

# **BFAAM Apprenticeship Program**

Period 3

Module 4 – Michigan Building Code

Reading material associated with this  
module: Chapter 9, sections 907.1 – 907.2 of  
the Michigan Building Code, 2015 edition

# 2015 MBC Section 907

## Construction Documents

- Construction documents shall indicate the location, extent and nature of the work proposed, and show in detail that it will conform to the provisions of this code, the IFC, and relevant laws, ordinances, rules and regulations, as determined by the fire code official

907.1.1

# 2015 MBC Section 907 Construction Documents

- Fire alarm shop drawings shall be submitted for review and approval prior to system installation, and shall include all of the following:
  - Use of all rooms
  - Locations of alarm initiating devices
  - Locations of alarm notification appliances, with candela ratings for strobe devices

907.1.2

# 2015 MBC Section 907 Construction Documents

- Shop drawing requirements continued
  - Location of FACP and power supplies
  - Annunciators
  - Power connection
  - Battery calculations
  - Wiring type and size
  - Voltage drop calculations
  - Manufacturer data sheets for equipment

907.1.2

# 2015 MBC Section 907 Construction Documents

- Shop drawing requirements continued
  - Details of ceiling height and construction
  - Interface of fire safety control functions (AHU shutdown, damper closure, access control systems, door holders, etc.)
  - Classification of the supervising station (Remote Station, Proprietary Station or Central Station)
- Equipment shall be listed and approved for the purpose for which it is installed 907.1.2, 3

# 2015 MBC Section 907

## Fire Alarms – Where required

- An approved fire alarm system installed in accordance with this code and NFPA 72 shall be provided in new buildings and structures in accordance with 907.2.1 through 907.2.23 and provide occupant notification in accordance with Section 907.5, unless other requirements are provided by another section of this code

907.2

# 2015 MBC Section 907

## Fire Alarms – Where required

- A minimum of one manual fire alarm box shall be provided in an approved location to initiate a fire alarm signal for fire alarm systems employing automatic fire detectors or waterflow detection devices. Where other sections of this code allow elimination of fire alarm boxes due to sprinklers, a single fire alarm box shall be installed

907.2

# 2015 MBC Section 907

## Fire Alarms – Where required

- Exceptions to manual fire alarm box requirement
  - 1. Not required for fire alarm systems dedicated to elevator recall control and supervisory service
  - 2. Not required for Group R-2 occupancies unless required by the fire code official to provide a means for fire watch personnel to initiate an alarm. Shall not be in an area accessible to the public

907.2 exceptions 1 and 2



# 2015 MBC Section 907

## Fire Alarms - Where Required

- Group A Occupancies with an occupant load of 300 or more require a manual fire alarm system, although the manual fire alarm boxes can be deleted in a fully sprinkled building when the alarm notification appliances activate on sprinkler waterflow

907.2.1

# 2015 MBC Section 907

## Fire Alarms - Where Required

- A manual fire alarm system consists of manual fire alarm boxes, (pull stations) that activate the occupant notification system in accordance to Section 907.5.

# 2015 MBC Section 907

## Fire Alarms - Where Required

- Group A Occupancies with an occupant load of 1,000 or more require an emergency voice alarm/communications system (EVACS)

907.2.1.1

# 2015 MBC Section 907

## Fire Alarms - Where Required

- Group B Occupancies with an occupant load of 500 or more, or more than 100 persons above or below the lowest level of exit discharge require a manual fire alarm system, although the manual fire alarm boxes can be deleted in a fully sprinklered building when the alarm notification appliances activate on sprinkler waterflow

907.2.2

# 2015 MBC Section 907

## Fire Alarms - Where Required

- Group B ambulatory health care facilities require an automatic smoke detection system, although the automatic smoke detection can be deleted in a fully sprinklered building when the alarm notification appliances activate on sprinkler waterflow

907.2.2.1

# 2015 MBC Section 907

## Fire Alarms - Where Required

- Group E Occupancies with an occupant load greater than 50 or more require a manual fire alarm system
  - Exception for deleting manual pulls/sprinkler
  - Most E occupancies under jurisdiction of BFS (Bureau of Fire Services), with some exceptions, such as a non K-12 school or training facility

907.2.3

# 2015 MBC Section 907

## Fire Alarms - Where Required

- Group F Occupancies that are two or more stories in height and have an occupant load of 500 or more above or below the lowest level of exit discharge (LED), require a manual fire alarm system
  - Exception for deleting manual pulls/sprinkler

907.2.4

# 2015 MBC Section 907

## Fire Alarms - Where Required

- Group H-5 Occupancies require a manual fire alarm system that activates the occupant notification in accordance to 907.5. An automatic smoke detection system is required for highly toxic gases, organic peroxides, and oxidizers

907.2.5



# 2015 MBC Section 907

## Fire Alarms - Where Required

- Group I Occupancies require a manual fire alarm system and automatic smoke detection in Groups I-1, I-2, and I-3 however this is generally under the jurisdiction of the BFS and the specific health care rules

907.2.6

# 2015 MBC Section 907

## Fire Alarms - Where Required

- Group M Occupancies with an occupant load of 500 or more, or more than 100 persons above or below the lowest level of exit discharge require a manual fire alarm system
  - Exception for deleting manual pulls/sprinkler
  - Exception for covered mall buildings complying with Section 402 (>50,000 sq. ft.)

907.2.7

# 2015 MBC Section 907

## Fire Alarms - Where Required

- Group M Occupant Notification – During times the building is occupied, the notification appliances are not required to activate when an alarm signal is activated at a constantly attended location from which evacuation instructions can be initiated over an EVACS installed in accordance with this code and NFPA 72

907.2.7.1

# 2015 MBC Section 907

## Fire Alarms - Where Required

- Group R-1 (Transient) Occupancies:
- Manual fire alarm system
  - Except for buildings not more than 2 stories with all individual sleeping units including attics and crawl spaces separated from each other and public/common areas by a 1 hour separation AND each unit has an exit directly to a public way, exit court, or yard

907.2.8.1

# 2015 MBC Section 907

## Fire Alarms - Where Required

- Group R-1 (Transient) Occupancies:
- Automatic smoke detection system
  - Except for buildings without interior corridors serving sleeping units AND where each sleeping unit has a means of egress door opening directly to an exterior exit access that leads directly to an exit.

907.2.8.2

# 2015 MBC Section 907

## Fire Alarms - Where Required

- Group R-1 (Transient) Occupancies
- Single/Multiple station smoke alarms:
  - In sleeping areas
  - In every room between the sleeping area and the exit door
  - In each story including basements

907.2.8.3

# 2015 MBC Section 907

## Fire Alarms - Where Required

- Single station smoke alarms defined as: An assembly incorporating the detector, the control equipment and the alarm-sounding device in one unit, operated from a power supply either in the unit or obtained at the point of installation. Multiple station smoke alarms are two or more interconnected single station smoke alarms

902.1

# 2015 MBC Section 907

## Fire Alarms - Where Required

- Group R-1 (Transient) Occupancies:
- Smoke alarms (non-sprinklered buildings):
  - Must be connected to an emergency electrical system (generator power)
  - Must be annunciated by sleeping unit at a constantly attended location from which the fire alarm is capable of being activated

907.2.8.3



# 2015 MBC Section 907

## Fire Alarms - Where Required

- Group R-2 (Permanent) Occupancies:
- Manual fire alarm system where:
  - Any dwelling or sleeping unit 3 or more stories above lowest level of exit discharge
  - Any dwelling or sleeping unit more than 1 story below highest level of exit discharge
  - The building contains more than 16 dwelling or sleeping units

907.2.9.1

# 2015 MBC Section 907

## Fire Alarms - Where Required

- Group R-2 (Permanent) Occupancies:
- Manual fire alarm system exceptions:
  - Building not more than 2 stories and all units separated by 1 hour separation, and each unit has an individual exit
  - Exception for deleting manual pulls/sprinkler
  - Building without interior corridors and sprinklered, and each unit has individual exit

907.2.9

# 2015 MBC Section 907

## Fire Alarms - Where Required

- Group R-4 (Assisted Living) Occupancies require manual fire alarm, automatic smoke detection, and smoke alarms
- Exceptions:
  - Building not more than 2 stories and all units separated by 1 hour separation, and each unit has an individual exit
  - Exception for deleting manual pulls/sprinkler
  - Pull stations may be located at nurses stations instead of exits

907.2.10.1, .2

# 2015 MBC Section 907 Smoke Alarms - Where Required

- Group R-1 (Transient), R-2 (Permanent), R-3 (Single Family), R-4 (Assisted Living) Occupancies and I-1 (Group Homes)
- Smoke alarms:
  - Outside each separate sleeping area
  - In each sleeping room
  - In each story including basements, but not including crawl spaces and uninhabitable attics

907.2.11.1, 2

# 2015 MBC Section 907 Smoke Alarm Requirements

- Listed to UL 217
- Connected to primary power from the building wiring in new construction
- Equipped with a backup battery, with an audible signal when the battery is low
- Or, non rechargeable battery capable of powering the smoke alarm for five years

907.2.11.8.1

# 2015 MBC Section 907

## Smoke Alarm Requirements

- Or, a rechargeable battery with proper charging, able to power the alarm for a life of five years
- May also use a commercial fire alarm system with battery backup listed to NFPA 72
- Audible notification shall be audible in all occupiable dwelling areas

907.2.11.8.1

# 2015 MBC Section 907

## Fire Alarms - Where Required

- Special amusement buildings shall have an automatic smoke detection system. Activation of the system shall immediately sound an alarm at a constantly attended location from which emergency action can be initiated

907.2.12

# 2015 MBC Section 907

## Fire Alarms - Where Required

- Special amusement buildings: Activation of 2 or more smoke detectors, a single smoke detector with alarm verification, or activation of the sprinkler system shall:
  - Illuminate means of egress
  - Stop conflicting sounds and visual distractions
  - Activate directional exit marking system

907.2.12.2



# 2015 MBC Section 907

## Fire Alarms - Where Required

- Special amusement buildings shall also have an emergency voice/alarm communications system installed in accordance with NFPA 72

907.2.12.2

# 2015 MBC Section 907

## Fire Alarms - Where Required

- High Rise Buildings (A floor used for human occupancy more than 55' above the lowest level of fire department vehicle access) shall have automatic fire alarm system and an EVAC system

907.2.13

# 2015 MBC Section 907

## High Rise Fire Alarms

- Automatic smoke detection requirement:
  - In each mechanical equipment, electrical, transformer, telephone equipment or similar room which is not provided with sprinkler protection
  - In each elevator machine room and in elevator lobbies

907.2.13.1.1

# 2015 MBC Section 907

## High Rise Fire Alarms

- Automatic duct smoke detection requirement:
  - In main return and exhaust air plenum of each HVAC system > 2,000 CFM
  - At each connection to a vertical return duct or riser serving two or more stories

907.2.13.1.2

# 2015 MBC Section 907

## High Rise Fire Alarms

- Emergency Voice Alarm/Communications
  - Fire department radio coverage systems are preferred, wired systems may be approved instead
  - Fire department two way communications system (fire phones) between command center and elevators, elevator lobbies, emergency/standby power rooms, fire pump rooms, areas of refuge and inside enclosed exit stairways at each floor

907.2.13.2

# 2015 MBC Section 907

## Fire Alarms - Where Required

- Buildings with atriums connecting more than two stories shall have a fire alarm system installed. Occupancies in Group A, E or M shall be provided with an emergency voice alarm/communications systems

907.2.14

# 2015 MBC Section 907

## Fire Alarms - Where Required

- An automatic fire detection system shall be installed throughout high piled combustible storage areas where required by the IFC (depends on square footage of storage area and whether the space is sprinklered)

907.2.15

# 2015 MBC Section 907

## Fire Alarms - Where Required

- Aerosol storage rooms and general purpose warehouses containing aerosols shall be provided with an approved manual fire alarm system as required by the IFC (doors opening into segregated storage area may be held open if closed by automatic sprinkler activation or automatic detection activation)

907.2.16



# 2015 MBC Section 907

## Fire Alarms - Where Required

- Lumber, wood structural panel, and veneer mills shall be provided with a manual fire alarm system

907.2.17

# 2015 MBC Section 907

## Fire Alarms - Where Required

- Underground buildings equipped with a smoke exhaust system shall have smoke detectors located as follows:
  - Mechanical, electrical, phone, and elevator machine rooms or similar rooms
  - Elevator lobbies
  - Main return and exhaust plenums of HVAC units
  - Each connection to a vertical duct serving 2 or more floors

907.2.18

# 2015 MBC Section 907

## Fire Alarms - Where Required

- Underground buildings with the lowest level more than 60' below ground level shall be equipped with a manual fire alarm system, including an emergency voice alarm / communications system per NFPA 72

907.2.19

# 2015 MBC Section 907

## Fire Alarms - Where Required

- Covered or open mall buildings exceeding 50,000 square feet in total floor area shall be provided with an emergency voice alarm / communications system in accordance with NFPA 72

907.2.20

# 2015 MBC Section 907

## Fire Alarms - Where Required

- Residential aircraft hangars shall have a minimum of one smoke alarm, and it shall be interfaced to the dwelling smoke alarms

907.2.21

- Airport traffic control towers shall have an automatic fire detection system

907.2.22

# 2015 MBC Section 907

## Fire Alarms - Where Required

- Battery rooms containing stationary storage batteries with a liquid capacity of more than 50 gallons shall be provided with an automatic smoke detection system.

907.2.23

# **BFAAM Apprenticeship Program**

Period 3

Reading Assignment for

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