in accordance with the ~~International~~Uniform Statewide Building Code, ~~the International Fuel Gas Code~~ and ~~the International Mechanical Code~~.

603.8.1 Residential incinerators. Residential incinerators shall be of an *approved* type.

603.8.2 Spark arrestor. Incinerators not regulated by the Uniform Statewide Building Code shall be equipped with an effective means for arresting sparks.

603.8.3 Restrictions. Where the *fire code official* determines that burning in incinerators located within 500 feet (152 m) of mountainous, brush or grass-covered areas will create an undue fire hazard because of atmospheric conditions, such burning shall be prohibited.

603.8.4 Time of burning. Burning shall take place only during *approved* hours.

603.8.5 Discontinuance. The *fire code official* is authorized to require incinerator use to be discontinued immediately if the *fire code official* determines that smoke emissions are offensive to occupants of surrounding property or if the use of incinerators is determined by the *fire code official* to constitute a hazardous condition.

~~**603.8.6 Flue-fed incinerators in Group I-2.** In Group I-2 occupancies, the continued use of existing flue-fed incinerators is prohibited.~~

603.8.7 Incinerator inspections in Group I-2. Incinerators in Group I-2 occupancies shall be inspected not less than annually in accordance with the manufacturer's instructions. Inspection records shall be maintained on the premises and made available to the *fire code official* upon request

603.9 Gas meters. Above-ground gas meters, regulators and piping subject to damage shall be protected by a barrier complying with Section 312 or otherwise protected in an *approved* manner.

SECTION 604 EMERGENCY AND STANDBY POWER SYSTEMS

604.1 General. Emergency power systems and standby power systems ~~required by~~ shall be maintained in accordance with this code ~~or the International Building Code~~ shall comply with Sections 604.1.1 through 604.1.8 ~~section~~.

604.1.1 Stationary generators~~Generators~~. Stationary emergency ~~Emergency~~ and standby power generators required by this code shall be ~~listed in~~ accordance with UL 2200.

604.1.2 Installation. ~~Emergency power systems and standby power systems shall be installed in accordance with the International Building Code, NFPA 70, NFPA 110 and NFPA 111.~~

604.1.3 Load transfer. Emergency power systems shall automatically provide secondary power within 10 seconds after primary power is lost, unless specified otherwise in ~~this code~~ the Uniform Statewide Building Code. Standby power systems shall automatically provide secondary power within 60 seconds after primary power is lost unless specified otherwise ~~in this code~~ by the Uniform Statewide Building Code.

604.1.4 Load duration. Emergency power systems and standby power systems shall be designed to provide the required power for a minimum duration of 2 hours without being refueled or recharged, unless otherwise specified ~~otherwise in this code~~ the Uniform Statewide Building Code.

604.1.5 Uninterruptable power source. An uninterrupted source of power shall be provided for equipment where required by the manufacturer's instructions, the listing, ~~this code~~ the Uniform Statewide Building Code, or applicable referenced standards.

604.1.6 Interchangeability. Emergency power systems shall be an acceptable alternative for installations that require standby power systems when permitted by the Uniform Statewide Building Code.

604.1.7 Group I-2 occupancies. ~~In Group I-2 occupancies, where an essential electrical system is located in flood hazard areas established in Section 1612.3 of the International Building Code and where new or replacement essential electrical system generators are installed, the system shall be located and installed in accordance with ASCE 24.~~

604.1.8 Maintenance. Existing installations shall be maintained in accordance with the original approval and Section 604.4.

604.2 Where required. **Specific equipment requirements.** Emergency and standby power systems shall be ~~provided where required by~~ maintained in accordance

with Sections 604.2.1 through 604.2.16.

604.2.1 Elevators and platform lifts. Standby power shall be ~~provided~~maintained in accordance with NFPA 72 for elevators and platform lifts ~~as required in Sections 607.2, 1009.4, and 1009.5 by the~~ Uniform Statewide Building Code.

604.2.2 Emergency alarm systems. Emergency power shall be ~~provided~~maintained for emergency alarm systems as required by ~~Section 414 of the~~ International~~the~~ Uniform Statewide Building Code.

~~**604.2.3 Emergency responder radio coverage systems.** Standby power shall be provided for emergency responder radio coverage systems as required in Section 510.4.2.3. The standby power supply shall be capable of operating the emergency responder radio coverage system for a duration of not less than 24 hours.~~

604.2.4 Emergency voice/alarm communication systems. Emergency power shall be ~~provided~~maintained for emergency voice/alarm communication systems as required in ~~Section 907.5.2.2.5 by the~~ Uniform Statewide Building Code. The system shall be capable of powering the required load for a duration of not less than 24 hours, as required in NFPA 72.

604.2.5 Exit signs. Emergency power ~~shall be provided~~ for exit signs ~~as required in Section 1013.6.3. The system shall be capable of powering the required load for a duration of not less than 90 minutes~~ unless otherwise specified by the Uniform Statewide Building Code.

604.2.6 Group I-2 occupancies. Essential electrical systems for Group I-2 occupancies shall be maintained in accordance with ~~Section 407.10 of~~ NFPA 72 when ~~required by the~~ International~~Uniform Statewide Building Code~~.

604.2.7 Group I-3 occupancies. Power-operated sliding doors or power-operated locks for swinging doors in Group I-3 occupancies shall be operable by a manual release mechanism at the door. Emergency power ~~shall be provided~~ for the doors and locks ~~in accordance with Section 604.~~

Exceptions:

- ~~1. Emergency power is not required in facilities where provisions for remote locking and unlocking of occupied rooms in Occupancy Condition 4 are not required as set forth in the~~ International Building Code.
- ~~2. Emergency power is not required where remote mechanical operating releases are provided.~~

shall be maintained where required by the Uniform Statewide Building Code.

604.2.8 Hazardous materials. Emergency and standby power shall be ~~provided~~maintained in accordance with NFPA 72 in occupancies with hazardous materials ~~as when~~ required ~~in by~~ the following sections:

- ~~1. Sections 5004.7 and 5005.1.5 for hazardous materials.~~
- ~~2. Sections 6004.2.2.8 and 6004.3.4.2 for highly toxic and toxic gases.~~
- ~~3. Section 6204.1.11 for organic peroxides.~~

Uniform Statewide Building Code:

604.2.9 High-rise buildings. ~~Standby power and emergency power shall be provided for high-rise buildings as required in Section 403 of the *International Building Code*, and shall be in accordance with Section 604.~~

604.2.10 Horizontal sliding doors. Standby power shall be ~~provided~~maintained in accordance with NFPA 72 for horizontal sliding doors as required ~~in Section 1010.1.4.3~~ by the *Uniform Statewide Building Code*. The standby power supply shall have a capacity to operate not fewer than 50 closing cycles of the door unless otherwise specified by the *Uniform Statewide Building Code*.

604.2.11 Hydrogen fuel gas rooms. Standby power shall be ~~provided~~maintained in accordance with NFPA 72 for hydrogen fuel gas rooms as required ~~by Section 5808.7~~ the *Uniform Statewide Building Code*.

604.2.12 Means of egress illumination. Emergency power shall be ~~provided~~maintained for *means of egress* illumination in accordance with ~~Sections 1008.3 and 1104.5.1~~ the *Uniform Statewide Building Code*.

604.2.13 Membrane structures. Standby power shall be ~~provided~~maintained for auxiliary inflation systems in permanent membrane structures in accordance with ~~Section 2702 of the *International Building Code*~~ *Uniform Statewide Building Code*. Auxiliary inflation systems shall be ~~provided~~ in temporary air-supported and air-inflated membrane structures in accordance with Section 3103.10.4.

604.2.14 Semiconductor fabrication facilities. Emergency power shall be ~~provided~~maintained in accordance with NFPA 72 for semiconductor fabrication facilities as required ~~in Section 2703.15~~ by the *Uniform Statewide Building Code*.

604.2.15 Smoke control systems. Standby power shall be ~~provided~~maintained in accordance with NFPA 72 for smoke control systems as required ~~in Section 909.11~~ by the *Uniform Statewide Building Code*.

604.2.16 Underground buildings. Emergency and standby power shall be ~~provided~~maintained in accordance with NFPA 72 in underground buildings as required ~~in Section 405 of the *International Building Code*~~ *Uniform Statewide Building Code* and shall be in

accordance with Section 604.

604.3 Critical circuits. Cables used for survivability of required critical circuits shall be listed in accordance with UL 2196. Electrical circuit protective systems shall be ~~installed~~maintained in accordance with their listing requirements.

604.4 Maintenance. Emergency and standby power systems shall be maintained in accordance with NFPA 70, NFPA 110 and NFPA 111 such that the system is capable of supplying service within the time specified for the type and duration required in accordance with the Uniform Statewide Building Code.

604.4.1 Schedule. Inspection, testing and maintenance of emergency and standby power systems shall be in accordance with an *approved* schedule established upon completion and approval of the system installation.

604.4.2 Records. Records of the inspection, testing and maintenance of emergency and standby power systems shall include the date of service, name of the servicing technician, a summary of conditions noted and a detailed description of any conditions requiring correction and what corrective action was taken. Such records shall be maintained.

604.4.3 Switch maintenance. Emergency and standby power system transfer switches shall be included in the inspection, testing and maintenance schedule required by Section 604.4.1. Transfer switches shall be maintained free from accumulated dust and dirt. Inspection shall include examination of the transfer switch contacts for evidence of deterioration. When evidence of contact deterioration is detected, the contacts shall be replaced in accordance with the transfer switch manufacturer's instructions.

604.5 Operational inspection and testing. Emergency power systems, including all appurtenant components, shall be inspected and tested under load in accordance with NFPA 110, NFPA 70, and NFPA 111.

- **Exception:** Where the emergency power system is used for standby power or peak load shaving, such use shall be recorded and shall be allowed to be substituted for scheduled testing of the generator set, provided that appropriate records are maintained.

604.5.1 Transfer switch test. The test of the transfer switch shall consist of electrically operating the transfer switch from the normal position to the alternate position and then return to the normal position.

604.6 Emergency lighting equipment. Emergency lighting shall be inspected and tested in accordance with Sections 604.6.1 through 604.6.2.1.

604.6.1 Activation test. An activation test of the emergency lighting equipment shall be completed monthly. The activation test shall ensure the emergency lighting activates automatically upon normal electrical disconnect and stays sufficiently illuminated for not less than 30 seconds.

604.6.1.1 Activation test record. Records of tests shall be maintained. The record shall include the location of the emergency lighting tested, whether the unit passed or failed, the date of the test and the person completing the test.

604.6.2 Power test. For battery-powered emergency lighting, a power test of the emergency lighting equipment shall be completed annually. The power test shall operate the emergency lighting for not less than 90 minutes and shall remain sufficiently illuminated for the duration of the test.

604.6.2.1 Power test record. Records of tests shall be maintained. The record shall include the location of the emergency lighting tested, whether the unit passed or failed, the date of the test and the person completing the test.

604.7 Supervision of maintenance and testing. Routine maintenance, inspection and operational testing shall be overseen by a properly instructed individual.

SECTION 605 ELECTRICAL EQUIPMENT, WIRING AND HAZARDS

605.1 Abatement of electrical hazards. Identified electrical hazards shall be abated. Identified hazardous electrical conditions in permanent wiring shall be brought to the attention of the responsible code official. Electrical wiring, devices, appliances and other equipment that is modified or damaged and constitutes an electrical shock or fire hazard shall not be used.

605.2 Illumination. Illumination shall be provided/maintained for service equipment areas, motor control centers and electrical panelboards.

605.3 Working space and clearance. A working space of not less than 30 inches (762 mm) in width, 36 inches (914 mm) in depth and 78 inches (1981 mm) in height shall be provided in front of electrical service equipment. Where the electrical service equipment is wider than 30 inches (762 mm), the working space shall be not less than the width of the equipment. Storage of materials shall not be located within the designated working space.

- **Exceptions:**

1. Where other dimensions are required or allowed by NFPA 70.
2. Access openings into attics or under-floor areas which provide a minimum clear opening of 22 inches (559 mm) by 30 inches (762 mm).

605.3.1 Labeling. Doors into electrical control panel rooms shall be marked with a plainly visible and legible sign stating ELECTRICAL ROOM or similar approved wording. The disconnecting means for each service, feeder or branch circuit originating on a switchboard or panelboard shall be legibly and durably marked to indicate its purpose unless such purpose is clearly evident.

605.4 Multiplug adapters. Multiplug adapters, such as cube adapters, unfused plug strips or any other device not complying with NFPA 70 shall be prohibited.

605.4.1 Power tap design. Relocatable power taps shall be of the polarized or grounded type, equipped with overcurrent protection, and shall be *listed* in accordance with UL 1363.

605.4.2 Power supply. Relocatable power taps shall be directly connected to a permanently installed receptacle.

605.4.3 Installation. Relocatable power tap cords shall not extend through walls, ceilings, floors, under doors or floor coverings, or be subject to environmental or physical damage.

605.5 Extension cords. Extension cords and flexible cords shall not be a substitute for permanent wiring. Extension cords and flexible cords shall not be affixed to structures, extended through walls, ceilings or floors, or under doors or floor coverings, nor shall such cords be subject to environmental damage or physical impact. Extension cords shall be used only with portable appliances.

605.5.1 Power supply. Extension cords shall be plugged directly into an *approved* receptacle, power tap or multiplug adapter and, except for *approved* multiplug extension cords, shall serve only one portable appliance.

605.5.2 Ampacity. The ampacity of the extension cords shall be not less than the rated capacity of the portable appliance supplied by the cord.

605.5.3 Maintenance. Extension cords shall be maintained in good condition without splices, deterioration or damage.

605.5.4 Grounding. Extension cords shall be grounded where serving grounded portable appliances.

605.6 Unapproved conditions. Open junction boxes and open-wiring splices shall be prohibited. *Approved* covers shall be provided for all switch and electrical outlet boxes.

605.7 Appliances. Electrical appliances and fixtures shall be tested and *listed* in published reports of inspected electrical equipment by an *approved* agency and installed and maintained in accordance with all instructions included as part of such listing.

605.8 Electrical motors. Electrical motors shall be maintained free from excessive accumulations of oil, dirt, waste and debris.

605.9 Temporary wiring. Temporary wiring for electrical power and lighting installations not regulated by the Uniform Statewide Building Code is allowed for a period not to exceed 90 days. Temporary wiring methods shall meet the applicable provisions of NFPA 70.

- **Exception:** Temporary wiring for electrical power and lighting installations is allowed during periods of construction, remodeling, repair or demolition of buildings, structures, equipment or similar activities.

605.9.1 Attachment to structures. Temporary wiring attached to a structure shall be attached in an *approved* manner.

605.10 Portable, electric space heaters. Where not prohibited by other sections of this code, portable, electric space heaters shall be permitted to be used in all occupancies other than Group I-2 and in accordance with Sections 605.10.1 through 605.10.4.

- **Exception:** The use of portable, electric space heaters in which the heating element cannot exceed a temperature of 212°F (100°C) shall be permitted in nonsleeping staff and employee areas in Group I-2 occupancies.

605.10.1 Listed and labeled. Only *listed* and *labeled* portable, electric space heaters shall be used.

605.10.2 Power supply. Portable, electric space heaters shall be plugged directly into an *approved* receptacle.

605.10.3 Extension cords. Portable, electric space heaters shall not be plugged into extension cords.

605.10.4 Prohibited areas. Portable, electric space heaters shall not be operated within 3 feet (914 mm) of any combustible materials. Portable, electric space heaters shall be operated only in locations for which they are *listed*.

605.11 Solar photovoltaic power systems. Solar photovoltaic power systems shall

be installed~~maintained~~ in accordance with Sections 605.11.1 through 605.11.2, the ~~International~~Uniform Statewide Building Code or ~~International Residential Code~~, and NFPA 70.

605.11.1 Access and pathways. Roof access, pathways, and spacing requirements shall be provided~~maintained~~ in accordance with Sections ~~605.11.1.1 through 605.11.1.3.3.~~

Exceptions:

1. ~~Detached, nonhabitable Group U structures including, but not limited to, parking shade structures, carports, solar trellises and similar structures.~~
2. ~~Roof access, pathways and spacing requirements need not be provided where the fire chief has determined that rooftop operations will not be employed.~~

the Uniform Statewide Building Code.

605.11.1.1 Roof access points. Roof access points shall be located in areas that do not require the placement of ground ladders over openings such as windows or doors, and located at strong points of building construction in locations where the access point does not conflict with overhead obstructions such as tree limbs, wires or signs.

~~**605.11.1.2 Solar photovoltaic systems for Group R-3 buildings.** Solar photovoltaic systems for Group R-3 buildings shall comply with Sections 605.11.1.2.1 through 605.11.1.2.5.~~

~~**Exception:** These requirements shall not apply to structures designed and constructed in accordance with the *International Residential Code*.~~

~~**605.11.1.2.1 Size of solar photovoltaic array.** Each photovoltaic array shall be limited to 150 feet (45 720 mm) by 150 feet (45 720 mm). Multiple arrays shall be separated by a 3 foot wide (914 mm) clear access pathway.~~

~~**605.11.1.2.2 Hip roof layouts.** Panels and modules installed on Group R-3 buildings with hip roof layouts shall be located in a manner that provides a 3 foot wide (914 mm) clear access pathway from the eave to the ridge on each roof slope where panels and modules are located. The access pathway shall be at a location on the building capable of supporting the fire fighters accessing the roof.~~

~~**Exception:** These requirements shall not apply to roofs with slopes of two units vertical in 12 units horizontal (2:12) or less.~~

~~**605.11.1.2.3 Single ridge roofs.** Panels and modules installed on Group R-3 buildings with a single ridge shall be located in a manner that provides two, 3 foot wide~~

~~(914 mm) access pathways from the eave to the ridge on each roof slope where panels and modules are located.~~

Exception: ~~This requirement shall not apply to roofs with slopes of two units vertical in 12 units horizontal (2:12) or less.~~

605.11.1.2.4 Roofs with hips and valleys. ~~Panels and modules installed on Group R-3 buildings with roof hips and valleys shall not be located closer than 18 inches (457 mm) to a hip or a valley where panels/modules are to be placed on both sides of a hip or valley. Where panels are to be located on only one side of a hip or valley that is of equal length, the panels shall be permitted to be placed directly adjacent to the hip or valley.~~

Exception: ~~These requirements shall not apply to roofs with slopes of two units vertical in 12 units horizontal (2:12) or less.~~

605.11.1.2.5 Allowance for smoke ventilation operations. ~~Panels and modules installed on Group R-3 buildings shall be located not less than 3 feet (914 mm) from the ridge in order to allow for fire department smoke ventilation operations.~~

Exception: ~~Panels and modules shall be permitted to be located up to the roof ridge where an alternative ventilation method approved by the fire chief has been provided or where the fire chief has determined vertical ventilation techniques will not be employed.~~

605.11.1.3 Other than Group R-3 buildings. ~~Access to systems for buildings, other than those containing Group R-3 occupancies, shall be provided in accordance with Sections 605.11.1.3.1 through 605.11.1.3.3.~~

Exception: ~~Where it is determined by the fire code official that the roof configuration is similar to that of a Group R-3 occupancy, the residential access and ventilation requirements in Sections 605.11.1.2.1 through 605.11.1.2.5 shall be permitted to be used.~~

605.11.1.3.1 Access. ~~There shall be a minimum 6-foot-wide (1829 mm) clear perimeter around the edges of the roof.~~

Exception: ~~Where either axis of the building is 250 feet (76 200 mm) or less, the clear perimeter around the edges of the roof shall be permitted to be reduced to a minimum 4-foot-wide (1290 mm).~~

605.11.1.3.2 Pathways. ~~The solar installation shall be designed to provide designated pathways. The pathways shall meet the following requirements:~~

1. ~~The pathway shall be over areas capable of supporting fire fighters accessing the roof.~~
2. ~~The centerline axis pathways shall be provided in both axes of the roof. Centerline axis pathways shall run where the roof structure is capable of supporting fire fighters accessing the roof.~~
3. ~~Pathways shall be a straight line not less than 4 feet (1290 mm) clear to roof standpipes or ventilation hatches.~~
4. ~~Pathways shall provide not less than 4 feet (1290 mm) clear around roof access hatch with not less than one singular pathway not less than 4 feet (1290 mm) clear to a parapet or roof edge.~~

~~605.11.1.3.3 Smoke ventilation.~~ ~~The solar installation shall be designed to meet the following requirements:~~

1. ~~Arrays shall be not greater than 150 feet (45 720 mm) by 150 feet (45 720 mm) in distance in either axis in order to create opportunities for fire department smoke ventilation operations.~~
2. ~~Smoke ventilation options between array sections shall be one of the following:~~
 - 2.1. ~~A pathway 8 feet (2438 mm) or greater in width.~~
 - 2.2. ~~A 4 foot (1290 mm) or greater in width pathway and bordering roof skylights or gravity operated dropout smoke and heat vents on not less than one side.~~
 - 2.3. ~~A 4 foot (1290 mm) or greater in width pathway and bordering all sides of nongravity operated dropout smoke and heat vents.~~
 - 2.4. ~~A 4 foot (1290 mm) or greater in width pathway and bordering 4-foot by 8 foot (1290 mm by 2438 mm) "venting cutouts" every 20 feet (6096 mm) on alternating sides of the pathway.~~

~~605.11.2 Ground-mounted photovoltaic arrays.~~ ~~Ground-mounted photovoltaic arrays shall comply with Section 605.11 and this section. Setback requirements shall not apply to ground-mounted, free-standing photovoltaic arrays.~~

~~A clear, brush-free area of 10 feet (3048 mm) shall be required~~maintained ~~for ground-mounted photovoltaic arrays.~~

605.12 Abandoned wiring in plenums. Accessible portions of abandoned cables in air-handling plenums shall be removed. Cables that are unused and have not been tagged for future use shall be considered abandoned.

SECTION 606 MECHANICAL REFRIGERATION

[M] 606.1 Scope. Refrigeration systems shall be ~~installed~~maintained in accordance with the *International Mechanical*Uniform Statewide Building Code.

[M] 606.2 Refrigerants. The use and purity of new, recovered and reclaimed

refrigerants shall be in accordance with the *International Mechanical Code*.

[M] 606.3 Refrigerant classification. Refrigerants shall be classified in accordance with the *International Mechanical Code*.

[M] 606.4 Change in refrigerant type. A change in the type of refrigerant in a refrigeration system shall be in accordance with the *International Mechanical Code*.

606.5 Access. Refrigeration systems having a refrigerant circuit containing more than 220 pounds (100 kg) of Group A1 or 30 pounds (14 kg) of any other group refrigerant shall be accessible to the fire department at all times as required by the *fire code official*.

606.6 Testing of equipment. Refrigeration equipment and systems having a refrigerant circuit containing more than 220 pounds (100 kg) of Group A1 or 30 pounds (14 kg) of any other group refrigerant shall be subject to periodic testing in accordance with Section 606.6.1. Records of tests shall be maintained. Tests of emergency devices or systems required by ~~this chapter~~ the Uniform Statewide Building Code shall be conducted by persons trained and qualified in refrigeration systems.

606.6.1 Periodic testing. The following emergency devices or systems shall be periodically tested in accordance with the manufacturer's instructions and as required by the *fire code official*.

1. Treatment and flaring systems.
2. Valves and appurtenances necessary to the operation of emergency refrigeration control boxes.
3. Fans and associated equipment intended to operate emergency ventilation systems.
4. Detection and alarm systems.

606.7 Emergency signs. Refrigeration units or systems having a refrigerant circuit containing more than 220 pounds (100 kg) of Group A1 or 30 pounds (14 kg) of any other group refrigerant shall be provided with *approved* emergency signs, charts and labels in accordance with NFPA 704. Hazard signs shall be in accordance with the *International Mechanical Code* for the classification of refrigerants listed therein.

606.8 Refrigerant ~~detector~~ detection. Refrigerant detection systems required by the Uniform Statewide Building Code shall be maintained and monitored as required by that code.

Machinery rooms ~~shall contain~~ containing a refrigerant detector with an audible and visual alarm. The detector, or a sampling tube that draws air to the detector, shall be located in an area where refrigerant from a leak will concentrate. The alarm shall be actuated at a value not greater than the corresponding TLV-TWA values ~~shown in the International Mechanical Code~~ for the refrigerant classification those agents. Detectors

and alarms shall be placed in *approved* locations. The detector shall transmit a signal to an *approved* location.

606.9 Remote controls. ~~Where flammable refrigerants are used Remote controls required by the Uniform Statewide Building Code shall be maintained and compliance with Section 1106 of the *International Mechanical Code* is required, remote control of the mechanical equipment and appliances located in the machinery room accessible at all times as required by Sections 606.9.1 and 606.9.2 shall be provided at an approved location immediately outside the machinery room and adjacent to its principal entrance. that code.~~

606.9.1 Refrigeration system emergency shutoff. A

~~Emergency shutoffs shall be clearly identified switch of and maintained in accordance with the break-glass type or with an approved tamper resistant cover shall provide off-only control of refrigerant compressors, refrigerant pumps Uniform Statewide Building Code and normally closed automatic refrigerant valves located in the machinery room. Additionally, this equipment shall be automatically shut off when the refrigerant vapor concentration in the machinery room exceeds the vapor detector's upper detection limit or 25 percent of the LEL, whichever is lower. accessible at all times.~~

606.9.2 Ventilation system. A

~~Ventilation system switches shall be clearly identified switch of the break-glass type or within an approved tamper resistant cover shall provide on-only control of the machinery room ventilation fans manner.~~

606.10 Emergency pressure control system. Permanently installed refrigeration systems containing more than 6.6 pounds (3 kg) of flammable, toxic or highly toxic refrigerant or ammonia shall be ~~provided with an emergency pressure control system~~ maintained in accordance with ~~Sections 606.10.1~~ the Uniform Statewide Building Code and ~~606.10.2~~ this code.

606.10.1 Automatic crossover valves. ~~Each high and intermediate pressure zone in a refrigeration system~~

~~Automatic crossover valves shall be provided~~ maintained as installed in accordance with a single automatic valve providing a crossover connection to a lower pressure zone. Automatic crossover valves shall comply with Sections 606.10.1.1 through 606.10.1.3. the Uniform Statewide Building Code.

606.10.1.1 Overpressure limit set point. Automatic crossover valves shall be arranged to automatically relieve excess system pressure to a lower pressure zone if the pressure in a high- or intermediate-pressure zone rises to within 90 percent of the set point for emergency pressure relief devices.

606.10.1.2 Manual operation. Where required by the *fire code official*, automatic

crossover valves shall be capable of manual operation.

~~**606.10.1.3 System design pressure.** Refrigeration system zones that are connected to a higher pressure zone by an automatic crossover valve shall be designed to safely contain the maximum pressure that can be achieved by interconnection of the two zones.~~

606.10.2 Automatic emergency stop. An automatic emergency stop feature shall be provided in accordance with Sections 606.10.2.1 and 606.10.2.2.

606.10.2.1 Operation of an automatic crossover valve. Operation of an automatic crossover valve shall cause all compressors on the affected system to immediately stop. Dedicated pressure-sensing devices located immediately adjacent to crossover valves shall be permitted as a means for determining operation of a valve. To ensure that the automatic crossover valve system provides a redundant means of stopping compressors in an overpressure condition, high-pressure cutout sensors associated with compressors shall not be used as a basis for determining operation of a crossover valve.

606.10.2.2 Overpressure in low-pressure zone. The lowest pressure zone in a refrigeration system shall be provided with a dedicated means of determining a rise in system pressure to within 90 percent of the set point for emergency pressure relief devices. Activation of the overpressure sensing device shall cause all compressors on the affected system to immediately stop.

606.11 Storage, use and handling. Flammable and combustible materials shall not be stored in machinery rooms for refrigeration systems having a refrigerant circuit containing more than 220 pounds (100 kg) of Group A1 or 30 pounds (14 kg) of any other group refrigerant. Storage, use or handling of extra refrigerant or refrigerant oils shall be as required by Chapters 50, 53, 55 and 57.

- **Exception:** This provision shall not apply to spare parts, tools and incidental materials necessary for the safe and proper operation and maintenance of the system.

606.12 Discharge and termination of pressure relief and purge systems. Pressure relief devices, fusible plugs and purge systems discharging to the atmosphere from refrigeration systems containing flammable, toxic or highly toxic refrigerants or ammonia shall comply be maintained in accordance with Sections 606.12.3 through 606.12.5.

~~**606.12.1 Standards.** Refrigeration systems and the buildings in which such systems are installed shall be in accordance with ASHRAE 15.~~

606.12.1.1 Ammonia refrigeration. Refrigeration systems using ammonia refrigerant and the buildings in which such systems are installed shall comply with ~~IIAR-2~~ for system design and installation and IIAR-7 for operating procedures.

606.12.2 Fusible plugs and rupture members. Discharge piping and devices connected to the discharge side of a fusible plug or rupture member shall have provisions to prevent plugging the pipe in the event the fusible plug or rupture member functions.

606.12.3 Flammable refrigerants. Systems containing more than 6.6 pounds (3 kg) of flammable refrigerants having a density equal to or greater than the density of air shall discharge vapor to the atmosphere only through an *approved* treatment system in accordance with Section 606.12.6 or a flaring system in accordance with Section 606.12.7. Systems containing more than 6.6 pounds (3 kg) of flammable refrigerants having a density less than the density of air shall be permitted to discharge vapor to the atmosphere provided that the point of discharge is located outside of the structure at not less than 15 feet (4572 mm) above the adjoining grade level and not less than 20 feet (6096 mm) from any window, ventilation opening or *exit*.

606.12.4 Toxic and highly toxic refrigerants. Systems containing more than 6.6 pounds (3 kg) of toxic or highly toxic refrigerants shall discharge vapor to the atmosphere only through an *approved* treatment system in accordance with Section 606.12.6 or a flaring system in accordance with Section 606.12.7.

606.12.5 Ammonia refrigerant. Systems containing more than 6.6 pounds (3 kg) of ammonia refrigerant shall discharge vapor to the atmosphere in accordance with one of the following methods:

1. Directly to atmosphere where the *fire code official* determines, on review of an engineering analysis prepared in accordance with Section 104.7.2, that a fire, health or environmental hazard would not result from atmospheric discharge of ammonia.
 2. Through an *approved* treatment system in accordance with Section 606.12.6.
 3. Through a flaring system in accordance with Section 606.12.7.
 4. Through an *approved* ammonia diffusion system in accordance with Section 606.12.8.
 5. By other *approved* means.
- **Exception:** Ammonia/water absorption systems containing less than 22 pounds (10 kg) of ammonia and for which the ammonia circuit is located entirely outdoors.

606.12.6 Treatment systems. Treatment systems shall ~~be designed to~~ reduce the allowable discharge concentration of the refrigerant gas to not more than 50 percent of the IDLH at the point of exhaust. Treatment systems shall be in accordance with Chapter 60.

606.12.7 Flaring systems. Flaring systems for incineration of flammable refrigerants shall be designed to incinerate the entire discharge. The products of refrigerant incineration shall not pose health or environmental hazards. Incineration shall be automatic upon initiation of discharge, shall be designed to prevent blowback and shall not expose structures or materials to threat of fire. Standby fuel, such as LP-gas, and standby power shall have the capacity to operate for one and one-half the required time for complete incineration of refrigerant in the system. Standby electrical power, where required to complete the incineration process, shall be in accordance with Section 604.

606.12.8 Ammonia diffusion systems. Ammonia diffusion systems shall include a tank containing 1 gallon of water for each pound of ammonia (8.3 L of water for each 1 kg of ammonia) that will be released in 1 hour from the largest relief device connected to the discharge pipe. The water shall be prevented from freezing. The discharge pipe from the pressure relief device shall distribute ammonia in the bottom of the tank, but not lower than 33 feet (10 058 mm) below the maximum liquid level. The tank shall contain the volume of water and ammonia without overflowing.

606.13 Discharge location for refrigeration machinery room

ventilation. Exhaust from mechanical ventilation systems serving refrigeration machinery rooms containing flammable, toxic or highly toxic refrigerants, other than ammonia, capable of exceeding 25 percent of the LFL or 50 percent of the IDLH shall be equipped with *approved* treatment systems to reduce the discharge concentrations to those values or lower.

606.14 Notification of refrigerant discharges. The *fire code official* shall be notified immediately when a discharge becomes reportable under state, federal or local regulations in accordance with Section 5003.3.1.

606.15 Records. A record of refrigerant quantities brought into and removed from the premises shall be maintained.

606.16 Electrical equipment. Where refrigerants of Groups A2, A3, B2 and B3, as defined in the *International Mechanical Code*, are used, refrigeration machinery rooms shall conform to the Class I, Division 2 hazardous location classification requirements of NFPA 70.

- **Exception:** Ammonia machinery rooms that are provided with ventilation in accordance with Section 1106.3 of the *International Mechanical Code*.

SECTION 607 ELEVATOR OPERATION, MAINTENANCE AND FIRE SERVICE KEYS

607.1 Emergency operation. Existing elevators with a travel distance Emergency functions and operations of 25 feet (7620 mm) or more shall comply with

~~the requirements in Chapter 11. New elevators shall be provided with Phase I emergency recall operation and Phase II emergency in-car operation maintained as approved in accordance with ASME A17.1.~~ the Uniform Statewide Building Code.

607.2 Standby power. In buildings and structures where standby power is required or furnished to operate an elevator, standby power shall be ~~provided~~ maintained in accordance with Section 604. Operation of the system shall be in accordance with Sections 607.2.1 through 607.2.4.

607.2.1 Manual transfer. Standby power shall be manually transferable to all elevators in each bank.

607.2.2 One elevator. Where only one elevator is installed, the elevator shall automatically transfer to standby power within 60 seconds after failure of normal power.

607.2.3 Two or more elevators. Where two or more elevators are controlled by a common operating system, all elevators shall automatically transfer to standby power within 60 seconds after failure of normal power where the standby power source is of sufficient capacity to operate all elevators at the same time. Where the standby power source is not of sufficient capacity to operate all elevators at the same time, all elevators shall transfer to standby power in sequence, return to the designated landing and disconnect from the standby power source. After all elevators have been returned to the designated level, not less than one elevator shall remain operable from the standby power source.

607.2.4 Machine room ventilation. Where standby power is connected to elevators, the machine room ventilation or air conditioning shall ~~be remain~~ connected to the standby power source in accordance with the Uniform Statewide Building Code.

[BE] 607.3 Emergency signs. An *approved* pictorial sign of a standardized design shall be posted adjacent to each elevator call station on all floors instructing occupants to use the exit stairways and not to use the elevators in case of fire. The sign shall read: IN FIRE EMERGENCY, DO NOT USE ELEVATOR. USE EXIT STAIRS.

- **Exceptions:**

1. The emergency sign shall not be required for elevators that are part of an accessible *means of egress* complying with Section 1009.4.
2. The emergency sign shall not be required for elevators that are used for occupant self-evacuation in accordance with Section 3008 of the *International Building Code*.

607.4 Fire service access elevator lobbies. Where fire service access elevators are required by ~~Section 3007 of the International~~ Uniform Statewide Building Code, fire service access elevator lobbies shall be maintained free of storage and furniture.

607.5 Occupant evacuation elevator lobbies. Where occupant evacuation elevators are provided in accordance with ~~Section 3008 of the International Building Code~~, occupant evacuation elevator lobbies shall be maintained free of storage and furniture.

607.6 Water protection of hoistway enclosures. Methods to prevent water from infiltrating into a hoistway enclosure required by ~~Section 3007.4 and Section 3008.4 of the International Building Code~~ shall be maintained.

607.7 Elevator key location. Keys for the elevator car doors and fire-fighter service keys shall be kept in an *approved* location for immediate use by the fire department.

607.8 Standardized fire service elevator keys. Buildings with elevators equipped with Phase I emergency recall, Phase II emergency in-car operation, or a fire service access elevator shall be equipped to operate with a standardized fire service elevator key approved by the *fire code official*.

- **Exception:** The owner shall be permitted to place the building's nonstandardized fire service elevator keys in a key box installed in accordance with Section 506.1.2.

607.8.1 Requirements for standardized fire service elevator keys. Standardized fire service elevator keys shall comply with all of the following:

1. All fire service elevator keys within the jurisdiction shall be uniform and specific for the jurisdiction. Keys shall be cut to a uniform key code.
2. Fire service elevator keys shall be of a patent-protected design to prevent unauthorized duplication.
3. Fire service elevator keys shall be factory restricted by the manufacturer to prevent the unauthorized distribution of key blanks. Uncut key blanks shall not be permitted to leave the factory.
4. Fire service elevator keys subject to these rules shall be engraved with the words "DO NOT DUPLICATE."

607.8.2 Access to standardized fire service keys. Access to standardized fire service elevator keys shall be restricted to the following:

1. Elevator owners or their authorized agents.
2. Elevator contractors.
3. Elevator inspectors of the jurisdiction.
4. *Fire code officials* of the jurisdiction.
5. The fire department and other emergency response agencies designated by the *fire code official*.

607.8.3 Duplication or distribution of keys. A person shall not duplicate a standardized fire service elevator key or issue, give, or sell a duplicated key unless in accordance with this code.

607.8.4 Responsibility to provide keys. The building owner shall provide up to three standardized fire service elevator keys where required by the *fire code official*, upon installation of a standardized fire service key switch or switches in the building.

SECTION 608 STATIONARY STORAGE BATTERY SYSTEMS

608.1 Scope. Stationary storage battery systems having an electrolyte capacity of more than 50 gallons (189 L) for flooded lead-acid, nickel cadmium (Ni-Cd) and valve-regulated lead-acid (VRLA), or more than 1,000 pounds (454 kg) for lithium-ion and lithium metal polymer, used for facility standby power, emergency power or uninterruptible power supplies shall comply with this section and Table 608.1 when required by the Uniform Statewide Building Code.

**TABLE 608.1
BATTERY REQUIREMENTS**

REQUIREMENT	NONRECOMBINANT BATTERIES		RECOMBINANT BATTERIES		OTHER BATTERIES
	Vented (Flooded) Lead Acid Batteries	Vented (Flooded) Nickel-Cadmium (Ni-Cd) Batteries	Valve Regulated Lead-Acid (VRLA) Cells	Lithium-Ion Cells	Lithium Metal Cells
Safety caps	Venting caps (608.2.1)	Venting caps (608.2.1)	Self-resealing flame-arresting caps (608.2.2)	No caps	No caps
Thermal runaway management	Not required	Not required	Required (608.3)	Not required	Required (608.3)
	Required	Required	Not	Not	

Spill control	(608.5)	(608.5)	required	required	Not required
Neutralization	Required (608.5.1)	Required (608.5.1)	Required (608.5.2)	Not required	Not required
Ventilation	Required (608.6.1; 608.6.2)	Required (608.6.1; 608.6.2)	Required (608.6.1; 608.6.2)	Not required	Not required
Signage	Required (608.7)	Required (608.7)	Required (608.7)	Required (608.7)	Required (608.7)
Seismic protection	Required (608.8)	Required (608.8)	Required (608.8)	Required (608.8)	Required (608.8)
Smoke detection	Required (608.9)	Required (608.9)	Required (608.9)	Required (608.9)	Required (608.9)

608.2 Safety caps. Safety caps for stationary storage battery systems shall comply with Sections 608.2.1 and 608.2.2.

608.2.1 Nonrecombinant batteries. Vented lead-acid, nickel-cadmium or other types of nonrecombinant batteries shall be provided with safety venting caps.

608.2.2 Recombinant batteries. VRLA batteries shall be equipped with self-resealing flame-arresting safety vents.

608.3 Thermal runaway. VRLA and lithium metal polymer battery systems shall be provided with a *listed* device or other *approved* method to preclude, detect and control thermal runaway.

608.4 Room design and construction. Enclosure of stationary battery systems shall comply with the ~~International~~ *Uniform Statewide Building Code*. *Battery systems shall be allowed to be in the same room with the equipment they support.*

608.4.1 Separate rooms. Where stationary batteries are installed in a separate equipment room accessible only to authorized personnel, they shall be permitted to be installed on an open rack for ease of maintenance.

608.4.2 Occupied work centers. Where a system of VRLA, lithium-ion, or other type of sealed, nonventing batteries is situated in an occupied work center, it shall be allowed

to be housed in a noncombustible cabinet or other enclosure to prevent access by unauthorized personnel.

608.4.3 Cabinets. Where stationary batteries are contained in cabinets in occupied work centers, the cabinet enclosures shall be located within 10 feet (3048 mm) of the equipment that they support.

608.5 Spill control and neutralization. An *approved* method and materials for the control and neutralization of a spill of electrolyte shall be provided in areas containing lead-acid, nickel-cadmium or other types of batteries with free-flowing liquid electrolyte. For purposes of this paragraph, a "spill" is defined as any unintentional release of electrolyte.

- **Exception:** VRLA, lithium-ion, lithium metal polymer or other types of sealed batteries with immobilized electrolyte shall not require spill control.

608.5.1 Nonrecombinant battery neutralization. For battery systems containing lead acid, nickel cadmium or other types of batteries with free-flowing electrolyte, the method and materials shall be capable of neutralizing a spill of the total capacity from the largest cell or block to a pH between 5.0 and 9.0.

608.5.2 Recombinant battery neutralization. For VRLA or other types of batteries with immobilized electrolyte, the method and material shall be capable of neutralizing a spill of 3.0 percent of the capacity of the largest cell or block in the room to a pH between 5.0 and 9.0.

- **Exception:** Lithium-ion and lithium metal polymer batteries shall not require neutralization.

608.6 Ventilation. Ventilation of stationary storage battery systems shall comply with Sections 608.6.1 and 608.6.2.

608.6.1 Room ventilation. Ventilation shall be ~~provided~~maintained in accordance with the ~~International Mechanical Code~~Uniform Statewide Building Code and the following:

1. For flooded lead-acid, flooded Ni-Cd and VRLA batteries, the ventilation system shall ~~be designed to~~ limit the maximum concentration of hydrogen to 1.0 percent of the total volume of the room; or
2. Continuous ventilation shall be provided at a rate of not less than 1 cubic foot per minute per square foot ($1 \text{ ft}^3/\text{min}/\text{ft}^2$) [$0.0051 \text{ m}^3/\text{s} \cdot \text{m}^2$] of floor area of the room.
 - **Exception:** Lithium-ion and lithium metal polymer batteries shall not require additional ventilation beyond that which would normally be required for human occupancy of the space in accordance with the ~~International Mechanical Code~~Uniform Statewide Building Code.

608.6.2 Cabinet ventilation. Where VRLA batteries are installed inside a cabinet, the cabinet shall be *approved* for use in occupied spaces and shall be mechanically or naturally vented ~~by one of~~ in accordance with the following methods:

- ~~1. The cabinet ventilation shall limit the maximum concentration of hydrogen to 1 percent of the total volume of the cabinet during the worst case event of simultaneous "boost" charging of all the batteries in the cabinet.~~
- ~~2. Where calculations are not available to substantiate the ventilation rate, continuous ventilation shall be provided at a rate of not less than 1 cubic foot per minute per square foot [$1 \text{ ft}^3/\text{min}/\text{ft}^2$ or $0.0051 \text{ m}^3/(\text{s} \cdot \text{m}^2)$] of floor area covered by the cabinet. The room in which the cabinet is installed shall be ventilated as required in Section 608.6.1.~~

Uniform Statewide Building Code.

608.6.3 Supervision. Mechanical ventilation systems where required by Sections 608.6.1 and 608.6.2 shall be supervised by an *approved* central, proprietary or remote station service or shall initiate an audible and visual signal at a constantly attended on-site location when required by the Uniform Statewide Building Code.

608.7 Signage. Signs shall comply with Sections 608.7.1 and 608.7.2.

608.7.1 Equipment room and building signage. Doors into electrical equipment rooms or buildings containing stationary battery systems shall be provided with *approved* signs. The signs shall state that:

1. The room contains energized battery systems.
2. The room contains energized electrical circuits.
3. The battery electrolyte solutions, where present, are *corrosive* liquids.

608.7.2 Cabinet signage. Cabinets shall have exterior labels that identify the manufacturer and model number of the system and electrical rating (voltage and current) of the contained battery system. There shall be signs within the cabinet that indicate the relevant electrical, chemical and fire hazards.

608.8 Seismic protection. ~~The battery~~
Seismic bracing systems shall be ~~seismically braced in accordance with the~~
International Building Code maintained.

608.9 Smoke detection. ~~An approved automatic~~
Automatic smoke detection system shall be ~~installed~~ maintained in accordance with ~~Section 907.2 Chapter 9~~ in rooms containing stationary battery systems.

SECTION 609 COMMERCIAL KITCHEN HOODS

[M] 609.1 General. Commercial kitchen exhaust hoods shall comply with the requirements of the Uniform Statewide Building Code or the *International Mechanical Code* in locations not regulated by the Uniform Statewide Building Code.

[M] 609.2 Where required. A Type I hood shall be installed at or above all commercial cooking appliances and domestic cooking appliances used for commercial purposes that produce grease vapors.

- **Exceptions:**
- **Exception:1.** A Type I hood shall not be required for an electric cooking appliance where an approved testing agency provides documentation that the appliance effluent contains 5 mg/m³ or less of grease when tested at an exhaust flow rate of 500 cfm (0.236 m³/s) in accordance with UL 710B.
- **2.** This code shall not require the installation of a Type I hood in buildings and structures regulated by the Uniform Statewide Building Code unless a violation is created due to changes in cooking media or processes which would have otherwise required the installation of a Type I hood when the building was constructed.

609.3 Operations and maintenance. Commercial cooking systems shall be operated and maintained in accordance with Sections 609.3.1 through 609.3.4.

609.3.1 Ventilation system. The ventilation system in connection with hoods shall be operated at the required rate of air movement, and classified grease filters shall be in place when equipment under a kitchen grease hood is used.

609.3.2 Grease extractors. Where grease extractors are installed, they shall be operated when the commercial-type cooking equipment is used.

609.3.3 Cleaning. Hoods, grease-removal devices, fans, ducts and other appurtenances shall be cleaned at intervals as required by Sections 609.3.3.1 through 609.3.3.3.

609.3.3.1 Inspection. Hoods, grease-removal devices, fans, ducts and other appurtenances shall be inspected at intervals specified in Table 609.3.3.1 or as *approved* by the *fire code official*. Inspections shall be completed by qualified individuals.

**TABLE 609.3.3.1
COMMERCIAL COOKING SYSTEM INSPECTION FREQUENCY**

	FREQUENCY OF
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TYPE OF COOKING OPERATIONS	INSPECTION
High-volume cooking operations such as 24-hour cooking, charbroiling or wok cooking	3 months
Low-volume cooking operations such as places of religious worship, seasonal businesses and senior centers	12 months
Cooking operations utilizing solid fuel-burning cooking appliances	1 month
All other cooking operations	6 months

609.3.3.2 Grease accumulation. If during the inspection it is found that hoods, grease-removal devices, fans, ducts or other appurtenances have an accumulation of grease, such components shall be cleaned in accordance with ANSI/IKECA C 10.

609.3.3.3 Records. Records for inspections shall state the individual and company performing the inspection, a description of the inspection and when the inspection took place. Records for cleanings shall state the individual and company performing the cleaning and when the cleaning took place. Such records shall be completed after each inspection or cleaning and maintained.

609.3.3.3.1 Tags. When a commercial kitchen hood or duct system is inspected, a tag containing the service provider name, address, telephone number and date of service shall be provided in a conspicuous location. Prior tags shall be covered or removed.

609.3.4 Extinguishing system service. Automatic fire-extinguishing systems protecting commercial cooking systems shall be serviced as required in Section 904.12.6.

609.4 Appliance connection to building piping. Gas-fired commercial cooking appliances installed on casters and appliances that are moved for cleaning and sanitation purposes shall be connected to the piping system with an appliance connector listed as complying with ANSI Z21.69. The commercial cooking appliance connector installation shall be configured in accordance with the manufacturer's installation instructions. Movement of appliances with casters shall be limited by a restraining device installed in accordance with the connector and appliance manufacturer's instructions.

SECTION 610 COMMERCIAL KITCHEN COOKING OIL STORAGE

610.1 General. Storage of cooking oil (grease) in commercial cooking operations utilizing above-ground tanks with a capacity greater than 60 gal (227 L) installed within a building shall comply with Sections 610.2 through 610.7 and NFPA 30. For purposes of this section, cooking oil shall be classified as a Class IIIB liquid unless otherwise determined by testing.

610.2 Metallic storage tanks. Metallic cooking oil storage tanks shall be listed in accordance with UL 142 or UL 80, and shall be installed in accordance with the tank manufacturer's instructions.

610.3 Nonmetallic storage tanks. Nonmetallic cooking oil storage tanks shall be installed in accordance with the tank manufacturer's instructions and shall also comply with all of the following:

1. Tanks shall be listed for use with cooking oil, including maximum temperature to which the tank will be exposed during use.
2. Tank capacity shall not exceed 200 gallons (757 L) per tank.

610.4 Cooking oil storage system components. Cooking oil storage system components shall include but are not limited to piping, connections, fittings, valves, tubing, hose, pumps, vents and other related components used for the transfer of cooking oil, and are permitted to be of either metallic or nonmetallic construction.

610.4.1 Design standards. The design, fabrication and assembly of system components shall be suitable for the working pressures, temperatures and structural stresses to be encountered by the components.

610.4.2 Components in contact with heated oil. System components that come in contact with heated cooking oil shall be rated for the maximum operating temperatures expected in the system.

610.5 Tank venting. Normal and emergency venting shall be provided for cooking oil storage tanks.

610.5.1 Normal vents. Normal vents shall be located above the maximum normal liquid line, and shall have a minimum effective area not smaller than the largest filling or withdrawal connection. Normal vents shall be permitted to vent inside the building.

610.5.2 Emergency vents. Emergency relief vents shall be located above the maximum normal liquid line, and shall be in the form of a device or devices that will

relieve excessive internal pressure caused by an exposure fire. For nonmetallic tanks, the emergency relief vent shall be allowed to be in the form of construction. Emergency vents shall be permitted to vent inside the building.

610.6 Heating of cooking oil. Electrical equipment used for heating cooking oil in cooking oil storage systems shall be listed to UL 499 and shall comply with NFPA 70. Use of electrical immersion heaters shall be prohibited in nonmetallic tanks.

610.7 Electrical equipment. Electrical equipment used for the operation of cooking oil storage systems shall comply with NFPA 70.

SECTION 611 HYPERBARIC FACILITIES

611.1 General. Hyperbaric facilities shall be inspected, tested and maintained in accordance with NFPA 99.

611.2 Records. Records shall be maintained of all testing and repair conducted on the hyperbaric chamber and associated devices and equipment. Records shall be available to the *fire code official*.

CHAPTER 6 BUILDING SERVICES AND SYSTEMS

Workgroup Recommendation

None

Board Decision

None

701, 701.1, 701.2, 702, 702.1, 703, 703.1, 703.1.1, 703.1.2, 703.1.3, 703.2, 703.2.1, 703.2.2, 703.2.3, 703.3, 703.4, 704, 704.1, 704.2

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BOOK PART III—Building and Equipment Design Features SECTION 701 GENERAL

701.1 Scope. The provisions of this chapter shall govern maintenance of the materials, systems and assemblies used for structural fire resistance and fire-resistance-rated construction separation of adjacent spaces to safeguard against the spread of fire and smoke within a building and the spread of fire to or from buildings. ~~New buildings shall comply with the *International Building Code*.~~

701.2 Unsafe conditions. Where any components in this chapter are not maintained and do not function as intended or do not have the *fire resistance* required by the code under which the building was constructed, remodeled or altered, such component(s) or portion thereof shall be deemed an unsafe condition, in accordance with Section 110.1.1. Components or portions thereof determined to be unsafe shall be repaired or replaced to conform to that code under which the building was constructed, remodeled, altered or this chapter, as deemed appropriate by the *fire code official*.

Where the extent of the conditions of components is such that any building, structure or portion thereof presents an imminent danger to the occupants of the building, structure or portion thereof, the *fire code official* shall act in accordance with Section ~~110.2.110.5~~

SECTION 702 DEFINITIONS

702.1 Definitions. The following terms are defined in Chapter 2:

DRAFTSTOP.

FIRE-RESISTANT JOINT SYSTEM.

FIREBLOCKING.

SECTION 703 FIRE-RESISTANCE-RATED CONSTRUCTION

703.1 Maintenance. The required *fire-resistance rating* of fire-resistance-rated construction, including, but not limited to, walls, firestops, shaft enclosures, partitions, *smoke barriers*, floors, fire-resistive coatings and sprayed fire-resistant materials applied to structural members and fire-resistant joint systems, shall be maintained. Such elements shall be visually inspected by the *owner* annually and properly repaired, restored or replaced where damaged, altered, breached or penetrated. Records of inspections and repairs shall be maintained. Where concealed, such elements shall not be required to be visually inspected by the *owner* unless the concealed space is

accessible by the removal or movement of a panel, access door, ceiling tile or similar movable entry to the space. Openings made therein for the passage of pipes, electrical conduit, wires, ducts, air transfer openings and holes made for any reason shall be protected with *approved* methods capable of resisting the passage of smoke and fire. Openings through fire-resistance-rated assemblies shall be protected by self- or automatic-closing doors of *approved* construction meeting the fire protection requirements for the assembly.

703.1.1 Fireblocking and draftstopping. Required *fire-blocking* and draftstopping in combustible concealed spaces shall be maintained to provide continuity and integrity of the construction.

703.1.2 Smoke barriers and smoke partitions. Required *smoke barriers* and smoke partitions shall be maintained to prevent the passage of smoke. Openings protected with *approved* smoke barrier doors or smoke dampers shall be maintained in accordance with NFPA 105.

703.1.3 Fire walls, fire barriers and fire partitions. Required *fire walls*, *fire barriers* and *fire partitions* shall be maintained to prevent the passage of fire. Openings protected with *approved* doors or fire dampers shall be maintained in accordance with NFPA 80.

703.2 Opening protectives. Opening protectives shall be maintained in an operative condition in accordance with NFPA 80. Where allowed by the *fire code official*, the application of field-applied labels associated with the maintenance of opening protectives shall follow the requirements of the *approved* third-party certification organization accredited for *listing* the opening protective. Fire doors and *smoke barrier* doors shall not be blocked or obstructed, or otherwise made inoperable. Fusible links shall be replaced promptly whenever fused or damaged. Fire door assemblies shall not be modified.

703.2.1 Signs. Where required by the *fire code official*, a sign shall be permanently displayed on or near each fire door in letters not less than 1 inch (25 mm) high to read as follows:

1. For doors designed to be kept normally open: FIRE DOOR—DO NOT BLOCK.
2. For doors designed to be kept normally closed: FIRE DOOR—KEEP CLOSED.

703.2.2 Hold-open devices and closers. Hold-open devices and automatic door closers, where provided, shall be maintained. During the period that such device is out of service for repairs, the door it operates shall remain in the closed position.

703.2.3 Door operation. Swinging fire doors shall close from the full-open position and latch automatically. The door closer shall exert enough force to close and latch the door from any partially open position.

703.3 Ceilings. The hanging and displaying of salable goods and other decorative materials from acoustical ceiling systems that are part of a fire-resistance-rated horizontal assembly, shall be prohibited.

703.4 Testing. Horizontal and vertical sliding and rolling fire doors shall be inspected and tested annually to confirm proper operation and full closure. Records of inspections and testing shall be maintained.

SECTION 704 FLOOR OPENINGS AND SHAFTS

704.1 Enclosure. Interior vertical shafts including, but not limited to, *stairways*, elevator hoistways, service and utility shafts, ~~that connect two or more stories of a building required by the *Uniform Statewide Building Code* shall be enclosed or protected as required in Chapter 11 maintained. New floor openings in existing buildings shall comply with the *International Building Code*.~~

704.2 Opening protectives. Where openings are required to be protected, opening protectives and associated closing devices shall be maintained ~~self-closing~~ as self closing or automatic closing ~~by smoke detection~~. Existing fusible-link-type automatic door-closing devices are permitted if the fusible link rating does not exceed 135°F (57°C).

CHAPTER 7 FIRE AND SMOKE PROTECTION FEATURES

Workgroup Recommendation

None

Board Decision

None

801, 801.1, 802, 802.1, 803, 803.1, 803.1.1, 803.1.2, 803.1.2.1, 803.2, 803.3, 803.4, 803.5, 803.5.1, 803.5.1.1, 803.5.2, 803.6, 803.7, 803.8, 803.8.1, 803.8.2, 803.8.3, [BF] 803.9, [BF] 803.10, 804, 804.1, 804.1.1, 804.2, 804.2.1, 804.2.2, 804.2.3, 804.2.4, 804.3, 804.3.1, 804.3.2, 804.3.3, 804.3.3.1, 804.3.3.2, 804.4, 805, 805.1, 805.1.1, 805.1.1.1, 805.1.1.2, 805.1.1.3, 805.1.2, 805.1.2.1, 805.1.2.2, 805.1.2.3, 805.2, 805.2.1, 805.2.1.1, 805.2.1.2, 805.2.1.3, 805.2.2, 805.2.2.1, 805.2.2.2, 805.2.2.3, 805.3, 805.3.1, 805.3.1.1, 805.3.1.2, 805.3.1.3, 805.3.2, 805.3.2.1, 805.3.2.2, 805.3.2.2.1, 805.3.2.2.2, 805.3.2.3, 805.4, 805.4.1, 805.4.1.1, 805.4.1.2, 805.4.1.3, 805.4.2, 805.4.2.1, 805.4.2.2, 805.4.2.3, 806, 806.1, 806.1.1, 806.1.2, 806.1.3, 806.2, 806.3, 806.4, 806.5, 807, 807.1, 807.2, 807.3, 807.4, 807.5, 807.5.1, 807.5.1.1, 807.5.1.2, 807.5.1.3, 807.5.1.4, 807.5.2, 807.5.2.1, 807.5.2.2, 807.5.2.3, 807.5.3, 807.5.3.1, 807.5.3.2, 807.5.3.3, 807.5.3.4, 807.5.4, 807.5.5, 807.5.5.1, 807.5.5.2, 807.5.5.3, 807.5.6, 808, 808.1, 808.2, 808.3, 808.4

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2015 International Fire Code

BOOK PART III—Building and Equipment Design Features SECTION 801 GENERAL

801.1 Scope. The provisions of this chapter shall govern interior finish, interior trim, furniture, furnishings, decorative materials and decorative vegetation in buildings. ~~Existing buildings shall comply with Sections 803 through 808. New buildings shall comply with Sections 804 through 808, and Section 803 of the *International Building Code*.~~

SECTION 802 DEFINITIONS

802.1 Definitions. The following terms are defined in Chapter 2:

FLAME SPREAD.

FLAME SPREAD INDEX.

INTERIOR FLOOR-WALL BASE.

SITE-FABRICATED STRETCH SYSTEM.

SMOKE-DEVELOPED INDEX.

SECTION 803 INTERIOR WALL AND CEILING FINISH AND TRIM IN EXISTING BUILDINGS

803.1 General. The provisions of this section shall limit the allowable fire performance and smoke development of interior wall and ceiling finishes and interior wall and ceiling trim in existing buildings based on location and occupancy classification. Interior wall and ceiling finishes shall be classified in accordance with ~~Section 803 of the~~ *International Uniform Statewide Building Code*. Such materials shall be grouped in accordance with ASTM E 84, as indicated in Section 803.1.1, or in accordance with NFPA 286, as indicated in Section 803.1.2.

- **Exceptions:**

1. Materials having a thickness less than 0.036 inch (0.9 mm) applied directly to the surface of walls and ceilings.
2. Exposed portions of structural members complying with the requirements of buildings of Type IV construction in accordance with the *International Uniform Statewide Building Code* shall not be subject to interior finish requirements.

803.1.1 Classification in accordance with ASTM E 84. Interior finish materials shall be grouped in the following classes in accordance with their flame spread and smoke-developed index where tested in accordance with ASTM E 84.

Class A: flame spread index 0–25; smoke-developed index 0–450.

Class B: flame spread index 26–75; smoke-developed index 0–450.

Class C: flame spread index 76–200; smoke-developed index 0–450.

803.1.2 Classification in accordance with NFPA 286. Interior wall or ceiling finishes shall be allowed to be tested in accordance with NFPA 286. Finishes tested in accordance with NFPA 286 shall comply with Section 803.1.2.1. Interior wall and ceiling finish materials tested in accordance with NFPA 286 and meeting the acceptance criteria of Section 803.1.2.1 shall be allowed to be used where a Class A classification in accordance with ASTM E 84 is required.

803.1.2.1 Acceptance criteria for NFPA 286. The interior finish shall comply with the following:

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

803.2 Stability. Interior finish materials regulated by this chapter shall be applied or otherwise fastened in such a manner that such materials will not readily become detached ~~where subjected to room temperatures of 200°F (93°C) for not less than 30 minutes.~~

803.3 Interior finish requirements based on occupancy. Interior wall and ceiling

finish shall have a flame spread index not greater than that specified in the Uniform Statewide Building Code or Table 803.3 for when not regulated by the group and location designated. Uniform Statewide Building Code.

TABLE 803.3
INTERIOR WALL AND CEILING FINISH REQUIREMENTS BY OCCUPANCY^k

GROUP	SPRINKLERED^l			NONSPRINKLERE	
	Interior exit stairways and interior exit ramps and exit passageways^{a,b}	Corridors and enclosure for exit access stairways and exit access ramps	Rooms and enclosed spaces^c	Interior exit stairways and interior exit ramps and exit passageways^{a,b}	Corridor and enclosure for exit access stairway and exit access ramps
A-1 & A-2	B	B	C	A	A ^d
A-3 ^f , A-4, A-5	B	B	C	A	A ^d
B, E, M, R-1, R-4	B	C	C	A	B
F	C	C	C	B	C
H	B	B	C ^g	A	A
I-1	B	C	C	A	B
I-2	B	B	B ^{h, i}	A	A
I-3	A	A ^j	C	A	A
I-4	B	B	B ^{h, i}	A	A

R-2	C	C	C	B	B
R-3	C	C	C	C	C
S	C	C	C	B	B
U	No Restrictions			No Restrictions	

For SI: 1 inch = 25.4 mm, 1 square foot = 0.0929 m².

- a. Class C interior finish materials shall be allowed for wainscoting or paneling of not more than 1,000 square feet of applied surface area in the grade lobby where applied directly to a noncombustible base or over furring strips applied to a noncombustible base and fireblocked as required by Section 803.11 of the *International Building Code*.
- b. In exit enclosures of buildings less than three stories in height of other than Group I-3, Class B interior finish for nonsprinklered buildings and Class C for sprinklered buildings shall be permitted.
- c. Requirements for rooms and enclosed spaces shall be based upon spaces enclosed by partitions. Where a fire-resistance rating is required for structural elements, the enclosing partitions shall extend from the floor to the ceiling. Partitions that do not comply with this shall be considered as enclosing spaces and the rooms or spaces on both sides shall be considered as one. In determining the applicable requirements for rooms and enclosed spaces, the specific occupancy thereof shall be the governing factor regardless of the group classification of the building or structure.
- d. Lobby areas in Group A-1, A-2 and A-3 occupancies shall not be less than Class B materials.
- e. Class C interior finish materials shall be allowed in Group A occupancies with an occupant load of 300 persons or less.
- f. In places of religious worship, wood used for ornamental purposes, trusses, paneling or chancel furnishing shall be allowed.
- g. Class B material is required where the building exceeds two stories.
- h. Class C interior finish materials shall be allowed in administrative spaces.
- i. Class C interior finish materials shall be allowed in rooms with a capacity of four persons or less.
- j. Class B materials shall be allowed as wainscoting extending not more than 48 inches above the finished floor in corridors.
- k. Finish materials as provided for in other sections of this code.
- l. Applies when the vertical exits, exit passageways, corridors or rooms and spaces are protected by an approved automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2.

803.4 Fire-retardant coatings. The required flame spread or smoke-developed index of surfaces in existing buildings shall be allowed to be achieved by application of *approved* fire-retardant coatings, paints or solutions to surfaces having a flame spread index exceeding that allowed. Such applications shall comply with NFPA 703 and the required fire-retardant properties shall be maintained or renewed in accordance with the manufacturer's instructions.

803.5 Textiles. Where used as interior wall or ceiling finish materials, textiles, including materials having woven or nonwoven, napped, tufted, looped or similar surface, shall comply with the requirements of this section.~~the *Uniform Statewide Building Code*.~~

~~803.5.1 Textile wall or ceiling coverings.~~ ~~Textile wall or ceiling coverings shall comply with one of the following:~~

- ~~1. The wall or ceiling covering shall have a Class A flame spread index in accordance with ASTM E 84 or UL 723, and be protected by automatic sprinklers installed in accordance with Section 903.3.1.1 or 903.3.1.2.~~
- ~~2. The wall covering shall meet the criteria of Section 803.5.1.1 when tested in the manner intended for use in accordance with NFPA 265 using the product-mounting system, including adhesive, of actual use.~~
- ~~3. The wall or ceiling covering shall meet the criteria of Section 803.1.2.1 when tested in accordance with NFPA 286 using the product-mounting system, including adhesive, of actual use.~~

~~803.5.1.1 Method B test protocol.~~ ~~During the Method B protocol, the textile wall covering or expanded vinyl wall covering shall comply with the following:~~

- ~~1. During the 40 kW exposure, flames shall not spread to the ceiling.~~
- ~~2. The flame shall not spread to the outer extremities of the samples on the 8-foot by 12-foot (203 by 305 mm) walls.~~
- ~~3. Flashover, as defined in NFPA 265, shall not occur.~~
- ~~4. For newly introduced wall and ceiling coverings, the total smoke released throughout the test shall not exceed 1,000 m².~~

803.5.2 Newly introduced textile wall and ceiling coverings. Newly introduced textile wall and ceiling coverings shall comply with one of the following:

1. The wall or ceiling covering shall have a Class A flame spread index in accordance with ASTM E 84 or UL 723, and be protected by automatic sprinklers installed in accordance with Section 903.3.1.1 or 903.3.1.2. Test specimen preparation and mounting shall be in accordance with ASTM E 2404.
2. The wall covering shall meet the criteria of Section 803.5.1.1 when tested in the manner intended for use in accordance with NFPA 265 using the product-mounting system (including adhesive) of actual use.
3. The wall or ceiling covering shall meet the criteria of Section 803.1.2.1 when tested in accordance with NFPA 286 using the product-mounting system (including adhesive) of actual use.

Uniform Statewide Building Code.

803.6 Expanded vinyl wall or ceiling coverings. Expanded vinyl wall or ceiling

coverings shall comply with ~~one of the following:~~

- ~~1. The wall or ceiling covering shall have a Class A flame spread index in accordance with ASTM E 84 or UL 723, and be protected by automatic sprinklers installed in accordance with Section 903.3.1.1 or 903.3.1.2. Test specimen preparation and mounting shall be in accordance with ASTM E 2404.~~
- ~~2. The wall covering shall meet the criteria of Section 803.5.1.1 when tested in the manner intended for use in accordance with NFPA 265 using the product mounting system (including adhesive) of actual use.~~
- ~~3. The wall or ceiling covering shall meet the criteria of Section 803.1.2.1 when tested in accordance with NFPA 286 using the product mounting system (including adhesive) of actual use.~~

Uniform Statewide Building Code.

803.7 Facings or wood veneers intended to be applied on site over a wood substrate. ~~Facings or veneers intended to be applied on site over a wood substrate shall comply with one of the following:~~

- ~~1. The facing or veneer shall have a Class A, B or C flame spread index and smoke developed index, based on the requirements of Table 803.3, in accordance with ASTM E 84 or UL 723. Test specimen preparation and mounting shall be in accordance with ASTM E 2404.~~
- ~~2. The facing or veneer shall meet the criteria of Section 803.1.2.1 when tested in accordance with NFPA 286 using the product mounting system, including adhesive, described in Section 5.8.9 of NFPA 286.~~

Uniform Statewide Building Code.

803.8 Foam plastic materials. Foam plastic materials shall not be used as interior wall and ceiling finish unless ~~specifically allowed by Section 803.8.1 or 803.8.2~~ they are installed in accordance with the *Uniform Statewide Building Code*. Foam plastic materials shall not be used as interior trim unless ~~specifically allowed by Section 803.8.3~~ installed in accordance with the *Uniform Statewide Building Code*.

803.8.1 Combustibility characteristics. ~~Foam plastic materials shall be allowed on the basis of fire tests that substantiate their combustibility characteristics for the use intended under actual fire conditions, as indicated in Section 2603.9 of the *International Building Code*. This section shall apply both to exposed foam plastics and to foam plastics used in conjunction with a textile or vinyl facing or cover.~~

803.8.2 Thermal barrier. ~~Foam plastic material shall be allowed if it is separated from the interior of the building by a thermal barrier in accordance with Section 2603.4 of the *International Building Code*.~~

803.8.3 Trim. ~~Foam plastic shall be allowed for trim in accordance with Section 804.2.~~

[BF] 803.9 High-density polyethylene (HDPE) and polypropylene (PP). Where high-density polyethylene or polypropylene is used as an interior finish it shall comply with Section 803.1.2.

[BF] 803.10 Site-fabricated stretch systems. Where used as newly installed interior wall or interior ceiling finish materials, site-fabricated stretch systems containing all three components described in the definition in Chapter 2 shall be tested in the manner intended for use, and shall comply with the requirements of Section 803.1.1 or 803.1.2. If the materials are tested in accordance with ASTM E 84 or UL 723, specimen preparation and mounting shall be in accordance with ASTM E 2573.

SECTION 804 INTERIOR WALL AND CEILING TRIM AND INTERIOR FLOOR FINISH IN ~~NEW AND~~ EXISTING BUILDINGS

804.1 Interior trim. Material, other than foam plastic, used as interior trim ~~in new and existing buildings~~ shall have minimum Class C flame spread and smoke-developed indices, when tested in accordance with ASTM E 84 or UL 723, as described in Section 803.1.1. Combustible trim, excluding handrails and guardrails, shall not exceed 10 percent of the specific wall or ceiling areas to which it is attached.

Exception: Materials and quantities approved and maintained under the *Uniform Statewide Building Code*.

804.1.1 Alternative testing. When the interior trim material has been tested as an interior finish in accordance with NFPA 286 and complies with the acceptance criteria in Section 803.1.2.1, it shall not be required to be tested for flame spread index and smoke-developed index in accordance with ASTM E 84.

804.2 Foam plastic. Foam plastic used as interior trim shall comply with Sections 804.2.1 through 804.2.4.

Exception: Materials approved and maintained under the *Uniform Statewide Building Code*.

~~**804.2.1 Density.** The minimum density of the interior trim shall be 20 pounds per cubic foot (320 kg/m³).~~

~~**804.2.2 Thickness.** The maximum thickness of the interior trim shall be $\frac{1}{2}$ inch (12.7 mm) and the maximum width shall be 8 inches (203 mm).~~

~~**804.2.3 Area limitation.** The interior trim shall not constitute more than 10 percent of the specific wall or ceiling area to which it is attached.~~

~~**804.2.4 Flame spread.** The flame spread index shall not exceed 75 where tested in~~

~~accordance with ASTM E 84 or UL 723. The smoke developed index shall not be limited.~~

~~**Exception:** When the interior trim material has been tested as an interior finish in accordance with NFPA 286 and complies with the acceptance criteria in Section 803.1.2.1, it shall not be required to be tested for flame spread index in accordance with ASTM E 84 or UL 723.~~

804.3 New interior floor finish. ~~New~~

Newly introduced interior floor finish and floor covering materials in ~~new and~~ existing buildings shall comply with Sections 804.3.1 through 804.3.3.2.

- **Exceptions:**
- ~~**Exception:**~~ 1. Floor finishes and coverings of a traditional type, such as wood, vinyl, linoleum or terrazzo, and resilient floor covering materials that are not composed of fibers.
- 2. Floor finishes and coverings installed in accordance with the *Uniform Statewide Building Code*.

804.3.1 Classification. Interior floor finish and floor covering materials required by Section 804.3.3.2 to be of Class I or II materials shall be classified in accordance with NFPA 253. The classification referred to herein corresponds to the classifications determined by NFPA 253 as follows: Class I, 0.45 watts/cm² or greater; Class II, 0.22 watts/cm² or greater.

804.3.2 Testing and identification. Interior floor finish and floor covering materials shall be tested by an *approved* agency in accordance with NFPA 253 and identified by a hang tag or other suitable method so as to identify the manufacturer or supplier and style, and shall indicate the interior floor finish or floor covering classification in accordance with Section 804.3.1. Carpet-type floor coverings shall be tested as proposed for use, including underlayment. Test reports confirming the information provided in the manufacturer's product identification shall be furnished to the *fire code official* upon request.

804.3.3 Interior floor finish requirements. New interior floor coverings materials shall comply with Sections 804.3.3.1 and 804.3.3.2, and interior floor finish materials shall comply with Section 804.3.1.

804.3.3.1 Pill test. In all occupancies, new floor covering materials shall comply with the requirements of the DOC FF-1 "pill test"(CPSC 16 CFR Part 1630) or of ASTM D 2859.

804.3.3.2 Minimum critical radiant flux. In all occupancies, new interior floor finish and floor covering materials in enclosures for *stairways* and *ramps, exit passageways, corridors* and rooms or spaces not separated from *corridors* by full-height partitions extending from the floor to the underside of the ceiling shall withstand a minimum critical radiant flux. The minimum critical radiant flux shall be not less than Class I in

Groups I-1, I-2 and I-3 and not less than Class II in Groups A, B, E, H, I-4, M, R-1, R-2 and S.

- **Exception:** Where a building is equipped throughout with an *automatic sprinkler system* in accordance with ~~Section 903.3.1.1 NFPA 13~~ or ~~903.3.1.2 NFPA 13R~~, Class II materials shall be permitted in any area where Class I materials are required and materials complying with DOC FF-1 "pill test" (CPSC 16 CFR Part 1630) or with ASTM D 2859 shall be permitted in any area where Class II materials are required.

804.4 Interior floor-wall base. Interior floor-wall base that is 6 inches (152 mm) or less in height shall be tested in accordance with NFPA 253 and shall be not less than Class II. Where a Class I floor finish is required, the floor-wall base shall be Class I. The classification referred to herein corresponds to the classifications determined by NFPA 253 as follows: Class I, 0.45 watt/cm² or greater; Class II, 0.22 watts/cm² or greater.

- **Exceptions:**
- **Exception:** 1. Interior trim materials that comply with Section 804.1.
- 2. Interior trim installed in accordance with the *Uniform Statewide Building Code*.

SECTION 805 UPHOLSTERED FURNITURE AND MATTRESSES IN NEW AND EXISTING BUILDINGS

805.1 Group I-1, Condition 2. The requirements in Sections 805.1.1 through 805.1.2 shall apply to facilities in Group I-1, Condition 2.

805.1.1 Upholstered furniture. Newly introduced upholstered furniture shall meet the requirements of Sections 805.1.1.1 through 805.1.1.3.

805.1.1.1 Ignition by cigarettes. Newly introduced upholstered furniture shall be shown to resist ignition by cigarettes as determined by tests conducted in accordance with one of the following:

1. Mocked-up composites of the upholstered furniture shall have a char length not exceeding 1.5 inches (38 mm) when tested in accordance with NFPA 261.
2. The components of the upholstered furniture shall meet the requirements for Class I when tested in accordance with NFPA 260.

805.1.1.2 Heat release rate. Newly introduced upholstered furniture shall have limited rates of heat release when tested in accordance with ASTM E 1537 or California Technical Bulletin 133, as follows:

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

- **Exception:** Upholstered furniture in rooms or spaces protected by an *approved automatic sprinkler system installed throughout* in accordance with ~~Section 903.3.1.1.NFPA 13.~~
- 2. The total energy released by the single upholstered furniture item during the first 10 minutes of the test shall not exceed 25 megajoules (MJ).
 - **Exception:** Upholstered furniture in rooms or spaces protected by an *approved automatic sprinkler system installed throughout* in accordance with ~~Section 903.3.1.1.NFPA 13.~~

805.1.1.3 Identification. Upholstered furniture shall bear the label of an *approved* agency, confirming compliance with the requirements of Sections 805.1.1.1 and 805.1.1.2.

805.1.2 Mattresses. Newly introduced mattresses shall meet the requirements of Sections 805.1.2.1 through 805.1.2.3.

805.1.2.1 Ignition by cigarettes. Newly introduced mattresses shall be shown to resist ignition by cigarettes as determined by tests conducted in accordance with DOC 16 CFR Part 1632 and shall have a char length not exceeding 2 inches (51 mm).

805.1.2.2 Heat release rate. Newly introduced mattresses shall have limited rates of heat release when tested in accordance with ASTM E 1590 or California Technical Bulletin 129, as follows:

1. The peak rate of heat release for the single mattress shall not exceed 100 kW.
 - **Exception:** Mattresses in rooms or spaces protected by an *approved automatic sprinkler system* installed in accordance with ~~Section 903.3.1.1.NFPA 13.~~
2. The total energy released by the single mattress during the first 10 minutes of the test shall not exceed 25 MJ.
 - **Exception:** Mattresses in rooms or spaces protected by an *approved automatic sprinkler system* installed in accordance with ~~Section 903.3.1.1.NFPA 13.~~

805.1.2.3 Identification. Mattresses shall bear the label of an *approved* agency, confirming compliance with the requirements of Sections 805.2.2.1 and 805.2.2.2.

805.2 Group I-2, nursing homes and hospitals. The requirements in Sections 805.2.1 through 805.2.2 shall apply to nursing homes and hospitals classified in Group I-2.

805.2.1 Upholstered furniture. Newly introduced upholstered furniture shall meet the requirements of Sections 805.2.1.1 through 805.2.1.3.

805.2.1.1 Ignition by cigarettes. Newly introduced upholstered furniture shall be shown to resist ignition by cigarettes as determined by tests conducted in accordance with one of the following: (a) mocked-up composites of the upholstered furniture shall have a char length not exceeding 1.5 inches (38 mm) when tested in accordance with NFPA 261 or (b) the components of the upholstered furniture shall meet the requirements for Class I when tested in accordance with NFPA 260.

- **Exception:** Upholstered furniture belonging to the patients in sleeping rooms of nursing homes (Group I-2), provided that a smoke detector is installed in such rooms. Battery-powered, single-station smoke alarms shall be allowed.

805.2.1.2 Heat release rate. Newly introduced upholstered furniture shall have limited rates of heat release when tested in accordance with ASTM E 1537 or California Technical Bulletin 133, as follows:

1. The peak rate of heat release for the single upholstered furniture item shall not exceed 80 kW.
 - **Exception:** Upholstered furniture in rooms or spaces protected by an approved automatic sprinkler system installed throughout in accordance with Section 903.3.1.1.NFPA 13.
2. The total energy released by the single upholstered furniture item during the first 10 minutes of the test shall not exceed 25 MJ.
 - **Exception:** Upholstered furniture in rooms or spaces protected by an approved automatic sprinkler system installed throughout in accordance with Section 903.3.1.1.NFPA 13.

805.2.1.3 Identification. Upholstered furniture shall bear the label of an *approved* agency, confirming compliance with the requirements of Sections 805.2.1.1 and 805.2.1.2.

805.2.2 Mattresses. Newly introduced mattresses shall meet the requirements of Sections 805.2.2.1 through 805.2.2.3.

805.2.2.1 Ignition by cigarettes. Newly introduced mattresses shall be shown to resist ignition by cigarettes as determined by tests conducted in accordance with DOC 16 CFR Part 1632 and shall have a char length not exceeding 2 inches (51 mm).

805.2.2.2 Heat release rate. Newly introduced mattresses shall have limited rates of heat release when tested in accordance with ASTM E 1590 or California Technical Bulletin 129, as follows:

1. The peak rate of heat release for the single mattress shall not exceed 100 kW.
 - **Exception:** Mattresses in rooms or spaces protected by an

~~approved automatic sprinkler system installed throughout in accordance with Section 903.3.1.1.NFPA 13.~~

2. The total energy released by the single mattress during the first 10 minutes of the test shall not exceed 25 MJ.
 - **Exception:** Mattresses in rooms or spaces protected by an ~~approved automatic sprinkler system installed throughout in accordance with Section 903.3.1.1.NFPA 13.~~

805.2.2.3 Identification. Mattresses shall bear the label of an *approved* agency, confirming compliance with the requirements of Sections 805.2.2.1 and 805.2.2.2.

805.3 Group I-3, detention and correction facilities. The requirements in Sections 805.3.1 through 805.3.2 shall apply to detention and correction facilities classified in Group I-3.

805.3.1 Upholstered furniture. Newly introduced upholstered furniture shall meet the requirements of Sections 805.3.1.1 through 805.3.1.3

805.3.1.1 Ignition by cigarettes. Newly introduced upholstered furniture shall be shown to resist ignition by cigarettes as determined by tests conducted in accordance with one of the following:

1. Mocked-up composites of the upholstered furniture shall have a char length not exceeding 1.5 inches (38 mm) when tested in accordance with NFPA 261.
2. The components of the upholstered furniture shall meet the requirements for Class I when tested in accordance with NFPA 260.

805.3.1.2 Heat release rate. Newly introduced upholstered furniture shall have limited rates of heat release when tested in accordance with ASTM E 1537, as follows:

1. The peak rate of heat release for the single upholstered furniture item shall not exceed 80 kW.
2. The total energy released by the single upholstered furniture item during the first 10 minutes of the test shall not exceed 25 MJ.

805.3.1.3 Identification. Upholstered furniture shall bear the label of an *approved* agency, confirming compliance with the requirements of Sections 805.3.1.1 and 805.3.1.2.

805.3.2 Mattresses. Newly introduced mattresses shall meet the requirements of Sections 805.3.2.1 through 805.3.2.3.

805.3.2.1 Ignition by cigarettes. Newly introduced mattresses shall be shown to

resist ignition by cigarettes as determined by tests conducted in accordance with DOC 16 CFR Part 1632 and shall have a char length not exceeding 2 inches (51 mm).

805.3.2.2 Fire performance tests. Newly introduced mattresses shall be tested in accordance with Section 805.3.2.2.1 or 805.3.2.2.2.

805.3.2.2.1 Heat release rate. Newly introduced mattresses shall have limited rates of heat release when tested in accordance with ASTM E 1590 or California Technical Bulletin 129, as follows:

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

805.3.2.2.2 Mass loss test. Newly introduced mattresses shall have a mass loss not exceeding 15 percent of the initial mass of the mattress where tested in accordance with the test in Annex A of ASTM F 1085.

805.3.2.3 Identification. Mattresses shall bear the label of an *approved* agency, confirming compliance with the requirements of Sections 805.3.2.1 and 805.3.2.2.

805.4 Group R-2 college and university dormitories. The requirements of Sections 805.4.1 through 805.4.2.3 shall apply to college and university dormitories classified in Group R-2, including decks, porches and balconies.

805.4.1 Upholstered furniture. Newly introduced upholstered furniture shall meet the requirements of Sections 805.4.1.1 through 805.4.1.3

805.4.1.1 Ignition by cigarettes. Newly introduced upholstered furniture shall be shown to resist ignition by cigarettes as determined by tests conducted in accordance with one of the following:

1. Mocked-up composites of the upholstered furniture shall have a char length not exceeding $1\frac{1}{2}$ inches (38 mm) when tested in accordance with NFPA 261.
2. The components of the upholstered furniture shall meet the requirements for Class I when tested in accordance with NFPA 260.

805.4.1.2 Heat release rate. Newly introduced upholstered furniture shall have limited rates of heat release when tested in accordance with ASTM E 1537 or California Technical Bulletin 133, as follows:

1. The peak rate of heat release for the single upholstered furniture item shall not exceed 80 kW.
 - **Exception:** Upholstered furniture in rooms or spaces protected by an *approved automatic sprinkler system installed throughout in accordance with ~~Section 903.3.1.1~~ NFPA 13.*
2. The total energy released by the single upholstered furniture item during the first 10 minutes of the test shall not exceed 25 MJ.
 - **Exception:** Upholstered furniture in rooms or spaces protected by an *approved automatic sprinkler system installed throughout in accordance with ~~Section 903.3.1.1~~ NFPA 13.*

805.4.1.3 Identification. Upholstered furniture shall bear the label of an *approved* agency, confirming compliance with the requirements of Sections 805.4.1.1 and 805.4.1.2.

805.4.2 Mattresses. Newly introduced mattresses shall meet the requirements of Sections 805.4.2.1 through 805.4.2.3.

805.4.2.1 Ignition by cigarettes. Newly introduced mattresses shall be shown to resist ignition by cigarettes as determined by tests conducted in accordance with DOC 16 CFR Part 1632 and shall have a char length not exceeding 2 inches (51 mm).

805.4.2.2 Heat release rate. Newly introduced mattresses shall have limited rates of heat release when tested in accordance with ASTM E 1590 or California Technical Bulletin 129, as follows:

1. The peak rate of heat release for the single mattress shall not exceed 100 kW.
 - **Exception:** Mattresses in rooms or spaces protected by an *approved automatic sprinkler system installed throughout in accordance with ~~Section 903.3.1.1~~ NFPA 13.*
2. The total energy released by the single mattress during the first 10 minutes of the test shall not exceed 25 MJ.
 - **Exception:** Mattresses in rooms or spaces protected by an *approved automatic sprinkler system installed throughout in accordance with ~~Section 903.3.1.1~~ NFPA 13.*

805.4.2.3 Identification. Mattresses shall bear the label of an *approved* agency, confirming compliance with the requirements of Sections 805.4.2.1 and 805.4.2.2.

SECTION 806 DECORATIVE VEGETATION IN NEW AND EXISTING BUILDINGS

806.1 Natural cut trees. Natural cut trees, where allowed by this section, shall have the trunk bottoms cut off not less than 0.5 inch (12.7 mm) above the original cut and

shall be placed in a support device complying with Section 806.1.2.

806.1.1 Restricted occupancies. Natural cut trees shall be prohibited within ambulatory care facilities and Group A, E, I-1, I-2, I-3, I-4, M, R-1, R-2 and R-4 occupancies.

- **Exceptions:**

1. Trees located in areas protected by an *approved automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2 shall not be prohibited in Groups A, E, M, R-1 and R-2.
2. Trees shall be allowed within *dwelling units* in Group R-2 occupancies.

806.1.2 Support devices. The support device that holds the tree in an upright position shall be of a type that is stable and that meets all of the following criteria:

1. The device shall hold the tree securely and be of adequate size to avoid tipping over of the tree.
2. The device shall be capable of containing a minimum two-day supply of water.
3. The water level, when full, shall cover the tree stem not less than 2 inches (51 mm). The water level shall be maintained above the fresh cut and checked not less than once daily.

806.1.3 Dryness. The tree shall be removed from the building whenever the needles or leaves fall off readily when a tree branch is shaken or if the needles are brittle and break when bent between the thumb and index finger. The tree shall be checked daily for dryness.

806.2 Artificial vegetation. Artificial decorative vegetation shall meet the flame propagation performance criteria of Test Method 1 or Test Method 2, as appropriate, of NFPA 701. Meeting the flame propagation performance criteria of Test Method 1 or Test Method 2, as appropriate, of NFPA 701 shall be documented and certified by the manufacturer in an *approved* manner. Alternatively, the artificial decorative vegetation item shall be tested in accordance with NFPA 289, using the 20 kW ignition source, and shall have a maximum heat release rate of 100 kW.

806.3 Obstruction of means of egress. The required width of any portion of a *means of egress* shall not be obstructed by decorative vegetation. Natural cut trees shall not be located within an exit, corridor, or a lobby or vestibule.

806.4 Open flame. Candles and open flames shall not be used on or near decorative vegetation. Natural cut trees shall be kept a distance from heat vents and any open flame or heat-producing devices at least equal to the height of the tree.

806.5 Electrical fixtures and wiring. The use of unlisted electrical wiring and lighting on natural cut trees and artificial decorative vegetation shall be prohibited. The use of electrical wiring and lighting on artificial trees constructed entirely of metal shall be prohibited.

SECTION 807 DECORATIVE MATERIALS OTHER THAN DECORATIVE VEGETATION IN NEW AND EXISTING BUILDINGS

807.1 General. Combustible decorative materials, other than decorative vegetation, shall comply with Sections 807.2 through 807.5.6.

807.2 Limitations. The following requirements shall apply to all occupancies:

1. Furnishings or decorative materials of an explosive or highly flammable character shall not be used.
2. Fire-retardant coatings in existing buildings shall be maintained so as to retain the effectiveness of the treatment under service conditions encountered in actual use.
3. Furnishings or other objects shall not be placed to obstruct exits, access thereto, egress therefrom or visibility thereof.
4. The permissible amount of noncombustible decorative materials shall not be limited.

807.3 Combustible decorative materials. In other than Group I-3, curtains, draperies, fabric hangings and other similar combustible decorative materials suspended from walls or ceilings shall comply with Section 807.4 and shall not exceed 10 percent of the specific wall or ceiling area to which they are attached.

Fixed or movable walls and partitions, paneling, wall pads and crash pads applied structurally or for decoration, acoustical correction, surface insulation or other purposes shall be considered *interior finish*, shall comply with Section 803 and shall not be considered *decorative materials* or furnishings.

- **Exceptions:**

1. In auditoriums in Group A, the permissible amount of curtains, draperies, fabric hangings and other similar combustible decorative material suspended from walls or ceilings shall not exceed 75 percent of the aggregate wall area where the building is equipped throughout with an *approved automatic sprinkler system* in accordance with ~~Section 903.3.1.1, NFPA 13~~ and where the material is installed in accordance with ~~Section 803.11 of the~~ *International Uniform Statewide Building Code*.
2. In Group R-2 dormitories, within sleeping units and dwelling units, the permissible amount of curtains, draperies, fabric hangings and other similar decorative materials suspended from walls or ceilings shall not exceed 50 percent of the aggregate wall areas where the building is equipped throughout with an *approved automatic sprinkler system* installed in accordance with ~~Section 903.3.1, NFPA 13~~.

3. In Group B and M occupancies, the amount of combustible fabric partitions suspended from the ceiling and not supported by the floor shall comply with Section 807.4 and shall not be limited.

807.4 Acceptance criteria and reports. Where required to exhibit improved fire performance, curtains, draperies, fabric hangings and other similar combustible decorative materials suspended from walls or ceilings shall be tested by an *approved* agency and meet the flame propagation performance criteria of Test Method 1 or Test Method 2, as appropriate, of NFPA 701 or exhibit a maximum rate of heat release of 100 kW when tested in accordance with NFPA 289, using the 20 kW ignition source. Reports of test results shall be prepared in accordance with the test method used and furnished to the *fire code official* upon request.

807.5 Occupancy-based requirements. In occupancies specified, combustible decorative materials not complying with Section 807.3 shall comply with Sections 807.5.1 through 807.5.6.

807.5.1 Group A. In Group A occupancies, the requirements in Sections 807.5.1.1 through 807.5.1.4 shall apply.

807.5.1.1 Foam plastics. Exposed foam plastic materials and unprotected materials containing foam plastic used for decorative purposes or stage scenery or exhibit booths shall have a maximum heat release rate of 100 kW when tested in accordance with UL 1975, or when tested in accordance with NFPA 289 using the 20 kW ignition source.

- **Exceptions:**

1. Individual foam plastic items or items containing foam plastic where the foam plastic does not exceed 1 pound (0.45 kg) in weight.
2. Cellular or foam plastic shall be allowed for trim in accordance with Section 804.2.

807.5.1.2 Motion picture screens. The screens upon which motion pictures are projected in new and existing buildings of Group A shall either meet the flame propagation performance criteria of Test Method 1 or Test Method 2, as appropriate, of NFPA 701 or shall comply with the requirements for a Class B interior finish in accordance with ~~Section 803 of the~~ *International Uniform Statewide Building Code*.

807.5.1.3 Wood use in places of religious worship. In places of religious worship, wood used for ornamental purposes, trusses, paneling or chancel furnishing shall not be limited.

807.5.1.4 Pyroxylin plastic. Imitation leather or other material consisting of or coated with a pyroxylin or similarly hazardous base shall not be used.

807.5.2 Group E. Group E occupancies shall comply with Sections 807.5.2.1 through 807.5.2.3.

807.5.2.1 Storage in corridors and lobbies. Clothing and personal effects shall not be stored in *corridors* and lobbies.

- **Exceptions:**

1. *Corridors* protected by an *approved automatic sprinkler system installed throughout* in accordance with ~~Section 903.3.1.1~~ NFPA 13.
2. *Corridors* protected by an *approved* fire alarm system installed in accordance with ~~Section 907~~ NFPA 72.
3. Storage in metal lockers, provided the minimum required egress width is maintained.

807.5.2.2 Artwork in corridors. Artwork and teaching materials shall be limited on the walls of *corridors* to not more than 20 percent of the wall area.

807.5.2.3 Artwork in classrooms. Artwork and teaching materials shall be limited on walls of classrooms to not more than 50 percent of the specific wall area to which they are attached.

807.5.3 Groups I-1 and I-2. In Group I-1 and I-2 occupancies, combustible *decorative materials* shall comply with Sections 807.5.3.1 through 807.5.3.4.

807.5.3.1 Group I-1 and I-2 Condition 1 within units. In Group I-1 and Group I-2 Condition 1 occupancies, equipped throughout with an *approved automatic sprinkler system installed* in accordance with ~~Section 903.3.1.1~~ NFPA 13, within sleeping units and dwelling units, combustible decorative materials placed on walls shall be limited to not more than 50 percent of the wall area to which they are attached.

807.5.3.2 In Group I-1 and I-2 Condition 1 for areas other than within units. In Group I-1 and Group I-2 Condition 1 occupancies, equipped throughout with an *approved automatic sprinkler system installed* in accordance with ~~Section 903.3.1.1~~ NFPA 13, combustible decorative materials placed on walls in areas other than within dwelling and sleeping units shall be limited to not more than 30 percent of the wall area to which they are attached.

807.5.3.3 In Group I-2 Condition 2. In Group I-2 Condition 2 occupancies, equipped throughout with an *approved automatic sprinkler system installed* in accordance with ~~Section 903.3.1.1~~ NFPA 13, combustible decorative materials placed on walls shall be limited to not more than 30 percent of the wall area to which they are attached.

807.5.3.4 Other areas in Groups I-1 and I-2. In Group I-1 and I-2 occupancies, in areas not equipped throughout with an *approved automatic sprinkler system*,

combustible decorative materials shall be of such limited quantities that a hazard of fire development or spread is not present.

807.5.4 Group I-3. In Group I-3, combustible *decorative materials* are prohibited.

807.5.5 Group I-4. Group I-4 occupancies shall comply with the requirements in Sections 807.5.5.1 through 807.5.5.3.

807.5.5.1 Storage in corridors and lobbies. Clothing and personal effects shall not be stored in *corridors* and lobbies.

- **Exceptions:**

1. *Corridors* protected by an *approved automatic sprinkler system* ~~installed throughout~~ in accordance with ~~Section 903.3.1.1.NFPA 13.~~
2. *Corridors* protected by an *approved* fire alarm system installed in accordance with Section 907.
3. Storage in metal lockers, provided the minimum required egress width is maintained.

807.5.5.2 Artwork in corridors. Artwork and teaching materials shall be limited on walls of *corridors* to not more than 20 percent of the wall area.

807.5.5.3 Artwork in classrooms. Artwork and teaching materials shall be limited on walls of classrooms to not more than 50 percent of the specific wall area to which they are attached.

807.5.6 Dormitories in Group R-2. In Group R-2 dormitories, within sleeping units and dwelling units, the combustible decorative materials shall be of limited quantities such that a hazard of fire development or spread is not present.

SECTION 808 FURNISHINGS OTHER THAN UPHOLSTERED FURNITURE AND MATTRESSES OR DECORATIVE MATERIALS IN NEW AND EXISTING BUILDINGS

808.1 Wastebaskets and linen containers in Group I-1, I-2 and I-3 occupancies. Wastebaskets, linen containers and other waste containers, including their lids, located in Group I-1, I-2 and I-3 occupancies shall be constructed of noncombustible materials or of materials that meet a peak rate of heat release not exceeding 300 kW/m^2 when tested in accordance with ASTM E 1354 at an incident heat flux of 50 kW/m^2 in the horizontal orientation. Metal wastebaskets and other metal waste containers with a capacity of 20 gallons (75.7 L) or more shall be *listed* in accordance with UL 1315 and shall be provided with a noncombustible lid. Portable containers exceeding 32 gallons (121 L) shall be stored in an area classified as a waste and linen collection room and constructed in accordance with ~~Table 509 of the~~ *International Uniform Statewide Building Code*.

808.2 Waste containers with a capacity of 20 gallons or more in Group R-2 college and university dormitories. Waste containers, including their lids, located in Group R-2 college and university dormitories, and with a capacity of 20 gallons (75.7 L) or more, shall be constructed of noncombustible materials or of materials that meet a peak rate of heat release not exceeding 300 kW/m^2 when tested in accordance with ASTM E 1354 at an incident heat flux of 50 kW/m^2 in the horizontal orientation. Metal wastebaskets and other metal waste containers with a capacity of 20 gallons (75.7 L) or more shall be *listed* in accordance with UL 1315 and shall be provided with a noncombustible lid. Portable containers exceeding 32 gallons (121 L) shall be stored in an area classified as a waste and linen collection room constructed in accordance with ~~Table 509 of the *International*~~ *Uniform Statewide Building Code*.

808.3 Signs. Foam plastic signs that are not affixed to interior building surfaces shall have a maximum heat release rate of 150 kW when tested in accordance with UL 1975, or when tested in accordance with NFPA 289 using the 20-kW ignition source.

- **Exception:** Where the aggregate area of foam plastic signs is less than 10 percent of the floor area or wall area of the room or space in which the signs are located, whichever is less, subject to the approval of the *fire code official*.

808.4 Combustible lockers. Where lockers constructed of combustible materials are used, the lockers shall be considered interior finish and shall comply with Section 803.

- **Exception:** Lockers constructed entirely of wood and noncombustible materials shall be permitted to be used wherever interior finish materials are required to meet a Class C classification in accordance with Section 803.1.1.

CHAPTER 8 INTERIOR FINISH, DECORATIVE MATERIALS AND FURNISHINGS

Workgroup Recommendation

None

Board Decision

None

901, 901.1, 901.2, 901.2.1, 901.3, 901.4, 901.4.1, 901.4.2, 901.4.3, 901.4.4, 901.4.5, 901.4.6, 901.5, 901.5.1, 901.5.1 (New), 901.6, 901.6.1, 901.6.2, 901.6.2.1, 901.7, 901.7.1 (New), 901.7.1, 901.7.2, 901.7.3, 901.7.4, 901.7.5, 901.7.6, 901.8, 901.8.1, 901.8.2, 901.9, 902, 902.1, 903, 903.1, 903.1.1, 903.2, 903.2.1, 903.2.1.1, 903.2.1.2, 903.2.1.3, 903.2.1.4, 903.2.1.5, 903.2.1.6, 903.2.1.7, 903.2.2, 903.2.3, 903.2.4, 903.2.4.1, 903.2.5, 903.2.5.1, 903.2.5.2, 903.2.5.3, 903.2.6, 903.2.7, 903.2.7.1, 903.2.8, 903.2.8.1, [F] 903.2.8.2, [F] 903.2.8.3, [F] 903.2.8.3.1, [F] 903.2.8.3.2, [F] 903.2.8.4, 903.2.9, 903.2.9.1, 903.2.9.2, 903.2.10, 903.2.10.1, 903.2.11, 903.2.11.1, 903.2.11.1.1, 903.2.11.1.2, 903.2.11.1.3, 903.2.11.2, 903.2.11.3, 903.2.11.4, 903.2.11.5, 903.2.11.6, 903.2.12, 903.3, 903.3.1, 903.3.1.1, 903.3.1.1.1, 903.3.1.1.2, 903.3.1.2, 903.3.1.2.1, 903.3.1.2.2, 903.3.1.3, 903.3.2, 903.3.3, 903.3.4, 903.3.5, 903.3.5.1, 903.3.5.2, 903.3.6, 903.3.7, 903.3.8, 903.3.8.1, 903.3.8.2, 903.3.8.3, 903.3.8.4, 903.3.8.5, 903.4, 903.4.1, 903.4.2, 903.4.3, 903.5, 903.6, 904, 904.1, 904.1.1, 904.2, 904.2.1, 904.2.2, 904.3, 904.3.1, 904.3.2, 904.3.3, 904.3.4, 904.3.5, 904.4, 904.4.1, 904.4.2, 904.4.2.1, 904.4.3, 904.5, 904.5.1, 904.5.2, 904.6, 904.6.1, 904.6.2, 904.7, 904.7.1, 904.8, 904.8.1, 904.8.2, 904.8.3, 904.8.4, 904.8.4.1, 904.8.5, 904.9, 904.9.1, 904.9.2, 904.9.3, 904.9.3.1, 904.9.4, 904.10.1, 904.10.2, 904.10.3, 904.11, 904.11.1, 904.11.1.1, 904.11.1.2, 904.11.1.3, 904.11.1.4, 904.11.2, 904.11.2.1, 904.11.2.2, 904.11.2.3, 904.11.3, 904.12, 904.12.1, 904.12.2, 904.12.3, 904.12.3.1, 904.12.4, 904.12.4.1, 904.12.5, 904.12.5.1, 904.12.5.2, 904.12.6, 904.12.6.1, 904.12.6.2, 904.12.6.3, 904.13, 904.13.1, 904.13.2, 905, 905.1, 905.2, 905.3, 905.3.1, 905.3.2, 905.3.3, 905.3.4, 905.3.4.1, 905.3.5, 905.3.7, 905.3.8, 905.4, 905.4.1, 905.4.2, 905.5, 905.5.1, 905.5.2, 905.5.3, 905.6, 905.6.1, 905.6.2, 905.7, 905.7.1, 905.7.2, 905.8, 905.9, 905.11, 906, 906.1, 906.2, 906.2.1, 906.3, 906.3.1, 906.3.2, 906.3.3, 906.3.4, 906.4, 906.5, 906.6, 906.7, 906.8, 906.9, 906.9.1, 906.9.2, 906.9.3

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2015 International Fire Code

SECTION 901 GENERAL

901.1 Scope. The provisions of this chapter shall ~~specify where fire protection systems are required and shall apply to the design, installation, inspection, operation, testing and maintenance of all fire protection systems.~~

901.2 ~~Construction documents~~Documents. The *fire code official* shall have the authority to require copies of ~~construction documents~~, calculations, and ~~calculations~~instructions for all smoke control systems and *fire protection systems*.

NOTE: This only requires existing copies to be provided to the fire code official and ~~to does not require permits~~documents to be issued for the installation, rehabilitation or modification of any *fire protection system*. *Construction newly created if such documents for fire protection systems* shall be submitted for review and approval prior to system installation. do not exist.

901.2.1 ~~Statement of compliance.~~ Before requesting final approval of the installation, where required by the *fire code official*, the installing contractor shall furnish a written statement to the *fire code official* that the subject *fire protection system* has been installed in accordance with ~~approved plans~~ and has been tested in accordance with the manufacturer's specifications and the appropriate installation standard. Any deviations from the design standards shall be noted and copies of the approvals for such deviations shall be attached to the written statement.

901.3 Permits. Permits shall be required as set forth in ~~Sections 105.6 and 105.7.~~Section 107.2.

901.4 ~~Installation~~Maintenance and alterations. *Fire protection systems* shall be maintained in accordance with the original installation standards for that system. ~~Required systems shall be extended, altered or augmented as necessary to maintain and continue protection where the building is altered, remodeled or added to.~~ *Alterations to fire protection systems* shall be done in accordance with the *Uniform Statewide Building Code* and the applicable standards.

901.4.1 Required fire protection systems. *Fire protection systems*~~required by this code or the *International Building Code*~~shall be installed, repaired, operated, tested and maintained in accordance with this code. A *fire protection system* for which a design option, exception or reduction to the provisions of this code or the~~*International Building Code*~~*Uniform Statewide Building Code* ~~has been granted shall be considered to be a required system.~~

901.4.2 Nonrequired fire protection systems. A *fire protection system* or portion thereof not required by this code or the ~~*International Building Code*~~*Uniform Statewide Building Code* shall be ~~allowed to be furnished for partial or complete protection provided such installed system meets the applicable requirements of~~repaired, operated, tested, and maintained in accordance with this code and the *International Building Code*.

901.4.3 Fire areas. Where buildings, or portions thereof, are divided into *fire areas* so as not to exceed the limits established for requiring a *fire protection system* in accordance with ~~this chapter~~the *Uniform Statewide Building Code*, such *fire areas* shall be separated by ~~fire barriers constructed in accordance with Section 707 of the *International Building Code* or horizontal assemblies constructed in accordance with Section 711 of the *International Building Code*, or both, having a fire resistance rating of not less than that determined in accordance with Section 707.3.10 of the *International Building Code*~~maintained.

901.4.4 Additional fire protection systems. ~~In occupancies of a hazardous nature, where special hazards exist in addition to the normal hazards of the occupancy, or where the *fire code official* determines that access for fire apparatus is unduly difficult, the *fire code official* shall have the authority to require additional safeguards. Such safeguards include, but shall not be limited to, the following: automatic fire detection systems, fire alarm systems, automatic fire extinguishing systems, standpipe systems, or portable or fixed extinguishers. Fire protection equipment required under this section shall be installed in accordance with this code and the applicable referenced standards.~~

901.4.5 Appearance of equipment. Any device that has the physical appearance of life safety or fire protection equipment but that does not perform that life safety or fire protection function shall be prohibited.

901.4.6 Pump and riser room-size. ~~Where provided, fire pump rooms and automatic sprinkler system riser rooms shall be designed with adequate space for all equipment necessary for the installation, as defined by the manufacturer, with sufficient working space around the stationary equipment. Clearances~~maintain clearances around equipment to elements of permanent construction, including other installed equipment and appliances, and shall be sufficient to allow inspection, service, repair or replacement without removing such elements of permanent construction or disabling the function of a required fire-resistance-rated assembly. ~~Fire pump and automatic sprinkler system riser rooms shall be~~Passageways provided with a door(s) and an unobstructed passageway large enough to allow for the removal of the largest piece of equipment.equipment shall remain unobstructed.

901.5 Installation acceptance testing. Fire detection and alarm systems, fire-extinguishing systems, ~~fire hydrant systems, fire standpipe systems, fire pump systems, private fire service mains and all other *fire protection systems* and appurtenances thereto shall be subject to acceptance tests as contained in the installation standards and as approved by~~in accordance with the *fire code official**Uniform Statewide Building Code*. ~~The *fire code official* shall be notified before any required acceptance testing.~~

901.5.1 Occupancy. It shall be unlawful to occupy any portion of a building or structure until the required fire detection, alarm and suppression systems have been tested and approved in accordance with the *Uniform Statewide Building Code*.

901.5.1 Hydrant and fire service main acceptance testing. Fire hydrant systems and private fire service mains shall be subject to acceptance tests as contained in the installation standards and as approved by the fire code official. The fire code official shall be notified before any required acceptance testing.

Renumber subsequent sections.

901.6 Inspection, testing and maintenance. Fire detection, alarm, and extinguishing systems, mechanical smoke exhaust systems, and smoke and heat vents shall be maintained in an operative condition at all times, and shall be replaced or repaired in accordance with the Uniform Statewide Building Code where defective. Nonrequired *fire protection systems* and equipment shall be inspected, tested and maintained or removed.

901.6.1 Standards. *Fire protection systems* shall be inspected, tested and maintained in accordance with the referenced standards *listed* in Table 901.6.1.

**TABLE 901.6.1
FIRE PROTECTION SYSTEM MAINTENANCE STANDARDS**

SYSTEM	STANDARD
Portable fire extinguishers	NFPA 10
Carbon dioxide fire-extinguishing system	NFPA 12
Halon 1301 fire-extinguishing systems	NFPA 12A
Dry-chemical extinguishing systems	NFPA 17
Wet-chemical extinguishing systems	NFPA 17A
Water-based fire protection systems	NFPA 25
Fire alarm systems	NFPA 72
Smoke and heat vents	NFPA 204

Water-mist systems	NFPA 750
Clean-agent extinguishing systems	NFPA 2001

901.6.2 Records. Records of all system inspections, tests and maintenance required by the referenced standards shall be maintained.

901.6.2.1 Records information. Initial records shall include the name of the installation contractor, type of components installed, manufacturer of the components, location and number of components installed per floor. Records shall also include the manufacturers' operation and maintenance instruction manuals. Such records shall be maintained for the life of the installation.

901.7 Systems out of service. Where a required *fire protection system* is out of service, the fire department and the *fire code official* shall be notified immediately and, where required by the *fire code official*, the building shall be either evacuated or an *approved* fire watch shall be provided for all occupants left unprotected by the shutdown until the *fire protection system* has been returned to service.

Where utilized, fire watches shall be provided with not less than one *approved* means for notification of the fire department and their only duty shall be to perform constant patrols of the protected premises and keep watch for fires.

901.7.1 Modifications during impairment The *fire code official* is authorized to require safeguards in a building or fire area when the *required fire protection* is out of service. Those safeguards may be based upon the provisions of the *Uniform Statewide Building Code* or other recognized safety standards.

(renumber subsequent sections)

901.7.1 Impairment coordinator. The building *owner* shall assign an impairment coordinator to comply with the requirements of this section. In the absence of a specific designee, the *owner* shall be considered the impairment coordinator.

901.7.2 Tag required. A tag shall be used to indicate that a system, or portion thereof, has been removed from service.

901.7.3 Placement of tag. The tag shall be posted at each fire department connection, system control valve, fire alarm control unit, fire alarm annunciator and *fire command center*, indicating which system, or part thereof, has been removed from service. The *fire code official* shall specify where the tag is to be placed.

901.7.4 Preplanned impairment programs. Preplanned impairments shall be

authorized by the impairment coordinator. Before authorization is given, a designated individual shall be responsible for verifying that all of the following procedures have been implemented:

1. The extent and expected duration of the impairment have been determined.
2. The areas or buildings involved have been inspected and the increased risks determined.
3. Recommendations have been submitted to management or the building *owner/manager*.
4. The fire department has been notified.
5. The insurance carrier, the alarm company, the building *owner/manager* and other authorities having jurisdiction have been notified.
6. The supervisors in the areas to be affected have been notified.
7. A tag impairment system has been implemented.
8. Necessary tools and materials have been assembled on the impairment site.

901.7.5 Emergency impairments. Where unplanned impairments occur, appropriate emergency action shall be taken to minimize potential injury and damage. The impairment coordinator shall implement the steps outlined in Section 901.7.4.

901.7.6 Restoring systems to service. When impaired equipment is restored to normal working order, the impairment coordinator shall verify that all of the following procedures have been implemented:

1. Necessary inspections and tests have been conducted to verify that affected systems are operational.
2. Supervisors have been advised that protection is restored.
3. The fire department has been advised that protection is restored.
4. The building *owner/manager*, insurance carrier, alarm company and other involved parties have been advised that protection is restored.
5. The impairment tag has been removed.

901.8 Removal of or tampering with equipment. It shall be unlawful for any person to remove, tamper with or otherwise disturb any fire hydrant, fire detection and alarm system, fire suppression system or other fire appliance required by this code or the Uniform Statewide Building Code except for the purpose of extinguishing fire, training purposes, recharging or making necessary repairs or where *approved* by the *fire code official*.

901.8.1 Removal of or tampering with appurtenances. Locks, gates, doors, barricades, chains, enclosures, signs, tags or seals that have been installed by or at the direction of the *fire code official* shall not be removed, unlocked, destroyed, tampered with or otherwise vandalized in any manner.

901.8.2 Removal of existing occupant-use hose lines. The *fire code official* is authorized to permit the removal of existing occupant-use hose lines where all of the

following conditions exist:

1. Installation is not required by this code or the ~~International~~Uniform Statewide Building Code.
2. The hose line would not be utilized by trained personnel or the fire department.
3. The remaining outlets are compatible with local fire department fittings.

901.9 Termination of monitoring service. For fire alarm systems required to be monitored by ~~this code~~ the Uniform Statewide Building Code, notice shall be made to the *fire code official* whenever alarm monitoring services are terminated. Notice shall be made in writing, to the *fire code official* by the monitoring service provider being terminated.

901.10 Recall of fire protection components. Any *fire protection system* component regulated by this code that is the subject of a voluntary or mandatory recall under federal law shall be replaced with *approved, listed* components in compliance with the referenced standards of this code. The *fire code official* shall be notified in writing by the building *owner* when the recalled component parts have been replaced.

SECTION 902 DEFINITIONS

902.1 Definitions. The following terms are defined in Chapter 2:

ALARM NOTIFICATION APPLIANCE.

ALARM SIGNAL.

ALARM VERIFICATION FEATURE.

ANNUNCIATOR.

AUDIBLE ALARM NOTIFICATION APPLIANCE.

AUTOMATIC.

AUTOMATIC FIRE-EXTINGUISHING SYSTEM.

AUTOMATIC SMOKE DETECTION SYSTEM.

AUTOMATIC SPRINKLER SYSTEM.

AUTOMATIC WATER MIST SYSTEM.

AVERAGE AMBIENT SOUND LEVEL.

CARBON DIOXIDE EXTINGUISHING SYSTEM.

CLEAN AGENT.

COMMERCIAL MOTOR VEHICLE.

CONSTANTLY ATTENDED LOCATION.

DELUGE SYSTEM.

DETECTOR, HEAT.

DRY-CHEMICAL EXTINGUISHING AGENT.

ELEVATOR GROUP.

EMERGENCY ALARM SYSTEM.

EMERGENCY VOICE/ALARM COMMUNICATIONS.

FIRE ALARM BOX, MANUAL.

FIRE ALARM CONTROL UNIT.

FIRE ALARM SIGNAL.

FIRE ALARM SYSTEM.
FIRE AREA.
FIRE DETECTOR, AUTOMATIC.
FIRE PROTECTION SYSTEM.
FIRE SAFETY FUNCTIONS.
FIXED BASE OPERATOR (FBO).
FOAM-EXTINGUISHING SYSTEM.
HALOGENATED EXTINGUISHING SYSTEM.
IMPAIRMENT COORDINATOR.
INITIATING DEVICE.
MANUAL FIRE ALARM BOX.
MULTIPLE-STATION ALARM DEVICE.
MULTIPLE-STATION SMOKE ALARM.
NOTIFICATION ZONE.
NUISANCE ALARM.
PRIVATE GARAGE.
RECORD DRAWINGS.
SINGLE-STATION SMOKE ALARM.
SLEEPING UNIT.
SMOKE ALARM.
SMOKE DETECTOR.
STANDPIPE SYSTEM, CLASSES OF.
Class I system.
Class II system.
Class III system.
STANDPIPE, TYPES OF.
Automatic dry.
Automatic wet.
Manual dry.
Manual wet.
Semiautomatic dry.
SUPERVISING STATION.
SUPERVISORY SERVICE.
SUPERVISORY SIGNAL.
SUPERVISORY SIGNAL-INITIATING DEVICE.
TIRES, BULK STORAGE OF.
TRANSIENT AIRCRAFT.
TROUBLE SIGNAL.
VISIBLE ALARM NOTIFICATION APPLIANCE.
WET-CHEMICAL EXTINGUISHING AGENT.
WIRELESS PROTECTION SYSTEM.
ZONE.
ZONE, NOTIFICATION.

SECTION 903 AUTOMATIC SPRINKLER SYSTEMS

903.1 General. *Automatic sprinkler systems* shall comply with this section.

~~**903.1.1 Alternative protection.** *Alternative automatic fire extinguishing systems*~~

~~complying with Section 904 shall be permitted instead of automatic sprinkler protection where recognized by the applicable standard and approved by the fire code official.~~

903.2 Where required. ~~Approved automatic sprinkler systems in new buildings and structures shall be provided in the locations described in Sections 903.2.1 through 903.2.12.~~

Exception: ~~Spaces or areas in telecommunications buildings used exclusively for telecommunications equipment, associated electrical power distribution equipment, batteries and standby engines, provided those spaces or areas are equipped throughout with an automatic smoke detection system in accordance with Section 907.2 and are separated from the remainder of the building by not less than 1-hour fire barriers constructed in accordance with Section 707 of the International Building Code or not less than 2-hour horizontal assemblies constructed in accordance with Section 711 of the International Building Code, or both.~~

903.2.1 Group A. ~~An automatic sprinkler system shall be provided throughout buildings and portions thereof used as Group A occupancies as provided in this section. For Group A-1, A-2, A-3 and A-4 occupancies, the automatic sprinkler system shall be provided throughout the story where the fire area containing the Group A-1, A-2, A-3 or A-4 occupancy is located, and throughout all stories from the Group A occupancy to, and including, the levels of exit discharge serving the Group A occupancy. For Group A-5 occupancies, the automatic sprinkler system shall be provided in the spaces indicated in Section 903.2.1.5.~~

903.2.1.1 Group A-1. ~~An automatic sprinkler system shall be provided for fire areas containing Group A-1 occupancies and intervening floors of the building where one of the following conditions exists:~~

- ~~1. The fire area exceeds 12,000 square feet (1115 m²).~~
- ~~2. The fire area has an occupant load of 300 or more.~~
- ~~3. The fire area is located on a floor other than a level of exit discharge serving such occupancies.~~
- ~~4. The fire area contains a multitheater complex.~~

903.2.1.2 Group A-2. ~~An automatic sprinkler system shall be provided for fire areas containing Group A-2 occupancies and intervening floors of the building where one of the following conditions exists:~~

- ~~1. The fire area exceeds 5,000 square feet (464 m²).~~
- ~~2. The fire area has an occupant load of 100 or more.~~
- ~~3. The fire area is located on a floor other than a level of exit discharge serving such occupancies.~~

~~903.2.1.3 Group A-3.~~ An ~~automatic sprinkler system~~ shall be provided for ~~fire areas~~ containing Group A-3 occupancies and intervening floors of the building where one of the following conditions exists:

- ~~1. The fire area exceeds 12,000 square feet (1115 m²).~~
- ~~2. The fire area has an occupant load of 300 or more.~~
- ~~3. The fire area is located on a floor other than a level of exit discharge serving such occupancies.~~

~~903.2.1.4 Group A-4.~~ An ~~automatic sprinkler system~~ shall be provided for ~~fire areas~~ containing Group A-4 occupancies and intervening floors of the building where one of the following conditions exists:

- ~~1. The fire area exceeds 12,000 square feet (1115 m²).~~
- ~~2. The fire area has an occupant load of 300 or more.~~
- ~~3. The fire area is located on a floor other than a level of exit discharge serving such occupancies.~~

~~903.2.1.5 Group A-5.~~ An ~~automatic sprinkler system~~ shall be provided for Group A-5 occupancies in the following areas: concession stands, retail areas, press boxes and other accessory use areas in excess of 1,000 square feet (93 m²).

~~903.2.1.6 Assembly occupancies on roofs.~~ Where an occupied roof has an assembly occupancy with an occupant load exceeding 100 for Group A-2 and 300 for other Group A occupancies, all floors between the occupied roof and the level of exit discharge shall be equipped with an ~~automatic sprinkler system~~ in accordance with Section 903.3.1.1 or 903.3.1.2.

~~Exception:~~ Open parking garages of Type I or Type II construction.

~~903.2.1.7 Multiple fire areas.~~ An ~~automatic sprinkler system~~ shall be provided where multiple fire areas of Group A-1, A-2, A-3 or A-4 occupancies share exit or exit access components and the combined occupant load of these fire areas is 300 or more.

~~903.2.2 Ambulatory care facilities.~~ An ~~automatic sprinkler system~~ shall be installed throughout the entire floor containing an ambulatory care facility where either of the following conditions exist at any time:

- ~~1. Four or more care recipients are incapable of self-preservation, whether rendered incapable by staff or staff has accepted responsibility for care recipients already incapable.~~
- ~~2. One or more care recipients that are incapable of self-preservation are located at other than the level of exit discharge serving such a facility.~~

~~In buildings where ambulatory care is provided on levels other than the level of exit discharge, an automatic sprinkler system shall be installed throughout the entire floor where such care is provided as well as all floors below, and all floors between the level of ambulatory care and the nearest level of exit discharge, including the level of exit discharge.~~

903.2.3 Group E. ~~An automatic sprinkler system shall be provided for Group E occupancies as follows:~~

- ~~1. Throughout all Group E fire areas greater than 12,000 square feet (1115 m²) in area.~~
- ~~2. Throughout every portion of educational buildings below the lowest level of exit discharge serving that portion of the building.~~

Exception: ~~An automatic sprinkler system is not required in any area below the lowest level of exit discharge serving that area where every classroom throughout the building has not fewer than one exterior exit door at ground level.~~

903.2.4 Group F-1. ~~An automatic sprinkler system shall be provided throughout all buildings containing a Group F-1 occupancy where one of the following conditions exists:~~

- ~~1. A Group F-1 fire area exceeds 12,000 square feet (1115 m²).~~
- ~~2. A Group F-1 fire area is located more than three stories above grade plane.~~
- ~~3. The combined area of all Group F-1 fire areas on all floors, including any mezzanines, exceeds 24,000 square feet (2230 m²).~~
- ~~4. A Group F-1 occupancy used for the manufacture of upholstered furniture or mattresses exceeds 2,500 square feet (232 m²).~~

903.2.4.1 Woodworking operations. ~~An automatic sprinkler system shall be provided throughout all Group F-1 occupancy fire areas that contain woodworking operations in excess of 2,500 square feet in area (232 m²) that generate finely divided combustible waste or use finely divided combustible materials.~~

903.2.5 Group H. ~~Automatic sprinkler systems shall be provided in high hazard occupancies as required in Sections 903.2.5.1 through 903.2.5.3.~~

903.2.5.1 General. ~~An automatic sprinkler system shall be installed in Group H occupancies.~~

903.2.5.2 Group H-5 occupancies. ~~An automatic sprinkler system shall be installed throughout buildings containing Group H-5 occupancies. The design of the sprinkler system shall be not less than that required under the International Building Code for the occupancy hazard classifications in accordance with Table 903.2.5.2.~~

~~Where the design area of the sprinkler system consists of a corridor protected by one~~

~~row of sprinklers, the maximum number of sprinklers required to be calculated is 13.~~

**TABLE 903.2.5.2
GROUP H-5 SPRINKLER DESIGN CRITERIA**

LOCATION	OCCUPANCY HAZARD CLASSIFICATION
Fabrication areas	Ordinary Hazard Group 2
Service corridors	Ordinary Hazard Group 2
Storage rooms without dispensing	Ordinary Hazard Group 2
Storage rooms with dispensing	Extra Hazard Group 2
Corridors	Ordinary Hazard Group 2

~~903.2.5.3 Pyroxylin plastics.~~ ~~An automatic sprinkler system shall be provided in buildings, or portions thereof, where cellulose nitrate film or pyroxylin plastics are manufactured, stored or handled in quantities exceeding 100 pounds (45 kg).~~

~~903.2.6 Group I.~~ ~~An automatic sprinkler system shall be provided throughout buildings with a Group I fire area.~~

Exceptions:

- ~~1. An automatic sprinkler system installed in accordance with Section 903.3.1.2 shall be permitted in Group I-1 Condition 1 facilities.~~
- ~~2. An automatic sprinkler system is not required where Group I-4 day care facilities are at the level of exit discharge and where every room where care is provided has not fewer than one exterior exit door.~~
- ~~3. In buildings where Group I-4 day care is provided on levels other than the level of exit discharge, an automatic sprinkler system in accordance with Section 903.3.1.1 shall be installed on the entire floor where care is provided, all floors between the level of care and the level of exit discharge and all floors below the level of exit discharge other than areas classified as an open parking garage.~~

903.2.7 Group M. ~~An automatic sprinkler system shall be provided throughout buildings containing a Group M occupancy where one of the following conditions exists:~~

- ~~1. A Group M fire area exceeds 12,000 square feet (1115 m²).~~
- ~~2. A Group M fire area is located more than three stories above grade plane.~~
- ~~3. The combined area of all Group M fire areas on all floors, including any mezzanines, exceeds 24,000 square feet (2230 m²).~~
- ~~4. A Group M occupancy used for the display and sale of upholstered furniture or mattresses exceeds 5,000 square feet (464 m²).~~

903.2.7.1 High-piled storage. ~~An automatic sprinkler system shall be provided as required in Chapter 32 in all buildings of Group M where storage of merchandise is in high piled or rack storage arrays.~~

903.2.8 Group R. ~~An automatic sprinkler system installed in accordance with Section 903.3 shall be provided throughout all buildings with a Group R fire area.~~

903.2.8.1 Group R-3. ~~An automatic sprinkler system installed in accordance with Section 903.3.1.3 shall be permitted in Group R-3 occupancies.~~

[F] 903.2.8.2 Group R-4 Condition 1. ~~An automatic sprinkler system installed in accordance with Section 903.3.1.3 shall be permitted in Group R-4 Condition 1 occupancies.~~

[F] 903.2.8.3 Group R-4 Condition 2. ~~An automatic sprinkler system installed in accordance with Section 903.3.1.2 shall be permitted in Group R-4 Condition 2 occupancies. Attics shall be protected in accordance with Section 903.2.8.3.1 or 903.2.8.3.2.~~

[F] 903.2.8.3.1 Attics used for living purposes, storage or fuel-fired equipment. ~~Attics used for living purposes, storage or fuel-fired equipment shall be protected throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.2.~~

[F] 903.2.8.3.2 Attics not used for living purposes, storage or fuel-fired equipment. ~~Attics not used for living purposes, storage or fuel-fired equipment shall be protected in accordance with one of the following:~~

- ~~1. Attics protected throughout by a heat detector system arranged to activate the building fire alarm system in accordance with Section 907.2.10.~~
- ~~2. Attics constructed of noncombustible materials.~~
- ~~3. Attics constructed of fire retardant treated wood framing complying with Section 2303.2 of the International Building Code.~~

4. ~~The automatic sprinkler system shall be extended to provide protection throughout the attic space.~~

[F] 903.2.8.4 Care facilities. ~~An automatic sprinkler system installed in accordance with Section 903.3.1.3 shall be permitted in care facilities with five or fewer individuals in a single-family dwelling.~~

903.2.9 Group S-1. ~~An automatic sprinkler system shall be provided throughout all buildings containing a Group S-1 occupancy where one of the following conditions exists:~~

1. ~~A Group S-1 fire area exceeds 12,000 square feet (1115 m²).~~
2. ~~A Group S-1 fire area is located more than three stories above grade plane.~~
3. ~~The combined area of all Group S-1 fire areas on all floors, including any mezzanines, exceeds 24,000 square feet (2230 m²).~~
4. ~~A Group S-1 fire area used for the storage of commercial motor vehicles where the fire area exceeds 5,000 square feet (464 m²).~~
5. ~~A Group S-1 occupancy used for the storage of upholstered furniture or mattresses exceeds 2,500 square feet (232 m²).~~

903.2.9.1 Repair garages. ~~An automatic sprinkler system shall be provided throughout all buildings used as repair garages in accordance with Section 406.8 of the International Building Code, as shown:~~

1. ~~Buildings having two or more stories above grade plane, including basements, with a fire area containing a repair garage exceeding 10,000 square feet (929 m²).~~
2. ~~Buildings not more than one story above grade plane, with a fire area containing a repair garage exceeding 12,000 square feet (1115 m²).~~
3. ~~Buildings with repair garages servicing vehicles parked in basements.~~
4. ~~A Group S-1 fire area used for the repair of commercial motor vehicles where the fire area exceeds 5,000 square feet (464 m²).~~

903.2.9.2 Bulk storage of tires. ~~Buildings and structures where the area for the storage of tires exceeds 20,000 cubic feet (566 m³) shall be equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.~~

903.2.10 Group S-2 enclosed parking garages. ~~An automatic sprinkler system shall be provided throughout buildings classified as enclosed parking garages in accordance with Section 406.6 of the International Building Code where either of the following conditions exists:~~

1. ~~Where the fire area of the enclosed parking garage exceeds 12,000 square feet (1115 m²).~~

2. ~~Where the enclosed parking garage is located beneath other groups.~~

Exception: Enclosed parking garages located beneath Group R-3 occupancies.

903.2.10.1 Commercial parking garages. ~~An automatic sprinkler system shall be provided throughout buildings used for storage of commercial motor vehicles where the fire area exceeds 5,000 square feet (464 m²).~~

903.2.11 Specific buildings areas and hazards. ~~In all occupancies other than Group U, an automatic sprinkler system shall be installed for building design or hazards in the locations set forth in Sections 903.2.11.1 through 903.2.11.6.~~

903.2.11.1 Stories without openings. ~~An automatic sprinkler system shall be installed throughout all stories, including basements, of all buildings where the floor area exceeds 1,500 square feet (139.4 m²) and where there is not provided not fewer than one of the following types of exterior wall openings:~~

1. ~~Openings below grade that lead directly to ground level by an exterior stairway complying with Section 1009 or an outside ramp complying with Section 1010. Openings shall be located in each 50 linear feet (15 240 mm), or fraction thereof, of exterior wall in the story on at least one side. The required openings shall be distributed such that the lineal distance between adjacent openings does not exceed 50 feet (15 240 mm).~~
2. ~~Openings entirely above the adjoining ground level totaling not less than 20 square feet (1.86 m²) in each 50 linear feet (15 240 mm), or fraction thereof, of exterior wall in the story on at least one side. The required openings shall be distributed such that the lineal distance between adjacent openings does not exceed 50 feet (15 240 mm). The height of the bottom of the clear opening shall not exceed 44 inches (1118 mm) measured from the floor.~~

903.2.11.1.1 Opening dimensions and access. ~~Openings shall have a minimum dimension of not less than 30 inches (762 mm). Such openings shall be accessible to the fire department from the exterior and shall not be obstructed in a manner such that fire fighting or rescue cannot be accomplished from the exterior.~~

903.2.11.1.2 Openings on one side only. ~~Where openings in a story are provided on only one side and the opposite wall of such story is more than 75 feet (22 860 mm) from such openings, the story shall be equipped throughout with an approved automatic sprinkler system or openings as specified above shall be provided on not fewer than two sides of the story.~~

903.2.11.1.3 Basements. ~~Where any portion of a basement is located more than 75 feet (22 860 mm) from openings required by Section 903.2.11.1, or where walls, partitions or other obstructions are installed that restrict the application of water from~~

~~hose streams, the basement shall be equipped throughout with an approved automatic sprinkler system.~~

903.2.11.2 Rubbish and linen chutes. ~~An~~
~~Access to automatic sprinkler system systems shall be installed at the top of rubbish and linen chutes and in their terminal rooms. Chutes shall have additional sprinkler heads installed at alternate floors and at the lowest intake. Where a rubbish chute extends through a building more than one floor below the lowest intake, the extension shall have sprinklers installed that are recessed from the drop area maintained as provided for servicing of the chute and protected from freezing in accordance with Section 903.3.1.1. Such sprinklers shall be installed at alternate floors beginning with the second level below the last intake and ending with the floor above the discharge. Chute sprinklers shall be accessible for servicing.~~ automatic sprinkler system components.

903.2.11.3 Buildings 55 feet or more in height. ~~An automatic sprinkler system shall be installed throughout buildings that have one or more stories with an occupant load of 30 or more located 55 feet (16 764 mm) or more above the lowest level of fire department vehicle access, measured to the finished floor.~~

- Exceptions:**
- ~~1. Open parking structures.~~
 - ~~2. Occupancies in Group F-2.~~

903.2.11.4 Ducts conveying hazardous exhausts. ~~Where required by the International Mechanical Code, automatic sprinklers shall be provided in ducts conveying hazardous exhaust or flammable or combustible materials.~~

Exception: ~~Ducts where the largest cross-sectional diameter of the duct is less than 10 inches (254 mm).~~

903.2.11.5 Commercial cooking operations. ~~An automatic sprinkler system shall be installed in commercial kitchen exhaust hood and duct systems where an automatic sprinkler system is used to comply with Section 904.~~

903.2.11.6 Other required suppression systems. ~~In addition to the requirements of Section 903.2, the provisions indicated in Table 903.2.11.6 require the installation of a fire suppression system for certain buildings and areas.~~

**TABLE 903.2.11.6
ADDITIONAL REQUIRED FIRE SUPPRESSION SYSTEMS**

SECTION	SUBJECT

914.2.1	Covered and open mall buildings
914.3.1	High-rise buildings
914.4.1	Atriums
914.5.1	Underground structures
914.6.1	Stages
914.7.1	Special amusement buildings
914.8.2	Airport traffic control towers
914.8.3, 914.8.6	Aircraft hangars
914.9	Flammable finishes
914.10	Drying rooms
914.11.1	Ambulatory care facilities
1029.6.2.3	Smoke-protected assembly seating
1103.5.1	Pyroxylin plastic storage in existing buildings
1103.5.2	Existing Group I-2 occupancies
1103.5.3	Existing Group I-2 Condition 2 occupancies
1103.5.4	Pyroxylin plastics
2108.2	Dry cleaning plants
2108.3	Dry cleaning machines
2309.3.2.6.2	Hydrogen motor fuel-dispensing area canopies

2404.2	Spray finishing in Group A, E, I or R
2404.4	Spray booths and spray rooms
2405.2	Dip-tank rooms in Group A, I or R
2405.4.1	Dip tanks
2405.9.4	Hardening and tempering tanks
2703.10	HPM facilities
2703.10.1.1	HPM work station exhaust
2703.10.2	HPM gas cabinets and exhausted enclosures
2703.10.3	HPM exit access corridor
2703.10.4	HPM exhaust ducts
2703.10.4.1	HPM noncombustible ducts
2703.10.4.2	HPM combustible ducts
2807.3	Lumber production conveyor enclosures
2808.7	Recycling facility conveyor enclosures
3006.1	Class A and B ovens
3006.2	Class C and D ovens
Table 3206.2	Storage fire protection
3206.4	Storage
5003.8.4.1	Gas rooms

5003.8.5.3	Exhausted enclosures
5004.5	Indoor storage of hazardous materials
5005.1.8	Indoor dispensing of hazardous materials
5104.4.1	Aerosol warehouses

SECTION	SUBJECT
5106.3.2	Aerosol display and merchandising areas
5204.5	Storage of more than 1,000 cubic feet of loose combustible fibers
5306.2.1	Exterior medical gas storage room
5306.2.2	Interior medical gas storage room
5306.2.3	Medical gas storage cabinet
5606.5.2.1	Storage of smokeless propellant
5606.5.2.3	Storage of small arms primers
5704.3.7.5.1	Flammable and combustible liquid storage rooms
5704.3.8.4	Flammable and combustible liquid storage warehouses
5705.3.7.3	Flammable and combustible liquid Group H-2 or H-3 areas
6004.1.2	Gas cabinets for highly toxic and toxic

	gas
6004.1.3	Exhausted enclosures for highly toxic and toxic gas
6004.2.2.6	Gas rooms for highly toxic and toxic gas
6004.3.3	Outdoor storage for highly toxic and toxic gas
6504.1.1	Pyroxylin plastic storage cabinets
6504.1.3	Pyroxylin plastic storage vaults
6504.2	Pyroxylin plastic storage and manufacturing

For SI: 1 cubic foot = 0.023 m³.

903.2.12 During construction and demolition. *Automatic sprinkler systems required by the Uniform Statewide Building Code during construction, alteration and demolition operations shall be provided maintained in accordance with Section 3313. Chapter 33.*

903.3 Installation requirements. *Automatic sprinkler systems shall be designed and installed in accordance with Sections 903.3.1 through 903.3.8.*

903.3.1 Standards. *Sprinkler systems shall be maintained as designed and installed in accordance with Section 903.3.1.1 NFPA 13, NFPA 13R, or NFPA 13D, unless otherwise permitted by Sections 903.3.1.2 and 903.3.1.3 and other chapters of this code, as applicable. the Uniform Statewide Building Code.*

903.3.1.1 NFPA 13 sprinkler systems. *Where the provisions of this code require that a building or portion thereof be equipped throughout with an automatic sprinkler system in accordance with this section, sprinklers shall be installed throughout in accordance with NFPA 13 except as provided in Sections 903.3.1.1.1 and 903.3.1.1.2.*

903.3.1.1.1 Exempt locations. *Automatic sprinklers shall not be required in the following rooms or areas where such rooms or areas are protected with an approved automatic fire detection system in accordance with Section 907.2 that will respond to visible or invisible particles of combustion. Sprinklers shall not be omitted from a room merely because it is damp, of fire resistance-rated construction or contains electrical equipment.*

1. ~~A room where the application of water, or flame and water, constitutes a serious life or fire hazard.~~
2. ~~A room or space where sprinklers are considered undesirable because of the nature of the contents, where approved by the fire code official.~~
3. ~~Generator and transformer rooms separated from the remainder of the building by walls and floor/ceiling or roof/ceiling assemblies having a fire-resistance rating of not less than 2 hours.~~
4. ~~Rooms or areas that are of noncombustible construction with wholly noncombustible contents.~~
5. ~~Fire service access elevator machine rooms and machinery spaces.~~
6. ~~Machine rooms, machinery spaces, control rooms and control spaces associated with occupant evacuation elevators designed in accordance with Section 3008 of the International Building Code.~~

903.3.1.1.2 Bathrooms. ~~In Group R occupancies, other than Group R-4 occupancies, sprinklers shall not be required in bathrooms that do not exceed 55 square feet (5 m²) in area and are located within individual dwelling units or sleeping units, provided that walls and ceilings, including the walls and ceilings behind a shower enclosure or tub, are of noncombustible or limited combustible materials with a 15-minute thermal barrier rating.~~

903.3.1.2 NFPA 13R sprinkler systems. ~~Automatic sprinkler systems in Group R occupancies up to and including four stories in height in buildings not exceeding 60 feet (18 288 mm) in height above grade plane shall be permitted to be installed throughout in accordance with NFPA 13R.~~

~~The number of stories of Group R occupancies constructed in accordance with Sections 510.2 and 510.4 of the International Building Code shall be measured from the horizontal assembly creating separate buildings.~~

903.3.1.2.1 Balconies and decks. ~~Sprinkler protection shall be provided for exterior balconies, decks and ground floor patios of dwelling units and sleeping units where the building is of Type V construction, provided there is a roof or deck above. Sidewall sprinklers that are used to protect such areas shall be permitted to be located such that their deflectors are within 1 inch (25 mm) to 6 inches (152 mm) below the structural members and a maximum distance of 14 inches (356 mm) below the deck of the exterior balconies and decks that are constructed of open wood joist construction.~~

903.3.1.2.2 Open-ended corridors. ~~Sprinkler protection shall be provided in open-ended corridors and associated exterior stairways and ramps as specified in Section 1027.6, Exception 3.~~

903.3.1.3 NFPA 13D sprinkler systems. ~~Automatic sprinkler systems installed in one and two family dwellings; Group R-3; Group R-4 Condition 1 and townhouses shall be permitted to be installed throughout in accordance with NFPA 13D.~~

~~903.3.2 Quick-response and residential sprinklers.~~ Where *automatic sprinkler systems* are required by this code, quick response or residential automatic sprinklers shall be installed in all of the following areas in accordance with Section 903.3.1 and their listings:

- ~~1. Throughout all spaces within a smoke compartment containing care recipient sleeping units in Group I-2 in accordance with the *International Building Code*.~~
- ~~2. Throughout all spaces within a smoke compartment containing treatment rooms in ambulatory care facilities.~~
- ~~3. *Dwelling units* and *sleeping units* in Group I-1 and R occupancies.~~
- ~~4. Light hazard occupancies as defined in NFPA 13.~~

~~903.3.3 Obstructed locations.~~ Automatic sprinklers shall be installed with due regard to obstructions that will delay activation or obstruct the water distribution pattern. Automatic sprinklers shall be installed in or under covered kiosks, displays, booths, concession stands or equipment that exceeds 4 feet (1219 mm) in width. Not less than a 3 foot (914 mm) clearance shall be maintained between automatic sprinklers and the top of piles of *combustible fibers*.

~~Exception:~~ Kitchen equipment under exhaust hoods protected with a fire-extinguishing system in accordance with Section 904.

~~903.3.4 Actuation.~~ *Automatic sprinkler systems* shall be automatically actuated unless specifically provided for in this code.

~~903.3.5 Water supplies.~~ Water supplies for *automatic sprinkler systems* shall comply with this section and the standards referenced in Section 903.3.1. The potable water supply shall be protected against backflow in accordance with the requirements of this section and the *International Plumbing Code*. For connections to public waterworks systems, the water supply test used for design of fire protection systems shall be adjusted to account for seasonal and daily pressure fluctuations based on information from the water supply authority and as approved by the *fire code official*.

~~903.3.5.1 Domestic services.~~ Where the domestic service provides the water supply for the *automatic sprinkler system*, the supply shall be in accordance with this section.

~~903.3.5.2 Residential combination services.~~ A single combination water supply shall be allowed provided that the domestic demand is added to the sprinkler demand as required by NFPA 13R.

903.3.6 Hose threads. Fire hose threads and fittings used in connection with *automatic sprinkler systems* shall be maintained as prescribed approved by the *fire code official*.

~~903.3.7 Fire department connections.~~ ~~Fire department connections for automatic sprinkler systems shall be installed in accordance with Section 912.~~

~~903.3.8 Limited area sprinkler systems.~~ ~~Limited area sprinkler systems shall be in accordance with the standards listed in Section 903.3.1 except as provided in Sections 903.3.8.1 through 903.3.8.5.~~

~~903.3.8.1 Number of sprinklers.~~ ~~Limited area sprinkler systems shall not exceed six sprinklers in any single fire area.~~

~~903.3.8.2 Occupancy hazard classification.~~ ~~Only areas classified by NFPA 13 as Light Hazard or Ordinary Hazard Group 1 shall be permitted to be protected by limited area sprinkler systems.~~

~~903.3.8.3 Piping arrangement.~~ ~~Where a limited area sprinkler system is installed in a building with an automatic wet standpipe system, sprinklers shall be supplied by the standpipe system. Where a limited area sprinkler system is installed in a building without an automatic wet standpipe system, water shall be permitted to be supplied by the plumbing system provided that the plumbing system is capable of simultaneously supplying domestic and sprinkler demands.~~

~~903.3.8.4 Supervision.~~ ~~Control valves shall not be installed between the water supply and sprinklers unless the valves are of an approved indicating type that are supervised or secured in the open position.~~

~~903.3.8.5 Calculations.~~ ~~Hydraulic calculations in accordance with~~
When required by the inspections, testing, and maintenance provisions of NFPA 1325, hydraulic calculations shall be provided to demonstrate that the available water flow and pressure are adequate to supply all sprinklers installed in any single fire area with discharge densities corresponding to the hazard classification.

~~903.4 Sprinkler system supervision and alarms.~~ ~~Valves controlling the water supply for automatic sprinkler systems, pumps, tanks, water levels and temperatures, critical air pressures and waterflow switches on all sprinkler systems shall be electrically supervised by a listed fire alarm control unit.~~

Exceptions:

1. ~~Automatic sprinkler systems protecting one and two family dwellings.~~
2. ~~Limited area sprinkler systems in accordance with Section 903.3.8.~~
3. ~~Automatic sprinkler systems installed in accordance with NFPA 13R where a common supply main is used to supply both domestic water and the automatic sprinkler system, and a separate shutoff valve for the automatic sprinkler system is not provided.~~
4. ~~Jockey pump control valves that are sealed or locked in the open position.~~
5. ~~Control valves to commercial kitchen hoods, paint spray booths or dip~~

- tanks that are sealed or locked in the open position.
6. ~~Valves controlling the fuel supply to fire pump engines that are sealed or locked in the open position.~~
 7. ~~Trim valves to pressure switches in dry, preaction and deluge sprinkler systems that are sealed or locked in the open position.~~

903.4.1 Monitoring. ~~Alarm, supervisory and trouble signals shall be distinctly different and shall be automatically transmitted to an approved supervising station or, where approved by the fire code official, shall sound an audible signal at a constantly attended location.~~

Exceptions:

1. ~~Underground key or hub valves in roadway boxes provided by the municipality or public utility are not required to be monitored.~~
2. ~~Backflow prevention device test valves located in limited area sprinkler system supply piping shall be locked in the open position. In occupancies required to be equipped with a fire alarm system, the backflow preventer valves shall be electrically supervised by a tamper switch installed in accordance with NFPA 72 and separately annunciated.~~

903.4.2 Alarms. ~~An approved audible device, located on the exterior of the building in an approved location, shall be connected to each automatic sprinkler system. Such sprinkler waterflow alarm devices shall be activated by water flow equivalent to the flow of a single sprinkler of the smallest orifice size installed in the system. Where a fire alarm system is installed, actuation of the automatic sprinkler system shall actuate the building fire alarm system.~~

903.4.3 Floor control valves. ~~Approved supervised indicating control valves shall be provided at the point of connection to the riser on each floor in high-rise buildings.~~

903.5 Testing and maintenance. Sprinkler systems shall be tested and maintained in accordance with Section 901.

903.6 Where required in existing buildings and structures. ~~An automatic sprinkler system shall be provided in existing buildings and structures where required in Chapter 11.~~ accordance with Section 102.7 of this code.

SECTION 904 ALTERNATIVE AUTOMATIC FIRE-EXTINGUISHING SYSTEMS

904.1 General. Automatic fire-extinguishing systems, other than *automatic sprinkler systems*, shall be ~~designed, installed, inspected, tested and maintained~~ in accordance with the provisions of this section and the applicable referenced standards.

904.1.1 Certification of service personnel for fire-extinguishing

equipment. Service personnel providing or conducting maintenance on automatic fire-extinguishing systems, other than *automatic sprinkler systems*, shall possess a valid certificate issued by an ~~approved-governmental-agency~~, or other *approved* organization for the type of system and work performed.

~~**904.2 Where permitted.** Automatic fire-extinguishing systems installed as an alternative to the required *automatic sprinkler systems* of Section 903 shall be approved by the fire-code official.~~

904.2.1 Restriction on using automatic sprinkler system exceptions or

reductions. Automatic fire-extinguishing systems shall not be considered alternatives for the purposes of exceptions or reductions allowed for *automatic sprinkler systems* or by other requirements of this code.

Section deleted

904.2.2 Commercial hood and duct systems. Each required commercial kitchen exhaust hood and duct system required by Section ~~609~~609.2 of this code to have a Type I hood shall be protected with an *approved* automatic fire-extinguishing system installed in accordance with this code.

~~**904.3 Installation.** Automatic fire-extinguishing systems shall be installed in accordance with this section.~~

~~**904.3.1 Electrical wiring.** Electrical wiring shall be in accordance with NFPA 70.~~

~~**904.3.2 Actuation.** Automatic fire-extinguishing systems shall be automatically actuated and provided with a manual means of actuation in accordance with Section 904.11.1. Where more than one hazard could be simultaneously involved in fire due to their proximity, all hazards shall be protected by a single system designed to protect all hazards that could become involved.~~

Exception: Multiple systems shall be permitted to be installed if they are designed to operate simultaneously.

~~**904.3.3 System interlocking.** Automatic equipment interlocks with fuel shutoffs, ventilation controls, door closers, window shutters, conveyor openings, smoke and heat vents and other features necessary for proper operation of the fire-extinguishing system shall be provided as required by the design and installation standard utilized for the hazard.~~

~~**904.3.4 Alarms and warning signs.** Where alarms are required to indicate the operation of automatic fire-extinguishing systems, distinctive audible, visible alarms and warning signs shall be provided to warn of pending agent discharge. Where exposure to~~

~~automatic extinguishing agents poses a hazard to persons and a delay is required to ensure the evacuation of occupants before agent discharge, a separate warning signal shall be provided to alert occupants once agent discharge has begun. Audible signals shall be in accordance with Section 907.5.2.~~

~~904.3.5 Monitoring.~~ ~~Where a building fire alarm system is installed, automatic fire extinguishing systems shall be monitored by the building fire alarm system in accordance with NFPA 72.~~

~~904.4 Inspection and testing.~~ ~~Automatic fire extinguishing systems shall be inspected and tested in accordance with the provisions of this section prior to acceptance.~~

~~904.4.1 Inspection.~~ ~~Prior to conducting final acceptance tests, all of the following items shall be inspected:~~

- ~~1. Hazard specification for consistency with design hazard.~~
- ~~2. Type, location and spacing of automatic and manual initiating devices.~~
- ~~3. Size, placement and position of nozzles or discharge orifices.~~
- ~~4. Location and identification of audible and visible alarm devices.~~
- ~~5. Identification of devices with proper designations.~~
- ~~6. Operating instructions.~~

~~904.4.2 Alarm testing.~~ ~~Notification appliances, connections to fire alarm systems and connections to approved supervising stations shall be tested in accordance with this section and Section 907 to verify proper operation.~~

~~904.4.2.1 Audible and visible signals.~~ ~~The audibility and visibility of notification appliances signaling agent discharge or system operation, where required, shall be verified.~~

~~904.4.3 Monitor testing.~~ ~~Connections to protected premises and supervising station fire alarm systems shall be tested to verify proper identification and retransmission of alarms from automatic fire extinguishing systems.~~

~~904.5 Wet-chemical systems.~~ ~~Wet-chemical extinguishing systems shall be installed, maintained, periodically inspected and tested in accordance with NFPA 17A and their listing. Records of inspections and testing shall be maintained.~~

~~904.5.1 System test.~~ ~~Systems shall be inspected and tested for proper operation at six-month intervals. Tests shall include a check of the detection system, alarms and releasing devices, including manual stations and other associated equipment. Extinguishing system units shall be weighed and the required amount of agent verified. Stored pressure-type units shall be checked for the required pressure. The cartridge of~~

cartridge-operated units shall be weighed and replaced at intervals indicated by the manufacturer.

904.5.2 Fusible link maintenance. Fixed temperature-sensing elements shall be maintained to ensure proper operation of the system.

904.6 Dry-chemical systems. Dry-chemical extinguishing systems shall be ~~installed~~, maintained, periodically inspected and tested in accordance with NFPA 17 and their listing. Records of inspections and testing shall be maintained.

904.6.1 System test. Systems shall be inspected and tested for proper operation at six-month intervals. Tests shall include a check of the detection system, alarms and releasing devices, including manual stations and other associated equipment. Extinguishing system units shall be weighed, and the required amount of agent verified. Stored pressure-type units shall be checked for the required pressure. The cartridge of cartridge-operated units shall be weighed and replaced at intervals indicated by the manufacturer.

904.6.2 Fusible link maintenance. Fixed temperature-sensing elements shall be maintained to ensure proper operation of the system.

904.7 Foam systems. Foam-extinguishing systems shall be ~~installed~~, maintained, periodically inspected and tested in accordance with NFPA 11 and NFPA 16 and their listing. Records of inspections and testing shall be maintained.

904.7.1 System test. Foam-extinguishing systems shall be inspected and tested at intervals in accordance with NFPA 25.

904.8 Carbon dioxide systems. Carbon dioxide extinguishing systems shall be ~~installed~~, maintained, periodically inspected and tested in accordance with NFPA 12 and their listing. Records of inspections and testing shall be maintained.

904.8.1 System test. Systems shall be inspected and tested for proper operation at 12-month intervals.

904.8.2 High-pressure cylinders. High-pressure cylinders shall be weighed and the date of the last hydrostatic test shall be verified at six-month intervals. Where a container shows a loss in original content of more than 10 percent, the cylinder shall be refilled or replaced.

904.8.3 Low-pressure containers. The liquid-level gauges of low-pressure containers shall be observed at one-week intervals. Where a container shows a content loss of more than 10 percent, the container shall be refilled to maintain the minimum gas requirements.

904.8.4 System hoses. System hoses shall be examined at 12-month intervals for damage. Damaged hoses shall be replaced or tested. At five-year intervals, all hoses shall be tested.

904.8.4.1 Test procedure. Hoses shall be tested at not less than 2,500 pounds per square inch (psi)(17 238 kPa) for high-pressure systems and at not less than 900 psi (6206 kPa) for low-pressure systems.

904.8.5 Auxiliary equipment. Auxiliary and supplementary components, such as switches, door and window releases, interconnected valves, damper releases and supplementary alarms, shall be manually operated at 12-month intervals to ensure that such components are in proper operating condition.

904.9 Halon systems. Halogenated extinguishing systems shall be ~~installed~~, maintained, periodically inspected and tested in accordance with NFPA 12A and their listing. Records of inspections and testing shall be maintained.

904.9.1 System test. Systems shall be inspected and tested for proper operation at 12-month intervals.

904.9.2 Containers. The extinguishing agent quantity and pressure of containers shall be checked at six-month intervals. Where a container shows a loss in original weight of more than 5 percent or a loss in original pressure (adjusted for temperature) of more than 10 percent, the container shall be refilled or replaced. The weight and pressure of the container shall be recorded on a tag attached to the container.

904.9.3 System hoses. System hoses shall be examined at 12-month intervals for damage. Damaged hoses shall be replaced or tested. At five-year intervals, all hoses shall be tested.

904.9.3.1 Test procedure. For Halon 1301 systems, hoses shall be tested at not less than 1,500 psi (10 343 kPa) for 600 psi (4137 kPa) charging pressure systems and not less than 900 psi (6206 kPa) for 360 psi (2482 kPa) charging pressure systems. For Halon 1211 hand-hose line systems, hoses shall be tested at 2,500 psi (17 238 kPa) for high-pressure systems and 900 psi (6206 kPa) for low-pressure systems.

904.9.4 Auxiliary equipment. Auxiliary and supplementary components, such as switches, door and window releases, interconnected valves, damper releases and supplementary alarms, shall be manually operated at 12-month intervals to ensure such components are in proper operating condition.

904.10 Clean-agent systems. Clean-agent fire-extinguishing systems shall be ~~installed~~, maintained, periodically inspected and tested in accordance with NFPA 2001

and their listing. Records of inspections and testing shall be maintained.

904.10.1 System test. Systems shall be inspected and tested for proper operation at 12-month intervals.

904.10.2 Containers. The extinguishing agent quantity and pressure of the containers shall be checked at six-month intervals. Where a container shows a loss in original weight of more than 5 percent or a loss in original pressure, adjusted for temperature, of more than 10 percent, the container shall be refilled or replaced. The weight and pressure of the container shall be recorded on a tag attached to the container.

904.10.3 System hoses. System hoses shall be examined at 12-month intervals for damage. Damaged hoses shall be replaced or tested. All hoses shall be tested at five-year intervals.

904.11 Automatic water mist systems. *Automatic water mist systems* shall be permitted maintained in applications that are consistent accordance with the applicable listing or approvals NFPA 750 and shall comply with Sections 904.11.1 through 904.11.3. the manufacturers instructions.

~~**904.11.1 Design and installation requirements.** *Automatic water mist systems* shall be designed and installed in accordance with Sections 904.11.1.1 through 904.11.1.4.~~

~~**904.11.1.1 General.** *Automatic water mist systems* shall be designed and installed in accordance with NFPA 750 and the manufacturer's instructions.~~

~~**904.11.1.2 Actuation.** *Automatic water mist systems* shall be automatically actuated.~~

~~**904.11.1.3 Water supply protection.** Connections to a potable water supply shall be protected against backflow in accordance with the *International Plumbing Code*.~~

~~**904.11.1.4 Secondary water supply.** Where a secondary water supply is required for an *automatic sprinkler system*, an *automatic water mist system* shall be provided with an *approved* secondary water supply.~~

~~**904.11.2 Water mist system supervision and alarms.** Supervision and alarms shall be provided as required for *automatic sprinkler systems* in accordance with Section 903.4.~~

~~**904.11.2.1 Monitoring.** Monitoring shall be provided as required for *automatic*~~

~~sprinkler systems in accordance with Section 903.4.1.~~

904.11.2.2 Alarms. ~~Alarms shall be provided as required for automatic sprinkler systems in accordance with Section 903.4.2.~~

904.11.2.3 Floor control valves. ~~Floor control valves shall be provided as required for automatic sprinkler systems in accordance with Section 903.4.3.~~

904.11.3 Testing and maintenance. *Automatic water mist systems* shall be tested and maintained in accordance with Section 901.6.

904.12 Commercial cooking systems. The automatic fire-extinguishing system for commercial cooking systems required by Section 609.2 of this code shall be of a type recognized for protection of commercial cooking equipment and exhaust systems of the type and arrangement protected. Preengineered automatic dry and wet chemical extinguishing systems shall be tested in accordance with UL 300 and *listed* and *labeled* for the intended application. Other types of automatic fire extinguishing systems shall be *listed* and *labeled* for specific use as protection for commercial cooking operations. The system shall be installed in accordance with this code, its listing and the manufacturer's installation instructions. Automatic fire extinguishing systems of the following types shall be installed in accordance with the referenced standard indicated, as follows:

1. Carbon dioxide extinguishing systems, NFPA 12.
2. *Automatic sprinkler systems*, NFPA 13.
3. Foam-water sprinkler system or foam-water spray systems, NFPA 16.
4. Dry-chemical extinguishing systems, NFPA 17.
5. Wet-chemical extinguishing systems, NFPA 17A.
 - **Exception:** Factory-built commercial cooking recirculating systems that are tested in accordance with UL 710B and *listed*, *labeled* and installed in accordance with Section 304.1 of the *International Mechanical Code*.

904.12.1 Manual system operation. A

~~Where provided, manual actuation devices shall be located at or near a means of egress from maintained as installed in accordance with the cooking area not less than 10 feet (3048 mm) and not more than 20 feet (6096 mm) from the kitchen exhaust system. The manual actuation device shall be installed not more than 48 inches (1200 mm) nor less than 42 inches (1067 mm) above the floor~~Uniform Statewide Building Code and shall clearly identify the hazard protected. The manual actuation shall require a maximum force of 40 pounds (178 N) and a maximum movement of 14 inches (356 mm) to actuate the fire suppression system.

Exception: ~~Automatic sprinkler systems shall not be required to be equipped with manual actuation means.~~

not be obstructed.

904.12.2 System interconnection.

Where required by the Uniform Statewide Building Code, the actuation of the fire extinguishing system shall automatically shut down the fuel or electrical power supply to the cooking equipment. The fuel and electrical supply reset shall be manual.

~~**904.12.3 Carbon dioxide systems.** Where carbon dioxide systems are used, there shall be a nozzle at the top of the ventilating duct. Additional nozzles that are symmetrically arranged to give uniform distribution shall be installed within vertical ducts exceeding 20 feet (6096 mm) and horizontal ducts exceeding 50 feet (15 240 mm). Dampers shall be installed at either the top or the bottom of the duct and shall be arranged to operate automatically upon activation of the fire extinguishing system. Where the damper is installed at the top of the duct, the top nozzle shall be immediately below the damper. Automatic carbon dioxide fire extinguishing systems shall be sufficiently sized to protect all hazards venting through a common duct simultaneously.~~

~~**904.12.3.1 Ventilation system.** Commercial type cooking equipment protected by an automatic carbon dioxide extinguishing system shall be arranged to shut off the ventilation system upon activation.~~

~~**904.12.4 Special provisions for automatic sprinkler systems.** Automatic sprinkler systems protecting commercial type cooking equipment shall be supplied from a separate, readily accessible, indicating type control valve that is identified.~~

904.12.4.1 Listed sprinklers. Sprinklers replaced in accordance with NFPA 25 which are used for the protection of fryers shall be tested in accordance with UL 199E, *listed* for that application and installed in accordance with their listing.

904.12.5 Portable fire extinguishers for commercial cooking

equipment. Portable fire extinguishers shall be provided within a 30-foot (9144 mm) distance of travel from commercial-type cooking equipment. Cooking equipment involving solid fuels or vegetable or animal oils and fats shall be protected by a Class K rated portable extinguisher in accordance with Section 904.12.5.1 or 904.12.5.2, as applicable.

904.12.5.1 Portable fire extinguishers for solid fuel cooking

appliances. Solid fuel cooking appliances, whether or not under a hood, with fireboxes 5 cubic feet (0.14 m³) or less in volume shall have a minimum 2.5-gallon (9 L) or two 1.5-gallon (6 L) Class K wet-chemical portable fire extinguishers located in accordance with Section 904.12.5.

904.12.5.2 Class K portable fire extinguishers for deep fat fryers. Where hazard areas include deep fat fryers, listed Class K portable fire extinguishers shall be provided as follows:

1. For up to four fryers having a maximum cooking medium capacity of 80 pounds (36.3 kg) each: one Class K portable fire extinguisher of a minimum 1.5-gallon (6 L) capacity.
2. For every additional group of four fryers having a maximum cooking medium capacity of 80 pounds (36.3 kg) each: one additional Class K portable fire extinguisher of a minimum 1.5-gallon (6 L) capacity shall be provided.
3. For individual fryers exceeding 6 square feet (0.55 m²) in surface area: Class K portable fire extinguishers shall be installed in accordance with the extinguisher manufacturer's recommendations.

904.12.6 Operations and maintenance. Automatic fire-extinguishing systems protecting commercial cooking systems shall be maintained in accordance with Sections 904.12.6.1 through 904.12.6.3.

904.12.6.1 Existing automatic fire-extinguishing systems. Where changes in the cooking media, positioning of cooking equipment or replacement of cooking equipment occur in existing commercial cooking systems, the automatic fire-extinguishing system shall be required to comply with the applicable provisions of Sections 904.12 through 904.12.4, Uniform Statewide Building Code.

904.12.6.2 Extinguishing system service. Automatic fire-extinguishing systems shall be serviced at least every six months and after activation of the system. Inspection shall be by qualified individuals, and a certificate of inspection shall be forwarded to the *fire code official* upon completion.

904.12.6.3 Fusible link and sprinkler head replacement. Fusible links and automatic sprinkler heads shall be replaced at least annually, and other protection devices shall be serviced or replaced in accordance with the manufacturer's instructions.

- **Exception:** Frangible bulbs are not required to be replaced annually.

~~**904.13 Domestic cooking systems in Group I-2 Condition 1.** In Group I-2 Condition 1 occupancies where cooking facilities are installed in accordance with Section 407.2.6 of the *International Building Code*, the domestic cooking hood provided over the cooktop or range shall be equipped with an automatic fire-extinguishing system of a type recognized for protection of domestic cooking equipment. Preengineered automatic extinguishing systems shall be tested in accordance with UL 300A and listed and labeled for the intended application. The system shall be installed in accordance with this code, its listing and the manufacturer's instructions.~~

~~**904.13.1 Manual system operation and interconnection.** Manual actuation and system interconnection for the hood suppression system shall be in accordance with Sections 904.12.1 and 904.12.2, respectively.~~

~~904.13.2~~**904.13** Portable fire extinguishers for domestic cooking equipment in Group I-2 Condition 1. *No change to text.*

SECTION 905 STANDPIPE SYSTEMS

905.1 General. Standpipe systems shall be ~~provided in new buildings inspected, tested and structures maintained~~ in accordance with Sections 905.2 through 905.10. ~~In buildings used for high-piled combustible storage, fire protection shall be in accordance with Chapter 32.~~ the provision of this section and the applicable referenced standards.

905.2 Installation~~Maintenance~~ **standard.** Standpipe systems shall be ~~installed~~maintained in accordance with this section and NFPA 1425. Fire department connections for standpipe systems shall be in accordance with Section 912.

~~**905.3 Required Installations.** Standpipe systems shall be installed where required by Sections 905.3.1 through 905.3.8. Standpipe systems are allowed to be combined with automatic sprinkler systems.~~

Exception: ~~Standpipe systems are not required in Group R-3 occupancies.~~

~~**905.3.1 Height.** Class III standpipe systems shall be installed throughout buildings where the floor level of the highest story is located more than 30 feet (9144 mm) above the lowest level of the fire department vehicle access, or where the floor level of the lowest story is located more than 30 feet (9144 mm) below the highest level of fire department vehicle access.~~

Exceptions:

- ~~1. Class I standpipes are allowed in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2.~~
- ~~2. Class I manual standpipes are allowed in open parking garages where the highest floor is located not more than 150 feet (45 720 mm) above the lowest level of fire department vehicle access.~~
- ~~3. Class I manual dry standpipes are allowed in open parking garages that are subject to freezing temperatures, provided that the hose connections are located as required for Class II standpipes in accordance with Section 905.5.~~
- ~~4. Class I standpipes are allowed in basements equipped throughout with an automatic sprinkler system.~~
- ~~5. In determining the lowest level of fire department vehicle access, it shall not be required to consider either of the following:
 - ~~5.1. Recessed loading docks for four vehicles or less.~~
 - ~~5.2. Conditions where topography makes access from the fire department vehicle to the building impractical or impossible.~~~~

905.3.2 Group A. ~~Class I automatic wet standpipes shall be provided in nonsprinklered Group A buildings having an occupant load exceeding 1,000 persons.~~

Exceptions:

- ~~1. Open air seating spaces without enclosed spaces.~~
- ~~2. Class I automatic dry and semiautomatic dry standpipes or manual wet standpipes are allowed in buildings that are not high rise buildings.~~

905.3.3 Covered and open mall buildings. ~~Covered mall and open mall buildings shall be equipped throughout with a standpipe system where required by Section 905.3.1. Mall buildings not required to be equipped with a standpipe system by Section 905.3.1 shall be equipped with Class I hose connections connected to the automatic sprinkler system sized to deliver water at 250 gallons per minute (946.4 L/min) at the most hydraulically remote hose connection while concurrently supplying the automatic sprinkler system demand. The standpipe system shall be designed not to exceed a 50 pounds per square inch (psi)(345 kPa) residual pressure loss with a flow of 250 gallons per minute (946.4 L/min) from the fire department connection to the hydraulically most remote hose connection. Hose connections shall be provided at each of the following locations:~~

- ~~1. Within the mall at the entrance to each exit passageway or corridor.~~
- ~~2. At each floor level landing within interior exit stairways opening directly on the mall.~~
- ~~3. At exterior public entrances to the mall of a covered mall building~~
- ~~4. At public entrances at the perimeter line of an open mall building.~~
- ~~5. At other locations as necessary so that the distance to reach all portions of a tenant space does not exceed 200 feet (60 960 mm) from a hose connection.~~

905.3.4 Stages. ~~Stages greater than 1,000 square feet (93 m²) in area shall be equipped with a Class III wet standpipe system with 1¹/₂ inch and 2¹/₂ inch (38 mm and 64 mm) hose connections on each side of the stage.~~

Exception: ~~Where the building or area is equipped throughout with an automatic sprinkler system, a 1¹/₂ inch (38 mm) hose connection shall be installed in accordance with NFPA 13 or in accordance with NFPA 14 for Class II or III standpipes.~~

905.3.4.1 Hose and cabinet. ~~The 1¹/₂ inch (38 mm)~~

~~Where required by the *Uniform Statewide Building Code*, hose connections shall be equipped with sufficient lengths of 1¹/₂ inch (38 mm) hose to provide fire protection for the stage required area. Hose connections~~Hoses shall be equipped with an *approved adjustable fog*_nozzle and be mounted in a cabinet or on a rack.

~~905.3.5 Underground buildings.~~ ~~Underground buildings shall be equipped throughout with a Class I automatic wet or manual wet standpipe system.~~

~~905.3.6 Helistops and heliports.~~ ~~Buildings with a rooftop *helistop* or *heliport* shall be equipped with a Class I or III standpipe system extended to the roof level on which the *helistop* or *heliport* is located in accordance with Section 2007.5.~~

905.3.7 Marinas and boatyards. Standpipes in marinas and boatyards shall comply with Chapter 36.

~~905.3.8 Rooftop gardens and landscaped roofs.~~ ~~Buildings or structures that have rooftop gardens or landscaped roofs and that are equipped with a standpipe system shall have the standpipe system extended to the roof level on which the rooftop garden or landscaped roof is located.~~

~~905.4 Location of Class I standpipe hose connections.~~ ~~Class I standpipe hose connections shall be provided in all of the following locations:~~

- ~~1. In every required *interior exit* stairway, a hose connection shall be provided for each story above and below grade plane. Hose connections shall be located at an intermediate landing between stories, unless otherwise approved by the *fire code official*.~~
- ~~2. On each side of the wall adjacent to the *exit* opening of a horizontal *exit*.~~

~~Exception:~~ ~~Where floor areas adjacent to a horizontal *exit* are reachable from an *interior exit* stairway hose connection by a 30-foot (9144 mm) hose stream from a nozzle attached to 100 feet (30 480 mm) of hose, a hose connection shall not be required at the horizontal *exit*.~~
- ~~3. In every *exit* passageway, at the entrance from the *exit* passageway to other areas of a building.~~

~~Exception:~~ ~~Where floor areas adjacent to an *exit* passageway are reachable from an *interior exit* stairway hose connection by a 30-foot (9144 mm) hose stream from a nozzle attached to 100 feet (30 480 mm) of hose, a hose connection shall not be required at the entrance from the *exit* passageway to other areas of the building.~~
- ~~4. In covered mall buildings, adjacent to each exterior public entrance to the mall and adjacent to each entrance from an *exit* passageway or *exit corridor* to the mall. In open mall buildings, adjacent to each public entrance to the mall at the perimeter line and adjacent to each entrance from an *exit* passageway or *exit corridor* to the mall.~~
- ~~4. Where the roof has a slope less than four units vertical in 12 units horizontal (33.3 percent slope), a hose connection shall be located to serve the roof or at the highest landing of an *interior exit* stairway with access to the roof provided in accordance with Section 1011.12.~~
- ~~5. Where the most remote portion of a nonsprinklered floor or story is more than 150 feet (45 720 mm) from a hose connection or the most remote portion of a sprinklered floor or story is more than 200 feet (60 960 mm) from a hose connection, the *fire code official* is authorized to require that additional hose connections be provided in approved locations.~~

905.4.1 Protection. ~~Risers and laterals of Class I standpipe systems not located within an interior exit stairway shall be protected by a degree of fire resistance equal to that required for vertical enclosures in the building in which they are located.~~

Exception: ~~In buildings equipped throughout with an approved automatic sprinkler system, laterals that are not located within an interior exit stairway are not required to be enclosed within fire resistance-rated construction.~~

905.4.2 Interconnection. ~~In buildings where more than one standpipe is provided, the standpipes shall be interconnected in accordance with NFPA 14.~~

905.5 Location of Class II standpipe hose connections. ~~Class II standpipe hose connections shall be accessible and shall be located so that all portions of the building are within 30 feet (9144 mm) of a nozzle attached to 100 feet (30 480 mm) of hose.~~

905.5.1 Groups A-1 and A-2. ~~In Group A-1 and A-2 occupancies with occupant loads of more than 1,000, hose connections shall be located on each side of any stage, on each side of the rear of the auditorium, on each side of the balcony and on each tier of dressing rooms.~~

905.5.2 Protection. ~~Fire resistance-rated protection of risers and laterals of Class II standpipe systems is not required.~~

905.5.3 Class II system 1-inch hose. ~~A minimum 1-inch (25 mm) hose shall be allowed to be used for hose stations in light-hazard occupancies where investigated and listed for this service and where approved by the fire code official.~~

905.6 Location of Class III standpipe hose connections. ~~Class III standpipe systems shall have hose connections located as required for Class I standpipes in Section 905.4 and shall have Class II hose connections as required in Section 905.5.~~

905.6.1 Protection. ~~Risers and laterals of Class III standpipe systems shall be protected as required for Class I systems in accordance with Section 905.4.1.~~

905.6.2 Interconnection. ~~In buildings where more than one Class III standpipe is provided, the standpipes shall be interconnected in accordance with NFPA 14.~~

905.7 Cabinets. ~~Cabinets containing fire-fighting equipment, such as standpipes, fire hose, fire extinguishers or fire department valves, shall not be blocked from use or obscured from view.~~

905.7.1 Cabinet equipment identification. Cabinets shall be identified in an *approved* manner by a permanently attached sign with letters not less than 2 inches (51 mm) high in a color that contrasts with the background color, indicating the equipment contained therein.

- **Exceptions:**

1. Doors not large enough to accommodate a written sign shall be marked with a permanently attached pictogram of the equipment contained therein.
2. Doors that have either an *approved* visual identification clear glass panel or a complete glass door panel are not required to be marked.

905.7.2 Locking cabinet doors. Cabinets shall be unlocked.

- **Exceptions:**

1. Visual identification panels of glass or other *approved* transparent frangible material that is easily broken and allows access.
2. *Approved* locking arrangements.
3. Group I-3 occupancies.

905.8 Dry standpipes. ~~Dry standpipes shall not be installed.~~

~~**Exception:** Where subject to freezing and in accordance with NFPA 14.~~

905.9 Valve supervision. ~~Valves controlling water supplies shall be supervised in the open position so that a change in the normal position of the valve will generate a supervisory signal at the supervising station required by Section 903.4. Where a fire alarm system is provided, a signal shall be transmitted to the control unit.~~

~~**Exceptions:**~~

- ~~1. Valves to underground key or hub valves in roadway boxes provided by the municipality or public utility do not require supervision.~~
- ~~2. Valves locked in the normal position and inspected as provided in this code in buildings not equipped with a fire alarm system.~~

905.10 During construction. Standpipe systems required during construction and demolition operations shall ~~be provided in accordance~~comply with Section 3313.

905.11 Existing buildings. ~~Where required in Chapter 11, existing structures shall be equipped with standpipes installed in accordance with Section 905.~~

SECTION 906 PORTABLE FIRE EXTINGUISHERS

906.1 Where required. Portable fire extinguishers shall be installed in all of the following locations:

1. In new and existing Group A, B, E, F, H, I, M, R-1, R-2, R-4 and S occupancies.
 - **Exception:** In Group R-2 occupancies, portable fire extinguishers shall be required only in locations specified in Items 2 through 6 where each *dwelling unit* is provided with a portable fire extinguisher having a minimum rating of 1-A:10-B:C.
2. Within 30 feet (9144 mm) of commercial cooking equipment.
3. In areas where flammable or *combustible liquids* are stored, used or dispensed.
4. On each floor of structures under construction, except Group R-3 occupancies, in accordance with Section 3315.1.
5. Where required by the sections indicated in Table 906.1.
6. Special-hazard areas, including but not limited to laboratories, computer rooms and generator rooms, where required by the *fire code official*.

TABLE 906.1
ADDITIONAL REQUIRED PORTABLE FIRE EXTINGUISHERS

SECTION	SUBJECT
303.5	Asphalt kettles
307.5	Open burning
308.1.3	Open flames—torches
309.4	Powered industrial trucks
2005.2	Aircraft towing vehicles
2005.3	Aircraft welding apparatus
2005.4	Aircraft fuel-servicing tank vehicles
2005.5	Aircraft hydrant fuel-servicing vehicles
2005.6	Aircraft fuel-dispensing stations
2007.7	Heliports and helistops
2108.4	Dry cleaning plants

2305.5	Motor fuel-dispensing facilities
2310.6.4	Marine motor fuel-dispensing facilities
2311.6	Repair garages
2404.4.1	Spray-finishing operations
2405.4.2	Dip-tank operations
2406.4.2	Powder-coating areas
2804.3	Lumberyards/woodworking facilities
2808.8	Recycling facilities
2809.5	Exterior lumber storage
2903.5	Organic-coating areas
3006.3	Industrial ovens
3104.12	Tents and membrane structures
3206.10	High-piled storage
3315.1	Buildings under construction or demolition
3317.3	Roofing operations
3408.2	Tire rebuilding/storage
3504.2.6	Welding and other hot work
3604.4	Marinas
3703.6	Combustible fibers
5703.2.1	Flammable and combustible liquids, general

5704.3.3.1	Indoor storage of flammable and combustible liquids
5704.3.7.5.2	Liquid storage rooms for flammable and combustible liquids
5705.4.9	Solvent distillation units
5706.2.7	Farms and construction sites—flammable and combustible liquids storage
5706.4.10.1	Bulk plants and terminals for flammable and combustible liquids
5706.5.4.5	Commercial, industrial, governmental or manufacturing establishments—fuel dispensing
5706.6.4	Tank vehicles for flammable and combustible liquids
5906.5.7	Flammable solids
6108.2	LP-gas

906.2 General requirements. Portable fire extinguishers shall be selected, installed and maintained in accordance with this section and NFPA 10.

- **Exceptions:**

1. The distance of travel to reach an extinguisher shall not apply to the spectator seating portions of Group A-5 occupancies.
2. Thirty-day inspections shall not be required and maintenance shall be allowed to be once every 3 years for dry-chemical or halogenated agent portable fire extinguishers that are supervised by a *listed* and *approved* electronic monitoring device, provided that all of the following conditions are met:
 - 2.1. Electronic monitoring shall confirm that extinguishers are properly positioned, properly charged and unobstructed.
 - 2.2. Loss of power or circuit continuity to the electronic monitoring device shall initiate a trouble signal.
 - 2.3. The extinguishers shall be installed inside of a building or cabinet in a noncorrosive environment.
 - 2.4. Electronic monitoring devices and supervisory circuits shall be tested every 3 years when extinguisher maintenance is

performed.

- 2.5. A written log of required hydrostatic test dates for extinguishers shall be maintained by the *owner* to verify that hydrostatic tests are conducted at the frequency required by NFPA 10.
3. In Group I-3, portable fire extinguishers shall be permitted to be located at staff locations.

906.2.1 Certification of service personnel for portable fire

extinguishers. Service personnel providing or conducting maintenance on portable fire extinguishers shall possess a valid certificate issued by an *approved-governmental* agency, or other *approved* organization for the type of work performed.

906.3 Size and distribution. The size and distribution of portable fire extinguishers shall be in accordance with Sections 906.3.1 through 906.3.4.

**TABLE 906.3
FIRE EXTINGUISHERS FOR CLASS A FIRE HAZARDS**

	LIGHT (Low) HAZARD OCCUPANCY	ORDINARY (Moderate) HAZARD OCCUPANCY	EXTRA (High) HAZARD OCCUPANCY
Minimum rated single extinguisher	2-A ^c	2-A	4-A ^a
Maximum floor area per unit of A	3,000 square feet	1,500 square feet	1,000 square feet
Maximum floor area for extinguisher ^b	11,250 square feet	11,250 square feet	11,250 square feet
Maximum distance of travel to extinguisher	75 feet	75 feet	75 feet

For SI: 1 foot = 304.8 mm, 1 square foot = 0.0929 m², 1 gallon = 3.785 L.

- a. Two 2¹/₂ gallon water-type extinguishers shall be deemed the equivalent of one 4-A rated extinguisher.
- b. Annex E.3.3 of NFPA 10 provides more details concerning application of the maximum floor area criteria.
- c. Two water-type extinguishers each with a 1-A rating shall be deemed the equivalent of one 2-A rated extinguisher for Light (Low) Hazard Occupancies.

TABLE 906.3
FLAMMABLE OR COMBUSTIBLE LIQUIDS WITH DEPTHS OF LESS THAN OR EQUAL
TO 0.25-INCH^a

TYPE OF HAZARD	BASIC MINIMUM EXTINGUISHER RATING	MAXIMUM DISTANCE OF TRAVEL TO EXTINGUISHERS (feet)
Light (Low)	5-B 10-B	30 50
Ordinary (Moderate)	10-B 20-B	30 50
Extra (High)	40-B 80-B	30 50

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm.

- a. For requirements on water-soluble flammable liquids and alternative sizing criteria, see Section 5.5 of NFPA 10.

906.3.1 Class A fire hazards. Portable fire extinguishers for occupancies that involve primarily Class A fire hazards, the minimum sizes and distribution shall comply with Table 906.3(1).

906.3.2 Class B fire hazards. Portable fire extinguishers for occupancies involving flammable or *combustible liquids* with depths of less than or equal to 0.25-inch (6.4 mm) shall be selected and placed in accordance with Table 906.3(2).

Portable fire extinguishers for occupancies involving flammable or *combustible liquids* with a depth of greater than 0.25-inch (6.4 mm) shall be selected and placed in accordance with NFPA 10.

906.3.3 Class C fire hazards. Portable fire extinguishers for Class C fire hazards shall be selected and placed on the basis of the anticipated Class A or B hazard.

906.3.4 Class D fire hazards. Portable fire extinguishers for occupancies involving combustible metals shall be selected and placed in accordance with NFPA 10.

906.4 Cooking grease fires. Fire extinguishers provided for the protection of cooking grease fires shall be of an *approved* type compatible with the automatic fire-extinguishing system agent and in accordance with Section 904.12.5.

906.5 Conspicuous location. Portable fire extinguishers shall be located in conspicuous locations where they will be readily accessible and immediately available for use. These locations shall be along normal paths of travel, unless the *fire code official* determines that the hazard posed indicates the need for placement away from normal paths of travel.

906.6 Unobstructed and unobscured. Portable fire extinguishers shall not be obstructed or obscured from view. In rooms or areas in which visual obstruction cannot be completely avoided, means shall be provided to indicate the locations of extinguishers.

906.7 Hangers and brackets. Hand-held portable fire extinguishers, not housed in cabinets, shall be installed on the hangers or brackets supplied. Hangers or brackets shall be securely anchored to the mounting surface in accordance with the manufacturer's installation instructions.

906.8 Cabinets. Cabinets used to house portable fire extinguishers shall not be locked.

- **Exceptions:**

1. Where portable fire extinguishers subject to malicious use or damage are provided with a means of ready access.
2. In Group I-3 occupancies and in mental health areas in Group I-2 occupancies, access to portable fire extinguishers shall be permitted to be locked or to be located in staff locations provided the staff has keys.

906.9 Extinguisher installation. The installation of portable fire extinguishers shall be in accordance with Sections 906.9.1 through 906.9.3.

906.9.1 Extinguishers weighing 40 pounds or less. Portable fire extinguishers having a gross weight not exceeding 40 pounds (18 kg) shall be installed so that their tops are not more than 5 feet (1524 mm) above the floor.

906.9.2 Extinguishers weighing more than 40 pounds. Hand-held portable fire extinguishers having a gross weight exceeding 40 pounds (18 kg) shall be installed so that their tops are not more than 3.5 feet (1067 mm) above the floor.

906.9.3 Floor clearance. The clearance between the floor and the bottom of installed hand-held portable fire extinguishers shall be not less than 4 inches (102 mm).

906.10 Wheeled units. Wheeled fire extinguishers shall be conspicuously located in a designated location.

CHAPTER 9 FIRE PROTECTION SYSTEMS

Workgroup Recommendation

None

Board Decision

None