CHAPTER 4 – SPECIAL DETAILED REQUIREMENTS BASED ON USE & OCCUPANCY - AMENDMENTS

The ninth edition building code became first effective on October 20, 2017 and, with a shortened concurrency period, the new code came into full force and effect on January 1, 2018.

The new, ninth edition code is based on modified versions of the following *2015 International Codes as published by the International Code Council* (ICC).

- The International Building Code (IBC);
- International Residential Code (IRC);
- International Existing Building Code (IEBC);
- International Mechanical Code (IMC);
- International Energy Conservation Code (IECC);
- International Swimming Pool and Spa Code (ISPSC);
- Portions of the International Fire Code (IFC).

Massachusetts amends these code fairly significantly to accommodate for unique issues in the commonwealth. This package of amendments revise the IBC, IEBC, IMC, and IECC.

Please remember that the Massachusetts amendments posted on-line are ***unofficial versions*** and are meant for convenience only. Official versions of the Massachusetts amendments may be purchased from the State House Bookstore @ **Shop the Bookstore** and any of the I-Codes may be purchased from the International Code Council (ICC) @ **iccsafe.org**.

Additionally, the ICC publishes transition documents that identify changes from the 2009 to the 2015 I-Codes for those who may have interest.

- **International Building Code (IBC) Transition**
- **International Residential Code (IRC) Transition.**

780 CMR: MASSACHUSETTS AMENDMENTS TO THE *INTERNATIONAL BUILDING CODE 2015*

CHAPTER 4: SPECIAL DETAILED REQUIREMENTS BASED ON USE AND OCCUPANCY

407.1.1 Add subsection as follows:

407.1.1 M.G.L. Requirements. Hospitals, nursing homes, and convalescent homes shall be constructed of at least Type IB construction in accordance with M.G.L. c. 111, §§ 51 and 71.

Sections 427.1 through 430.5.1. Add sections as follows:

SECTION 427 BULK MERCHANDISING RETAIL BUILDINGS

427.1 General. Bulk merchandising retail buildings have different fire and life safety risks than traditional retail buildings. This section provides standards to adequately deal with these differences, and to reduce the risk of life loss, injury, and excessive property damage from fire.

427.2 Scope. The provisions of this section shall apply to buildings or structures defined as bulk merchandising retail buildings or portions thereof containing high piled combustible storage.

Unless otherwise noted in this section, the requirements for bulk merchandising retail buildings shall be in accordance with the requirements set forth for Group M and Section 414.

427.3 Definitions. The following words and terms shall, for the purposes of this section and as used elsewhere in 780 CMR, have the meanings shown below (*see* 780 CMR 2.00: *Definitions* for terms not defined below):

BULK MERCHANDISING RETAIL BUILDING. A building where sales areas contain high piled combustible commodities, or high piled, high hazard commodities as defined in 780 CMR 3.00: *Use and Occupancy Classification* and 780 CMR 4.00.

GROUP A PLASTICS. Products that utilize plastic, or non-plastic products that utilize significant plastic packaging materials, that have a high BTU content:

ABS (acrylonitrile-butadienestyrene copolymer)
Acetal (polyformaldehyde)
Acrylic (polymethyl methacrylate)
Butyl rubber
EPDM (ethylene-propylene rubber)
FRP (fiberglass reinforced polyester)
Natural rubber (expanded)
Nitrile rubber (acrylonitrilebutadiene rubber)
PET or PETE (polyethylenerephthalate)
Polybutadiene
Polycarbonate
Polyester elastomer
Polyethylene
Polypropylene
Polystyrene (expanded and unexpanded)
Polyurethane (expanded and unexpanded)
PVC (polyvinyl chloride greater than 15% plasticized, *e.g.*, coated fabric unsupported film)
SAN (styrene acrylonitrile)
SBR (styrene-butadiene rubber)

HIGH PILED COMBUSTIBLE COMMODITY. Storage of combustible materials in piles greater than 12 feet (3.658 m) in height or combustible materials on pallets, in racks or on shelves where the top of storage is greater than 12 feet (3.658 m) in height.

HIGH PILED, HIGH HAZARD COMMODITY. Storage of combustible materials such as rubber tires, Group A plastics, flammable liquids, idle pallets and commodities with similar heat release characteristics where the top of storage is greater than six feet (1.829 m) in height.

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RACK STORAGE. Combination of vertical, horizontal and diagonal members that support stored materials in fixed or portable racks.

SHELF STORAGE. Storage on structures less than 30 in. (76.2 cm) deep with shelves usually two feet (0.6 m) apart vertically and separated by approximately 30 in. (76.2 cm) aisles.

427.3.1 Commodity Classification. Commodities in storage and display shall be classified in accordance with the following NFPA standards:

13: Installation of Sprinkler Systems
30: Flammable and Combustible Liquids Code
30B: Aerosol Products, Manufacture and Storage
231: General Storage
400: Hazardous Materials Code

427.4 Fire Protection Requirements. Fire protection requirements shall be in accordance with Table 427.4.

TABLE 427.4 FIRE PROTECTION REQUIREMENTS

Commodity Class[1]	Size of High-piled Display Area[2] (sq. ft.)	Fire Protection Requirements				
		Fire Suppression System (427.5)	Fire Alarm/Notification (427.14)	Fire Department Access Doors (427.8)	Hose Connections (427.7)	Manual Smoke and Heat Vents (427.16)
I-IV	0 - 2,500	NR	NR	NR	NR	NR
	2,501 - 12,000	Yes	NR	NR	NR	NR
	Over 12,000	Yes	Yes	Yes	Yes	Yes
High Hazard	0 - 500	NR	NR	NR	NR	NR
	501 - 2,500	Yes	NR	NR	NR	NR
	2,501 - 12,000	Yes	NR	Yes	Yes	NR
	Over 12,000	Yes	Yes	Yes	Yes	Yes

NR = Not required.

1. For commodity classifications definitions, *see* Subsection 427.3.
2. Areas that are separated by 60 ft. of display area with such areas not used for high piled storage, or that are separated with a one-hour fire resistance-rated separation barrier, can be considered as separated high piled areas.
3. If the building is required to be sprinklered under 780 CMR, then the sprinkler system protecting the high piled storage area and 15 ft. beyond shall be designed in accordance with the appropriate NFPA standard(s).

427.5 Fire Suppression Systems. Fire sprinkler design and installation shall be provided in accordance with the applicable requirements set forth by NFPA 13, 30, 30B, 231, 430 or other nationally recognized codes and standards, or tests conducted in test laboratories as defined in 527 CMR: *Board of Fire Prevention Regulations*.

427.6 Storage Arrangement. Storage arrangements for fire protection purposes shall comply with requirements set forth by NFPA 13, 30, 30B, 231, 400, as listed in Appendix A, or other nationally recognized codes and standards, or tests conducted in test laboratories as defined in 527 CMR: *Board of Fire Prevention Regulations*.

427.7 Hose Connections. A Class I automatic, wet standpipe system shall be provided in accordance with NFPA 14. Hose connections shall be located around the interior perimeter of the building within five feet of all required fire department access doors, adjacent to the latch side of the door. Hose connections shall be installed to accommodate 200 feet of travel distance to any point in the building.

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Where the most remote portion of the building exceeds 200 feet of travel distance from the required access doors, additional hose connections shall be provided in locations approved by the head of the fire department. Hose connections shall be readily accessible and marked for fire department use only.

When approved by the head of the fire department, the following exceptions shall be permitted:

Exception 1: Hose connections may be omitted when the following fire department building access and fire hydrant coverage is provided: minimum 20 feet wide, unobstructed access roadways located within 20 feet of the building on at least three sides, compliant with applicable provisions of 527 CMR: *Board of Fire Prevention Regulations*; minimum ten feet wide, unobstructed access route between the access roadway and the fire department access doors; and, fire hydrants in locations approved by the head of the fire department.

Exception 2: In *lieu* of a Class I standpipe system, a Class II automatic, wet-standpipe system in accordance with NFPA 14 shall be permitted when the following fire department building access and fire hydrant coverage is provided: minimum 20 feet wide, unobstructed access roadways located within 50 feet of the building on at least three sides, compliant with applicable provisions of 527 CMR: *Board of Fire Prevention Regulations*; minimum ten feet wide, unobstructed access route between the access roadway and the fire department access doors; and, fire hydrants in locations approved by the head of the fire department. The hose connections shall be located as described above for the Class I standpipe system. Occupant hose shall not be required, and the hose connections shall be marked for fire department use only.

427.8 Fire Department Access Door. Fire department access doors shall be provided for fire department emergency access. Access doors shall be:

1. located adjacent to fire department access roadways,
2. provided with an approved exterior fire department accessible key cylinder operable lock device,
3. provided with approved fire department identification signs, and
4. provided such that all points of the floor area are accessible within 200 feet of travel distance.

Fire department access doors may be used as occupant egress doors.

427.9 Fire Department Access Roadways. Fire department access roadways shall be provided on at least two sides of the building with such access to be approved by the head of the fire department prior to any construction. Fire hydrants shall be provided in locations approved by the head of the fire department.

427.10 Means of Egress. Means of egress shall be in accordance with 780 CMR 10.00: *Means of Egress* for Group M unless otherwise modified in Section 427.

Exception: Exit access travel distance shall be limited to 200 feet. If the only means of customer entrance is through one exterior wall of the building, two thirds of the required egress width shall be located in this wall. At least one half of the required exits shall be located so as to be reached without passing through checkout stands. In no case shall checkout stands or associated railings or barriers obstruct exits, required aisles, or approaches thereto.

427.11 Flammable/Combustible Liquids. The display, storage, protection, and maximum allowable quantities of flammable and combustible liquids permitted in mercantile display areas shall be in accordance with NFPA 30.

427.12 Aerosols. The display, storage, protection, and maximum allowable quantities of aerosols permitted in mercantile occupancies shall be in accordance with NFPA 30B.

427.13 Non-flammable and Non-combustible Hazardous Materials. Non-flammable and non-combustible hazardous materials, such as: Oxidizers, Unstables (reactives), Toxics, Highly Toxics, Corrosives, and Water Reactives shall comply with Table 427.13 and applicable provisions of 527 CMR: *Board of Fire Prevention Regulations*.

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TABLE 427.13 MAXIMUM ALLOWABLE QUANTITY (MAQ) FOR HAZARDOUS MATERIALS EXEMPTIONS, PER CONTROL AREA

Material	Class	Solids in lb. (kg)[1]	Liquid in gallons (L)[1]	Gas in cubic feet[1]
Oxidizers	4	NP[2]	NP[2]	NP[2]
	3	1.150 (522)	115 (435)	168,750
	2	2.250 (1,022)	225 (852)	13,500
	1	18,000 (8,172)	1,800 (6,813)	6,750
Unstable (reactive)	4	NP[2]	NP[2]	NP[2]
	3	550 (250)	55 (208)	6,625
	2	1,150 (522)	115 (435)	2,250
	1	Unlimited	Unlimited	3,375
Toxics	All	1,000 (454)[3]	100 (379)[3]	1,580
Corrosives	All	10,000 (4,540)	1,000 (3,785)	1,580
Highly Toxic	All	20 (9)[3]	2 (8)[3]	39
Water Reactive	3	550 (250)	55 (208)	Not applicable
	2	1,150 (522)	115 (435)	
	1	Unlimited	Unlimited	

1. Quantities may be increased by 100% in sprinklered buildings.
2. Not permitted.
3. If displayed in original packaging in M or S occupancies, and intended for maintenance, operation of equipment, or sanitation; when contained in individual packaging not exceeding 100 lb. (45.4 kg) shall be limited to an aggregate of 1,200 lbs. (544.3 kg) or 220 gal (832.8 L).

427.14 Fire Alarm or Notification Systems. Either a fire alarm system or emergency notification system, as described below and approved by the head of the fire department, shall be provided:

Fire Alarm System. The fire alarm system shall include the following:

a. A fire alarm system required for life safety shall be installed, tested, and maintained in accordance with applicable requirements of 527 CMR: *Board of Fire Prevention Regulations* and NFPA 72.

b. All systems and components shall be approved for the purpose for which installed, and all installation wiring or other transmission paths shall be monitored for integrity in accordance with NFPA 72.

c. Manual fire alarm stations shall be provided in the natural path of escape near each required exit from an area. Each manual fire alarm station shall be accessible, unobstructed, visible, and of the same general type.

d. Notification signals for occupants to evacuate shall be by audible and visible signals in accordance with NFPA 72 and 527 CMR: *Board of Fire Prevention Regulations*. The general evacuation alarm signal shall operate throughout the entire building.

e. The fire alarm system shall be arranged to transmit the alarm automatically *via* any of the following means acceptable to head of the fire department and in accordance with NFPA 72:

i. Auxiliary Alarm System;
ii. Central Station Connection;
iii. Proprietary System; or
iv. Remote Station Connection.

f. The fire alarm control panel location shall be located in an area acceptable to the head of the fire department. Where required, a remote annunciator shall be located in an area acceptable to the head of the fire department.

g. Other control systems intended to make the protected premises safer for building occupants including, but not limited to, duct smoke detectors, fire/smoke dampers, smoke management systems, fire door controls, shall be installed and monitored for integrity in accordance with NFPA 72, and a distinctive supervisory signal shall be provided to indicate a condition that would impair the satisfactory operation of the equipment.

h. Supervisory attachments including, but not limited to, control valves, fire pump running conditions, float valves, shall be installed and monitored for integrity in accordance with NFPA 72 and a distinctive supervisory signal shall be provided to indicate a condition that would impair the satisfactory operation of the equipment.

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I. All building HVAC fans shall be arranged to automatically shut down on any general alarm condition. Duct smoke detectors shall not be required.

j. Water flow initiating devices shall be arranged to initiate an alarm condition within one minute of being activated. In addition, provisions shall be made to control and prevent false alarms due to water surges.

2. **Emergency Notification System.** During a fire emergency, the emergency notification system shall sound an audible alarm in a continuously attended location for the purpose of initiating the evacuation plan required under this section.

427.15 Evacuation Planning and Training. An evacuation plan shall be submitted at the time of application for a building permit as part of the required. The certificate of use and occupancy shall not be issued until the evacuation plan has been reviewed and approved by the head of the fire department. Any changes to the evacuation plan shall not be effected until a revised plan has been submitted to and approved by the head of the fire department. The evacuation plan shall detail procedures, define roles and responsibilities of employees, and shall include an egress plan indicating routes of travel to all exits. The evacuation plan shall be used to ensure the safe evacuation of all customers and employees. All employees shall be instructed and periodically trained with respect to their duties, as required by 527 CMR: *Board of Fire Prevention Regulations*.

427.16 Smoke and Heat Venting. Adequate methods of manual heat and smoke venting shall be provided. The method of operation, vent area, spacing layout, construction of vents and curtain boards or other acceptable means of addressing methods of heat and smoke venting shall be determined by an engineering evaluation and analysis. The analysis shall be reviewed and approved by the head of the fire department and shall contain sufficient detail to evaluate the hazard and effectiveness of the venting system.

SECTION 428 MOTION PICTURE AND TELEVISION PRODUCTION FACILITIES

428.1 Scope. This section addresses building code regulations for motion picture and television industry soundstages, production facilities, and approved production locations. All requirements not specified in this section shall conform to 780 CMR.

428.2 Referenced Standard. Except as otherwise noted in section 428.0, the buildings, structures and sites associated with motion picture and television industry soundstages, production facilities, and approved production locations shall be in accordance with NFPA 140 except NFPA101 does not apply. In addition, these facilities, shall meet 527 CMR: *Board of Fire Prevention Regulations* and any other applicable Massachusetts specialized codes, *see* Section 101.4.

428.3 Definitions. Definitions in NFPA 140 shall apply along with any additional terms that are defined by other reference standards.

428.4 Sound Stages and Approved Production Facilities.

428.4.1 Fire Protection. *See* NFPA 140, Section 5.11.

428.4.2 Fire Department Building Access. *See* 527 CMR: *Board of Fire Prevention Regulations*.

428.4.3 Fire Hydrants. At least one fire hydrant shall be located on each side of the building. The head of the fire department shall determine fire hydrant locations. *See* 527 CMR: *Board of Fire Prevention Regulations*.

428.4.4 Portable Fire Extinguishers. Portable fire extinguishers shall be provided and installed in accordance with NFPA 10 as listed in 780 CMR 35.00: *Referenced Standards*.

428.4.5 Automatic Sprinkler System. An automatic sprinkler system shall be designed and installed in accordance with the Extra Hazard, Group 2 requirements of NFPA 13 throughout all buildings having a soundstage, production studio or approved production facility. The automatic sprinkler system shall additionally meet the provisions of section 903, as applicable.

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428.4.6 Fire Alarm Systems.

428.4.6.1 Manual Fire Alarm System. A manual fire alarm system meeting the requirements of subsection 907.3 shall be installed in all buildings having a soundstage, production studio, or which are approved production facilities.

428.4.6.2 Alarm Notification Appliances. Alarm notification appliances shall be provided in accordance with 780 CMR 9.00: *Fire Protection Systems*. With the approval of the head of the local fire department, the alarm notification appliances may be deactivated during videotaping, filming or broadcasting of programs as long as the building is equipped with a fully operating, approved and supervised automatic sprinkler system in accordance with NFPA 13.

428.4.6.3 Supervision. The automatic sprinkler system and fire alarm system shall be supervised in accordance with 780 CMR 9.00: *Fire Protection Systems*.

428.5 Means of Egress. Means of egress shall be in accordance with 780 CMR 10.00: *Means of Egress* except NFPA 140, sections 4.10.2 and 4.10.3, and shall govern where there is conflict with 780 CMR 10.00. Means of egress shall be appropriate for the intended use and subject to the approval of the building official in consultation with the head of the fire department.

428.6 Approved Production Locations.

428.6.1 Permits. A building permit is required for structures undergoing construction, reconstruction, and modification. Other permits may be required from the local fire department or as applicable to any specialized code.

428.6.2 Foamed Plastic Materials. Foamed plastic materials affixed to the building or structure and used for decorative purposes shall meet the requirements of NFPA 140, Chapter 5.

428.6.3 Structural Loads. Buildings or structures shall be evaluated for increased loading caused by sets, scenery, and other equipment in accordance with 780 CMR.

428.6.4 Fire Department Access. *See* 527 CMR: *Board of Fire Prevention Regulations*.

428.6.5 Means of Egress. *See* 780 CMR 10.00: *Means of Egress*.

428.7 Operating Features.

428.7.1 Audience Life Safety. When a live audience is present for a production, the provisions for life safety and means of egress shall be subject to the approval of the local building official in consultation with the head of the local fire department.

428.7.2 Notification in Event of Emergency. The production company shall provide the head of the local fire department an emergency notification procedure for the production location activities for review and approval. *See* 527 CMR: *Board of Fire Prevention Regulations*.

SECTION 429 SUMMER CAMPS FOR CHILDREN

429.1 New and Existing Occupancies. This section shall apply to existing and new summer camps for children. The use of such accommodations for purposes of inspection and certification shall be considered as being similar to a dormitory in Use Group R-2.

429.2 Means of Egress. All one-story, one-room buildings having 1,000 ft.^{2} or fewer and having 25 occupants or fewer shall require only one means of egress provided that:

1. the length of travel does not exceed 50 feet from any point in the building to the outside at grade; and
2. the minimum width for aisles and corridors shall be three feet.

429.2.1 Emergency Escape. Every sleeping room shall have at least one exterior door or openable window to permit emergency exit or rescue; the windows shall conform to the following requirements:

1. shall be openable from the inside without the use of separate tools;
2. the sill height shall not be more than 36 inches above the finish floor and with a maximum six foot drop from the window sill to grade below the window; and

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3. provide a minimum net clear opening area 5.7 ft.^{2}. The minimum net clear opening dimensions shall be 20 X 24 inches in either direction.

429.3 Fire Protection. Smoke detectors shall be required for existing and new residential units in accordance with Section 907. When applicable, carbon monoxide (CO) detectors shall be required in summer camps for children. In new construction of summer camps for children, and where applicable, CO detectors shall be hard-wired and interconnected or otherwise be of an acceptable wireless type and conform to location requirements and listing requirements as set forth in 780 CMR, 527 CMR: *Board of Fire Prevention Regulations* or 248 CMR: *Board of State Examiners of Plumbers and Gas Fitters*, as applicable. For existing summer camps for children undergoing alterations, additions, *etc.*, refer to 780 CMR 34.00: *Existing Building Code*.

For existing day care centers, located on the premises of summer camps for children, CO detectors shall conform to the requirements of 780 CMR, 527 CMR or 248 CMR, as applicable.

Exception: Tents and other temporary shelters which are designed to sleep less than eight persons and which have an open side consisting of greater than 1/6 of the perimeter of the shelter or which have built-in provisions for emergency escape.

429.4 Mechanical. If camps are heated, then the building shall conform to all applicable code sections and specialized codes.

429.5 Enforcement and Inspections. Enforcement shall be by the building official who shall inspect and certify the summer camps yearly, prior to season opening.

SECTION 430 NIGHTCLUBS

430.1 General. All buildings containing a nightclub with an occupant load 50 or greater shall comply with the provisions of this section and other applicable provisions of 780 CMR.

430.2 Sprinkler Protection. An approved automatic sprinkler system shall be provided throughout buildings containing a nightclub in accordance with Section 903.3.1.1.

430.3 Foam Plastics and Interior Finishes. Foam plastics shall not be used in nightclubs as interior finish except as provided in Section 803.4 and shall not be used as interior trim except as provided in Section 806.5 or 2604.2. This section shall apply both to exposed foam plastics and to foam plastics used in conjunction with a textile or vinyl facing or cover.

430.4 Entertainment System Response. The activation of any fire protection system element (signaling system, detection, sprinklering, *etc.*) shall automatically cause immediate:

1. illumination of all areas and components of the required means of egress, and additionally;
2. full activation of all other house lighting; and
3. stopping of any and all sounds and visual distractions (public address systems, entertainment and dance lighting, music, *etc.*) that conflict/compete with the fire protective signaling system.

430.5 Main Exit. The main entrance egress system shall be sized such that the width of all required means of egress elements is a minimum of 72 inches (nominal) or as determined by Section 1029.2, whichever is greater. The main entrance/exit door system shall consist of a pair of side-hinged swinging type doors without a center mullion and shall be equipped with panic hardware.

430.5.1 Alternative Egress. The building official may allow an alternative means of compliance where conditions exist which would preclude the installation of a 72-inch egress system, This approval is contingent upon the submission of an egress analysis from a registered design professional which determines that there is adequate means of egress. As a condition of an alternative egress approach, low level exit pathway marking shall be provided in accordance with Sections 1024.2 through 1024.5.

NON-TEXT PAGE