

BFAAM Apprenticeship Program

Period 3

Module 5 – Michigan Building Code

Reading material associated with this
module: Chapter 9, sections 907.3 – 907.8 of
the Michigan Building Code, 2015 edition

2015 MBC Section 907

Fire Safety Functions

■ Fire Safety Functions

- Automatic fire detectors utilized for the purpose of performing fire safety functions shall be connected to the building FA system where a FA system is required by Section 907.2
- Detectors shall perform their intended function AND activate the building notification appliances, OR activate a visible and audible supervisory signal at a constantly attended location

907.3

2015 MBC Section 907

Fire Safety Functions

- In buildings not equipped with a FA system, the automatic fire detector shall be powered by normal electrical service and, upon actuation, perform the intended function. The detectors shall be located in accordance with NFPA 72

907.3

2015 MBC Section 907

Fire Safety Functions

- Duct smoke detectors shall be listed for the air velocity, temperature and humidity present in the duct; shall be connected to the building FA when a FA is required by Section 907.2
- Activation shall initiate a visible and audible supervisory signal at a constantly attended location and shall perform the intended fire safety function 907.3.1

2015 MBC Section 907

Fire Safety Functions

- Duct smoke detectors shall not be used as a substitute for required open area detection
 - Exceptions to supervisory signal requirement
 - Not required if alarm notification appliances are activated
 - If no FA installed, a visible and audible signal shall be provided in an approved location for both alarm and trouble signals
- 907.3.1

2015 MBC Section 907 Fire Safety Functions

- Where delayed egress locks are installed on means of egress doors, and automatic smoke or heat detection system shall be installed in accordance with Section 1010.1.9.7 of this code

907.3.2

2015 MBC Section 907

Fire Safety Functions

- Section 1010.1.9.7: Approved, listed, delayed egress locks shall be permitted to be installed on doors serving any occupancy except Group A, E, and H occupancies in buildings that are equipped throughout with an automatic sprinkler system or and approved automatic smoke or heat detection system installed in accordance with Section 907... 1010.1.9.7

2015 MBC Section 907 Fire Safety Functions

- Automatic fire detectors installed for elevator emergency operation shall be installed in accordance with the provisions of ASME A17.1 and NFPA 72

907.3.3

2015 MBC Section 907 Fire Safety Functions

- The wiring to the auxiliary devices and equipment used to accomplish the fire safety functions shall be monitored for integrity in accordance with NFPA 72

907.3.4

2015 MBC Section 907

Initiating Devices

- In areas not continuously occupied, a single smoke detector shall be provided at the location of each fire alarm control unit, notification appliance circuit extender, and supervising station transmitting equipment
- Exception:
 - Where ambient conditions prohibit installation of a smoke detector, a heat detector shall be permitted.

907.4.1

2015 MBC Section 907

Initiating Devices

- Where a manual fire alarm system is required by another section of this code, it shall be activated by fire alarm boxes installed in accordance with Sections 907.4.2.1 through 907.4.2.6

907.4.2

2015 MBC Section 907

Initiating Devices

- Manual fire alarm boxes shall be located not more than 5 feet from the entrance to each exit. Additional boxes shall be located so that travel distance to the nearest box does not exceed 200 feet 907.4.2.1
- The height of the box shall be a minimum of 42" and a maximum of 48" from the floor level to the activating handle of the box 907.4.2.2

2015 MBC Section 907

Initiating Devices

- Manual fire alarm boxes shall be red in color
907.4.2.3
- Where fire alarm systems are not monitored by a supervising station, and approved permanent sign shall be installed adjacent to each box that reads: WHEN ALARM SOUNDS CALL FIRE DEPARTMENT
907.4.2.4

2009 MBC Section 907

Initiating Devices

- The fire code official is authorized to require the installation of listed manual fire box protective covers to prevent malicious false alarms or to provide protection from physical damage. The protective cover shall be transparent or red with a transparent face to permit visibility of the fire alarm box. Each cover shall include proper operation instructions. (Continued on next slide)

2015 MBC Section 907

Initiating Devices

- A protective cover that emits a local alarm signal shall not be installed unless approved. Protective covers shall not project more than that permitted by Section 1003.3.3 (4" for post mounted objects, 4" over any walking surface)

907.4.2.5

2015 MBC Section 907

Initiating Devices

- Where an automatic smoke detection system is required, it shall use smoke detectors unless the ambient conditions prohibit such an installation. In spaces where smoke detectors cannot be used, approved automatic heat detectors shall be permitted

907.4.3

2015 MBC Section 907

Initiating Devices

- For conditions other than specific fire safety functions noted in Section 907.3, in areas where ambient conditions prohibit the installation of smoke detectors, an automatic sprinkler system installed in accordance with this code and connected to the fire alarm system, shall be approved as automatic heat detection.

907.4.3.1

2015 MBC Section 907

Occupant Notification

- A fire alarm system shall annunciate at the panel and shall initiate occupant notification upon activation. Where a fire alarm system is required by another section of this code it shall be activated by:
 - Automatic fire detectors
 - Sprinkler waterflow devices
 - Manual fire alarm boxes
 - Automatic fire extinguishing systems

907.5

2015 MBC Section 907 Occupant Notification

- A presignal feature shall not be installed unless approved by the fire code official and the fire department. Where a presignal feature is provided, a signal shall annunciate at a constantly attended location approved by the fire department, in order that occupant notification can be activated in the event of fire or other emergency

907.5.1

2015 MBC Section 907 Occupant Notification

- Alarm notification appliances shall be provided and shall be listed for their purpose 907.5.2
- Audible alarm notification appliances shall emit a distinctive sound that is not to be used for any other purpose other than that of a fire alarm.
- Exceptions for Group I-2 in compliance with conditions. 907.5.2.1

2015 MBC Section 907

Occupant Notification

- The audible appliances shall provide a sound pressure level of 15 dBA above the ambient sound level or 5 dBA above the maximum sound level of more than 60 seconds, whichever is greater, in every occupiable space within the building.

907.5.2.1.1

2015 MBC Section 907 Occupant Notification

- The maximum sound pressure level for audible alarm notification appliances shall be 110 dBA at the minimum hearing distance from the audible appliance. Where the average ambient noise level is greater than 95 dBA, visible alarm notification appliances shall be provided and audible appliances shall not be required

907.5.2.1.2

2015 MBC Section 907

Occupant Notification

- EVACS required by this code shall be designed and installed per NFPA 72. The operation of any automatic fire detector, sprinkler waterflow or manual fire alarm box shall automatically sound an alert tone followed by voice instructions giving approved information for a general or staged evacuation. In high rise buildings, the system shall operate on a minimum

2015 MBC Section 907

Occupant Notification

- of the alarming floor, the floor above and the floor below. Speakers shall be provided throughout the building by paging zones. At a minimum, paging zones shall be:
 - Elevator groups
 - Interior exit stairways
 - Each floor
 - Areas of refuge

907.5.2.2

2015 MBC Section 907 Occupant Notification

- A manual override for emergency voice communication shall be provided on a selective and all-call basis for all paging zones

907.5.2.2.1

- The EVACS shall also have the capability to broadcast live voice messages by paging zones on a selective and all-call basis

907.5.2.2.2

2015 MBC Section 907 Occupant Notification

- The EVACS shall be allowed to be used for other announcements, provided the manual fire alarm use takes precedence over any other use

907.5.2.2.3

- EVACS shall be provided with an approved emergency power source

907.5.2.2.5

2015 MBC Section 907 Occupant Notification

- Visible alarm notification appliances shall be provided in accordance with Sections 907.5.2.3.1 through 907.5.2.3.4
- Exceptions:
 - Not required in alterations, except where an existing FA system is upgraded, replaced, or new
 - Not required in exits (defined in Section 1002.1)
 - Not required in elevator cars

907.5.2.3

2015 MBC Section 907 Occupant Notification

- Visible alarm notification appliances shall be provided in public use areas and common use areas.

907.5.2.3.1

- Common use: “Interior or exterior circulation paths, rooms, spaces or elements that are not for public use and are made available for the shared use of two or more people”

2015 MBC Section 907 Occupant Notification

- Where employee work areas have audible alarm coverage, the notification appliance circuits service the employee work areas shall be initially designed with a minimum of 20% spare capacity to account for the potential of adding visible notification appliances in the future to accommodate hearing impaired employees

907.5.2.3.1

2015 MBC Section 907

Occupant Notification

- Group I-1 and R-1 dwelling or sleeping units, in accordance with table 907.5.2.3.2 shall be provided with a visible alarm notification appliance, activated by both the in-room smoke alarm and the building fire alarm system

907.5.2.3.2

2015 MBC Section 907

Occupant Notification

- In Group R-2 dwelling occupancies required to have a fire alarm system, all dwelling units and sleeping units shall be provided with the capability to support visible alarm notification appliances

907.5.2.3.4

2015 MBC Section 907 Fire Alarm Installation

- A fire alarm system shall be installed and monitored in accordance with this section and NFPA 72
- Wiring shall comply with NFPA 70 and NFPA 72. Wireless devices shall comply with NFPA 72
- Fire alarm primary and secondary power supply shall be provided in accordance with NFPA 72
 - Exception: Back-up power for single and multiple station smoke alarms as required in Section 907.2.11.6

907.6, 907.6.1, 907.6.2

2015 MBC Section 907 Fire Alarm Installation

- Each floor shall be zoned separately and a zone shall not exceed 22,500 sq. ft. The length of any zone shall not exceed 300 feet in any direction
- Zoning indicator panel shall be provided in an approved location, and shall lock in the zone display until the system is reset

907.6.4, 907.6.4.1

2015 MBC Section 907 Fire Alarm Installation

- High rise buildings shall have a separate zone by floor for:
 - Smoke detectors
 - Sprinkler waterflow devices
 - Manual fire alarm boxes
 - Other approved types of automatic fire detection devices or suppression systems

907.6.4.2

2015 MBC Section 907 Fire Alarm Installation

- Access shall be provided to each fire alarm device and notification appliance for periodic inspection, maintenance and testing 907.6.5
- Fire Alarm systems required by this chapter or the IFC shall be monitored by an approved supervising station in accordance with NPFA 72 907.6.6

2015 MBC Section 907 Fire Alarm Installation

- Monitoring is not required for:
 - Single/Multiple Station smoke alarms
 - Smoke detectors in Group I-3 occupancies
 - Automatic sprinkler systems in 1 and 2 family dwellings 907.6.6

- Automatic telephone dialing devices shall not be connected to any fire department number unless approved by the fire chief 907.6.6.1

2015 MBC Section 907

Acceptance Testing

- Acceptance Testing per NFPA 72 shall be provided for fire alarm components and single and multiple station devices
- Record of Completion per NFPA 72 shall be provided
- Operating, testing and maintenance instructions and record drawings shall be provided

907.7, 907.7.1, 907.7.2, 907.7.3

2015 MBC Section 907 Inspection, Testing & Maintenance

- The maintenance and testing schedules and procedures for fire alarm and fire detection systems shall be in accordance with Section 907.8 of the IFC
907.8
- The building owner shall be responsible for ensuring that the fire and life safety systems are maintained. Service personnel shall meet the qualification requirements of NFPA 72 for maintaining, inspecting and testing such systems
IFC 907.8

BFAAM Apprenticeship Program

Period 3

Reading Assignment for

Module 6 – Michigan Building Code

Reading material associated with this
module: Chapter 9, sections 911 – 916,
Chapters 10 and 11 of the Michigan Building
Code, 2015 edition