



BURGLAR ESTABLISHED 1981
& FIRE ALARM

ASSOCIATION OF **MICHIGAN**

APPRENTICESHIP PROGRAM

Period 3
Related Training Instruction (RTI)
Module 4 – Michigan Building Code (MBC), Chapter 9
Part 2

Reading material associated with this module:
Chapter 9
Michigan Building Code (MBC), 2021 Edition

**Michigan Building Code (MBC), 2021
Edition
Chapter 9 – Sections 907.1 to 907.2**

2021 Michigan Building Code (MBC)

Chapter 9 – Fire Protection and Life Safety Systems:

- Section 907 – Fire Alarm and Detection Systems:
 - This section covers the application, installation, performance and maintenance of fire alarm systems and components.
 - 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, 907.1.1

2021 Michigan Building Code (MBC)

Chapter 9 – Fire Protection and Life Safety Systems:

- Section 907 – Fire Alarm and Detection Systems:
 - Fire alarm shop drawings shall be prepared in accordance with NFPA 72 and submitted for review and approval prior to system installation.
 - Fire alarm shop drawings shall include all of the following:
 - Drawn to an indicated scale, on sheets of uniform size, with a plan of each floor.
 - Name of protected premises, owner, and occupant (where applicable).
 - Name of installer or contractor.
 - Location of protected premises.
 - Device legend and symbols in accordance with NFPA 170, or as acceptable to the AHJ.
 - Date of issue and any revision dates.

907.1.2, NFPA 72, Section 7.4

2021 Michigan Building Code (MBC)

Chapter 9 – Fire Protection and Life Safety Systems:

- Section 907 – Fire Alarm and Detection Systems:
 - Fire alarm shop drawings shall include all of the following (continued):
 - Floor or level identification.
 - Point of compass (indication of north).
 - Graphic scale.
 - All walls, doors, and partitions extending to within 15% of the ceiling height.
 - Room and area descriptions and use.
 - System device and component locations.
 - Location(s) of the system’s primary power disconnecting means.
 - Location of monitor/control interfaces to other systems.
 - System riser locations.

907.1.2, NFPA 72, Section 7.4

2021 Michigan Building Code (MBC)

Chapter 9 – Fire Protection and Life Safety Systems:

- Section 907 – Fire Alarm and Detection Systems:
 - Fire alarm shop drawings shall include all of the following (continued):
 - Type and number of system components/devices on each circuit, on each floor or level.
 - Type and quantity of conductors and conduit (if used) for each circuit.
 - Identification of any ceiling over 10’ where automatic fire detection is proposed.
 - Details of ceiling geometries, including beams and solid joists, where automatic fire detection is proposed.
 - Where known, acoustic properties of spaces.
 - Pathway class designations, including the location of any end-of-line supervisory or power devices required by the pathway class.
 - Pathway survivability levels.

2021 Michigan Building Code (MBC)

Chapter 9 – Fire Protection and Life Safety Systems:

- Section 907 – Fire Alarm and Detection Systems:
 - Fire alarm shop drawings shall include all of the following (continued):
 - Riser diagrams shall be coordinated with the floor plans and include the following:
 - General arrangement of the system in building cross-section.
 - Number of risers.
 - Type and number of circuits in each riser.
 - Type and number of devices/components on each circuit, on each floor or level.
 - Number of conductors for each circuit.
 - Pathway class designations, including the location of any end-of-line supervisory or power supervisory devices required by the pathway class.
 - Pathway survivability levels.

2021 Michigan Building Code (MBC)

Chapter 9 – Fire Protection and Life Safety Systems:

- Section 907 – Fire Alarm and Detection Systems:
 - Fire alarm shop drawings shall include all of the following (continued):
 - Control unit diagrams shall be provided for all control equipment and include:
 - Identification of the control equipment depicted.
 - Location(s) of control equipment.
 - All field wiring terminals and terminal identifications.
 - All circuits connected to field wiring terminals and circuit identifications.
 - All indicators and manual controls.
 - Field connections to supervising station signaling equipment, releasing equipment, or emergency safety control interfaces, where provided.

907.1.2, NFPA 72, Section 7.4

2021 Michigan Building Code (MBC)

Chapter 9 – Fire Protection and Life Safety Systems:

- Section 907 – Fire Alarm and Detection Systems:
 - Fire alarm shop drawings shall include all of the following (continued):
 - Typical wiring diagrams shall be provided for all initiating devices, notification appliances, remote indicators, annunciators, remote test stations, and end-of-line and power supervisory devices.
 - A narrative description or input/output matrix to describe the sequence of operation.
 - Calculations shall be provided and include the following:
 - Battery calculations.
 - Notification appliance circuit voltage drop calculations.
 - Other required calculations, such as line resistance calculations, where required.

2021 Michigan Building Code (MBC)

Chapter 9 – Fire Protection and Life Safety Systems:

- Section 907 – Fire Alarm and Detection Systems:
 - Equipment shall be listed and approved for the purpose for which it is installed.
 - 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.

907.1.3, 907.2

2021 Michigan Building Code (MBC)

Chapter 9 – Fire Protection and Life Safety Systems:

- Section 907 – Fire Alarm and Detection Systems:
 - 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.
 - Exceptions to the manual fire alarm box requirement:
 - The manual fire alarm box is not required for fire alarm systems dedicated to elevator recall control and supervisory service.
 - The manual fire alarm box is 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 during a sprinkler system impairment event. Where provided, it shall not be in an area accessible to the public.

907.2

2021 Michigan Building Code (MBC)

Chapter 9 – Fire Protection and Life Safety Systems:

- Section 907 – Fire Alarm and Detection Systems:
 - 907.2 Where required in new buildings and structures:
 - Group A occupancies with an occupant load of 300 or more, or where the Group A occupancy load is more than 100 persons above or below the lowest level of exit discharge, require a manual fire alarm system (pull stations) that activates the occupant notification system in accordance with Section 907.5.
 - Manual fire alarm boxes are not required in a fully sprinkled building when the alarm notification appliances activate on sprinkler waterflow.
 - Group A occupancies with an occupant load of 1,000 or more require an emergency voice alarm/communications system (EVACS) in accordance with Section 907.5.2.2.
 - Stadiums, arenas, and grandstands required to caption public announcements shall be in accordance with Section 907.5.2.2.4.

2021 Michigan Building Code (MBC)

Chapter 9 – Fire Protection and Life Safety Systems:

- Section 907 – Fire Alarm and Detection Systems:
 - 907.2 Where required in new buildings and structures:
 - Group B occupancies with an occupant load of all floors of 500 or more, or more than 100 persons above or below the lowest level of exit discharge, or if the area contains an ambulatory care facility, require a manual fire alarm system that activates the occupant notification system in accordance with Section 907.5.
 - Manual fire alarm boxes are not required in a fully sprinkled building when the alarm notification appliances activate on sprinkler waterflow.
 - Group B ambulatory care facilities require an automatic smoke detection system installed within the ambulatory care facility and in public use areas outside of tenant spaces, including corridors and elevation lobbies, although the automatic smoke detection can be deleted in a fully sprinklered building when the alarm notification appliances activate on sprinkler waterflow.

2021 Michigan Building Code (MBC)

Chapter 9 – Fire Protection and Life Safety Systems:

- Section 907 – Fire Alarm and Detection Systems:
 - 907.2 Where required in new buildings and structures:
 - *The State of Michigan Bureau of Fire Services (BFS) retains fire safety rule authority over specific regulated facilities within the state. These rules require plan reviews to be performed by the BFS for construction, additions, renovations, or remodeling for these facilities as follows:*
 - *Adult Foster Care Facility: Small (7-12) or large (13-20).*
 - *Educational Facility: K-12 School, Charter School, College, University, and Dormitory.*
 - *Health Care Facility: County Medical Care Facility (CMCF), Freestanding Surgical Outpatient Facility (FSOF), Home for the Aged (HFA); Hospice, Hospital, Hospital within a Hospital, Nursing Home.*

2021 Michigan Building Code (MBC)

Chapter 9 – Fire Protection and Life Safety Systems:

- Section 907 – Fire Alarm and Detection Systems:
 - 907.2 Where required in new buildings and structures:
 - *The State of Michigan Bureau of Fire Services (BFS) retains fire safety rule authority over specific regulated facilities within the state. These rules require plan reviews to be performed by the BFS for construction, additions, renovations, or remodeling for these facilities as follows (continued):*
 - *Penal Institutions / Facilities:*
 - *Jurisdiction applies to state prisons and county jail buildings used for housing/sleeping of inmates. Prison buildings not used for sleeping inmates are not subject to BFS jurisdiction.*
 - *Child Care: Childcare Centers, Childcare Institutions, and Camps*

2021 Michigan Building Code (MBC)

Chapter 9 – Fire Protection and Life Safety Systems:

- Section 907 – Fire Alarm and Detection Systems:
 - 907.2 Where required in new buildings and structures:
 - *The codes adopted for fire safety for the listed facility types vary based on the rules promulgated for each type of facility. The rules for each facility type and the referenced codes can be found under the State of Michigan, Bureau of Fire Services, Plan Review, Details for Specific Regulated Facilities section. A link to the rules is shown below:*

<https://www.michigan.gov/lara/bureau-list/bfs/plan-review/details-for-specific-regulated-facilities>

- *The requirements from the Michigan Building Code are provided in this presentation for these facilities. It is recommended that you determine the requirements from the BFS rules and adopted codes and standards prior to estimating, design, or installation of fire alarm systems in these facilities.*

2021 Michigan Building Code (MBC)

Chapter 9 – Fire Protection and Life Safety Systems:

- Section 907 – Fire Alarm and Detection Systems:
 - 907.2 Where required in new buildings and structures:
 - *In Michigan, most Group E occupancies fall under the jurisdiction of the BFS (Bureau of Fire Services) per the previous discussion, with some exceptions such as a non-K-12 school or a training facility. The following requirements are taken directly from the MBC, 2021 Edition.*
 - Group E occupancies with an occupant load greater than 50 or more require a manual fire alarm system that initiates the occupant notification signal utilizing an emergency voice/alarm communication system (EVACS) meeting the requirements of Section 907.5.2.2 and installed in accordance with Section 907.6.
 - EVACS shall not be required in Group E occupancies with occupant loads of 100 or less, provided that actuation of the manual system initiates an approved occupant notification signal in accordance with Section 907.5.

2021 Michigan Building Code (MBC)

Chapter 9 – Fire Protection and Life Safety Systems:

- Section 907 – Fire Alarm and Detection Systems:
 - 907.2 Where required in new buildings and structures:
 - Manual fire alarm boxes shall not be required where all of the following apply:
 - Interior corridors are protected by smoke detectors.
 - Auditoriums, cafeterias, gymnasiums, and similar areas as well as shops and laboratories involving dusts or vapors are protected are protected by heat detectors or other approved detection devices.
 - Manual activation is provided from a normally occupied location.
 - **OR** shall not be required where all of the following apply:
 - The building is fully sprinkled and the EVACS will activate on sprinkler waterflow.
 - Manual activation is provided from a normally occupied location.

2021 Michigan Building Code (MBC)

Chapter 9 – Fire Protection and Life Safety Systems:

- Section 907 – Fire Alarm and Detection Systems:
 - 907.2 Where required in new buildings and structures:
 - Group F occupancies that are two or more stories in height and have a combined occupant load of 500 or more above or below the lowest level of exit discharge require a manual fire alarm system that activates the occupant notification system in accordance with Section 907.5.
 - Manual fire alarm boxes are not required in a fully sprinkled building when the alarm notification appliances activate on sprinkler waterflow.

2021 Michigan Building Code (MBC)

Chapter 9 – Fire Protection and Life Safety Systems:

- Section 907 – Fire Alarm and Detection Systems:
 - 907.2 Where required in new buildings and structures:
 - Group H-5 occupancies and occupancies used for the manufacture of organic coatings require a manual fire alarm system that activates the occupant notification system in accordance with Section 907.5.
 - An automatic smoke detection system is required for highly toxic gases, organic peroxides, and oxidizers in accordance with Chapters 60, 62, and 63, respectively, of the IFC.

907.2.5

2021 Michigan Building Code (MBC)

Chapter 9 – Fire Protection and Life Safety Systems:

- Section 907 – Fire Alarm and Detection Systems:
 - 907.2 Where required in new buildings and structures:
 - *In Michigan, most Group I occupancies fall under the jurisdiction of the BFSs' specific health care rules per the previous discussion. The following requirements are taken directly from the MBC, 2021 Edition.*
 - Group I occupancies require a manual fire alarm system that activates the occupant notification system in accordance with Section 907.5.
 - An automatic smoke detection system that activates the occupant notification system in accordance with Section 907.5 shall be provided in Groups I-1, I-2, and I-3.

907.2.6

2021 Michigan Building Code (MBC)

Chapter 9 – Fire Protection and Life Safety Systems:

- Section 907 – Fire Alarm and Detection Systems:
 - 907.2 Where required in new buildings and structures:
 - Group M occupancies with a combined 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 that activates the occupant notification system in accordance with Section 907.5.
 - A manual fire alarm system is not required in covered or open mall buildings complying with Section 402 (>50,000sf).
 - Manual fire alarm boxes are not required in a fully sprinkled building when the alarm notification appliances throughout the notification zones activate on sprinkler waterflow.

907.2.7

2021 Michigan Building Code (MBC)

Chapter 9 – Fire Protection and Life Safety Systems:

- Section 907 – Fire Alarm and Detection Systems:
 - 907.2 Where required in new buildings and structures:
 - Group M occupancy notification: During times that the building is occupied, the initiation of a signal from a manual fire alarm box or waterflow switch shall not be required to activate the notification appliances when a signal is activated at a constantly attended location from which evacuation instructions can be initiated over an EVACS installed in accordance with Section 907.5.2.2.

907.2.7.1

2021 Michigan Building Code (MBC)

Chapter 9 – Fire Protection and Life Safety Systems:

- Section 907 – Fire Alarm and Detection Systems:
 - 907.2 Where required in new buildings and structures:
 - Group R-1 (transient, e.g., hotel/motel) occupancies require a manual fire alarm system that activates the occupant notification system in accordance with Section 907.5.
 - Exceptions:
 - Buildings not more than 2 stories in height where all individual sleeping units and contiguous attics and crawl spaces to those units are separated from each other and public/common areas by 1 hour fire partitions and each unit has an exit directly to a public way, exit court, or yard.
 - Manual fire alarm boxes are not required in a fully sprinkled building when the alarm notification appliances activate on sprinkler waterflow and not fewer than 1 manual fire alarm box is installed in an approved location.

2021 Michigan Building Code (MBC)

Chapter 9 – Fire Protection and Life Safety Systems:

- Section 907 – Fire Alarm and Detection Systems:
 - 907.2 Where required in new buildings and structures:
 - Group R-1 (transient, e.g., hotel/motel) occupancies (continued):
 - An automatic smoke detection system that activates the occupant notification system in accordance with 907.5 shall be installed in all corridors serving sleeping units.
 - Exception for buildings that do not have interior corridors serving sleeping units and where each sleeping unit has a means of egress door opening directly to an exit or to an exterior exit access that leads directly to an exit.
 - Single- and multiple-station smoke alarms shall be installed in accordance with Section 907.2.11 in the following areas:
 - Sleeping areas, in every room between the sleeping area and the exit door leading from the sleeping area, and in each story including basements.

2021 Michigan Building Code (MBC)

Chapter 9 – Fire Protection and Life Safety Systems:

- Section 907 – Fire Alarm and Detection Systems:
 - 907.2 Where required in new buildings and structures:
 - Group R-2 (permanent, e.g., apartments) occupancies require a manual fire alarm system that activates the occupant notification system in accordance with Section 907.5, where any of the following apply:
 - Buildings where any dwelling unit or sleeping unit is located 3 or more stories above the lowest level of exit discharge.
 - Buildings where any dwelling unit or sleeping unit is located more than 1 story below the highest level of exit discharge of exits serving the dwelling unit or sleeping unit.
 - Building contains more than 16 dwelling units or sleeping units.

907.2.9, 907.2.9.1

2021 Michigan Building Code (MBC)

Chapter 9 – Fire Protection and Life Safety Systems:

- Section 907 – Fire Alarm and Detection Systems:
 - 907.2 Where required in new buildings and structures:
 - Group R-2 (permanent, e.g., apartments) occupancies (continued):
 - Exceptions to manual fire alarm system requirement:
 - Buildings not more than 2 stories in height where all dwelling units or sleeping units and contiguous attics and crawl spaces are separated from each other and public/common areas by 1 hour fire partitions and each dwelling unit has an exit directly to a public way, egress court or yard.
 - Manual fire alarm boxes are not required in a fully sprinkled building when the alarm notification appliances activate on sprinkler waterflow.
 - Buildings that do not have interior corridors serving dwelling units and are fully sprinklered, provided that dwelling units either have a means of egress door opening directly to an exterior exit access that leads directly to the exits or are served by open-ended corridors.

2021 Michigan Building Code (MBC)

Chapter 9 – Fire Protection and Life Safety Systems:

- Section 907 – Fire Alarm and Detection Systems:
 - 907.2 Where required in new buildings and structures:
 - Group R-2 (permanent, e.g., apartments) occupancies (continued):
 - Single- and multiple-station smoke alarms shall be installed in accordance with Section 907.2.11 in the following areas:
 - On the wall or ceiling outside of each separate sleeping area in the immediate vicinity of bedrooms.
 - In each room used for sleeping purposes.
 - In each story within a dwelling unit, including basements but not including crawl spaces and uninhabitable attics.

907.2.9.2, 907.2.11.2

2021 Michigan Building Code (MBC)

Chapter 9 – Fire Protection and Life Safety Systems:

- Section 907 – Fire Alarm and Detection Systems:
 - 907.2 Where required in new buildings and structures:
 - Group R-2 College and University Buildings:
 - *In Michigan, Group R-2 occupancies operated by colleges and universities fall under the jurisdiction of the BFS per the previous discussion. The following requirements are taken directly from the MBC, 2021 Edition.*
 - An automatic smoke detection system that activates the occupant notification system in accordance with 907.5 shall be installed in Group R-2 occupancies for student or staff housing in all of the following locations:
 - Common spaces outside of dwelling units and sleeping units.
 - Laundry rooms, mechanical equipment rooms, and storage rooms.
 - All interior corridors serving sleeping or dwelling units.

907.2.9.3

2021 Michigan Building Code (MBC)

Chapter 9 – Fire Protection and Life Safety Systems:

- Section 907 – Fire Alarm and Detection Systems:
 - 907.2 Where required in new buildings and structures:
 - Group R-2 College and University Buildings (continued):
 - Exception for automatic detection for buildings that do not have interior corridors serving sleeping units or dwelling units and where each sleeping unit or dwelling unit either has a means of egress door opening directly to an exterior exit access that leads directly to an exit, or a means of egress door opening directly to an exit.
 - Required smoke alarms in dwelling units and sleeping units shall be interconnected with the fire alarm system in accordance with NFPA 72.

907.2.9.3

2021 Michigan Building Code (MBC)

Chapter 9 – Fire Protection and Life Safety Systems:

- Section 907 – Fire Alarm and Detection Systems:
 - 907.2 Where required in new buildings and structures:
 - Group S public and self-storage occupancies three stories or greater in height with interior corridors and interior common areas, require a manual fire alarm system that activates the occupant notification system in accordance with Section 907.5.
 - Visible notification appliances are not required within storage units.
 - Manual fire alarm boxes are not required in a fully sprinkled building when the alarm notification appliances throughout the notification zones activate on sprinkler waterflow.

907.2.10

2021 Michigan Building Code (MBC)

Chapter 9 – Fire Protection and Life Safety Systems:

- Section 907 – Fire Alarm and Detection Systems:
 - 907.2 Where required in new buildings and structures:
 - Listed single- and multiple-station smoke alarms complying with UL 217 shall be installed in accordance with NFPA 72 and the following:
 - Group R-1 (Transient) installed as follows:
 - In sleeping areas
 - In every room in the path of the means of egress from the sleeping area to the door leading from the sleeping unit.
 - In each story within the sleeping unit, including basements.

907.2.11, 907.2.11.1

2021 Michigan Building Code (MBC)

Chapter 9 – Fire Protection and Life Safety Systems:

- Section 907 – Fire Alarm and Detection Systems:
 - 907.2 Where required in new buildings and structures:
 - Listed single- and multiple-station smoke alarms complying with UL 217 shall be installed in accordance with NFPA 72 and the following (continued):
 - R-2 (Permanent), R-3 (Single Family), R-4 (Assisted Living) occupancies and I-1 (Group Homes), regardless of occupancy load, installed as follows:
 - On the ceiling or wall outside of each separate sleeping area in the immediate vicinity of bedrooms.
 - In each room used for sleeping purposes.
 - In each story within a dwelling unit, including basements but not including crawl spaces and uninhabitable attics.

907.2.11.2

2021 Michigan Building Code (MBC)

Chapter 9 – Fire Protection and Life Safety Systems:

- Section 907 – Fire Alarm and Detection Systems:
 - Listed single- and multiple-station smoke alarms complying with UL 217 shall be installed in accordance with NFPA 72 and the following (continued):
 - Smoke alarms shall not be installed in the following locations unless they are required for a location as required for R-1, R-2, R-3, R-4 and I-1 occupancies.
 - Ionization smoke alarms shall not be installed less than 20' horizontally from a permanently installed cooking appliance.
 - Ionization smoke alarms with an alarm-silencing switch shall not be installed less than 10' horizontally from a permanently installed cooking appliance.
 - Photoelectric smoke alarms shall not be installed less than 6' horizontally from a permanently installed cooking appliance.

907.2.11.3

2021 Michigan Building Code (MBC)

Chapter 9 – Fire Protection and Life Safety Systems:

- Section 907 – Fire Alarm and Detection Systems:
 - Listed single- and multiple-station smoke alarms complying with UL 217 shall be installed in accordance with NFPA 72 and the following (continued):
 - Smoke alarms shall be installed not less than 3’ horizontally from the door or opening of a bathroom that contains a bathtub or shower unless this would prevent placement of a smoke alarm as required for the following occupancies; R-1, R-2, R-3, R-4 and I-1 occupancies.
 - Smoke alarms must be interconnected where more than one is present within an individual dwelling unit or sleeping unit in Group R or I-1 occupancies such that the activation of one unit will activate all the alarms in that individual unit.
 - Interconnection is permitted to be by hard-wired or *listed* wireless means.
 - The alarm shall be clearly audible in all bedrooms over the background noise levels with all intervening doors closed.

2021 Michigan Building Code (MBC)

Chapter 9 – Fire Protection and Life Safety Systems:

- Section 907 – Fire Alarm and Detection Systems:
 - Listed single- and multiple-station smoke alarms complying with UL 217 shall be installed in accordance with NFPA 72 and the following (continued):
 - In new construction, smoke alarms shall be powered from building wiring if served from a commercial power source and shall be equipped with battery backup.
 - Smoke alarms with integral strobes that are not equipped with battery backup shall be connected to an emergency electrical system in accordance with Section 2702.
 - Smoke alarms shall emit a signal when the battery is low.
 - Wiring shall be permanent and without a disconnecting switch other than as required for overcurrent protection.
 - Smoke alarms are not required to have battery backup where they are connected to an emergency electrical system in accordance with Section 2702.

907.2.11.6

2021 Michigan Building Code (MBC)

Chapter 9 – Fire Protection and Life Safety Systems:

- Section 907 – Fire Alarm and Detection Systems:
 - Listed single- and multiple-station smoke alarms complying with UL 217 shall be installed in accordance with NFPA 72 and the following (continued):
 - Smoke detectors listed in accordance with UL 268 and provided as part of a building fire alarm system shall be an acceptable alternative to single- and multiple-station smoke alarms as follows:
 - The fire alarm system shall comply with all applicable requirements of Section 907.
 - Activation of a smoke detector in a dwelling unit or sleeping unit shall initiate alarm notification in the dwelling unit or sleeping unit in accordance with Section 907.5.2.

907.2.11.7

2021 Michigan Building Code (MBC)

Chapter 9 – Fire Protection and Life Safety Systems:

- Section 907 – Fire Alarm and Detection Systems:
 - Listed single- and multiple-station smoke alarms complying with UL 217 shall be installed in accordance with NFPA 72 and the following (continued):
 - Activation of a smoke detector in a dwelling unit or sleeping unit shall not activate alarm notification appliances outside of the dwelling unit or sleeping unit, provided that a supervisory signal is generated and monitored in accordance with Section 907.6.6.
 - Smoke alarm locations and equipment requirements in existing buildings constructed prior to November 6, 1974 , are more permissive than the requirements for new construction detailed previously and are contained in Sections 907.2.11.8 and 907.2.11.8.1.

907.2.11.8, 907.2.11.8.1

2021 Michigan Building Code (MBC)

Chapter 9 – Fire Protection and Life Safety Systems:

- Section 907 – Fire Alarm and Detection Systems:
 - 907.2 Where required in new buildings and structures:
 - Special amusement buildings shall have an automatic smoke detection system.
 - Activation of any single smoke detector, the automatic sprinkler system, or any other automatic fire detection device shall immediately sound an alarm at a constantly attended location from which emergency action can be initiated, including the capability of manual initiation, as follows:
 - Illuminate means of egress.
 - Stop any conflicting or confusing sounds and visual distractions.
 - Activate directional exit marking system.
 - Activate a prerecorded message, audible throughout the special amusement building, instructing patrons to proceed to the nearest exit.

2021 Michigan Building Code (MBC)

Chapter 9 – Fire Protection and Life Safety Systems:

- Section 907 – Fire Alarm and Detection Systems:
 - 907.2 Where required in new buildings and structures:
 - Special amusement buildings shall also have an emergency voice/alarm communications system, which is allowed to serve as a public address system, installed in accordance with Section 907.5.2.2, and NFPA 72, and audible throughout the special amusement building.

2021 Michigan Building Code (MBC)

Chapter 9 – Fire Protection and Life Safety Systems:

- Section 907 – Fire Alarm and Detection Systems:
 - 907.2 Where required in new buildings and structures:
 - High-rise buildings (defined as having a floor used for human occupancy more than 55' above the lowest level of fire department vehicle access in Michigan) shall have an automatic fire alarm system, a fire department communications system, and an EVACS system.
 - Exceptions:
 - Airport traffic control towers covered under Sections 412 and 907.2.22.
 - Open parking garages covered under Section 406.5.
 - A-5 (stadium, grandstand, etc.) occupancies under Section 301.1.
 - Low-hazard occupancies under Section 503.1.1 (industrial occupancies that are unusually high to accommodate special machinery or equipment, e.g., foundries, power plants, rolling mills).

2021 Michigan Building Code (MBC)

Chapter 9 – Fire Protection and Life Safety Systems:

- Section 907 – Fire Alarm and Detection Systems:
 - 907.2 Where required in new buildings and structures:
 - Exceptions (continued):
 - Buildings with an occupancy in Groups H-1, H-2 or H-3 in accordance with Section 415.
 - In Group I-1 and I-2 occupancies the alarm shall sound at a constantly attended location and occupant notification shall be broadcast by the EVACS.
 - The activation of any detector required by this section shall activate the EVACS.

907.2.13, 907.2.13.1

2021 Michigan Building Code (MBC)

Chapter 9 – Fire Protection and Life Safety Systems:

- Section 907 – Fire Alarm and Detection Systems:
 - 907.2 Where required in new buildings and structures:
 - In addition to smoke detectors required by other occupancy requirements, (907.2.1 through 907.2.9), smoke detectors shall be located as follows:
 - In each mechanical equipment, electrical, transformer, telephone equipment, or similar room that is not provided with sprinkler protection.
 - In each elevator machine room, machinery space, control room and control space and in elevator lobbies.
 - Automatic duct smoke detection shall be provided:
 - 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.

907.2.13.1.1, 907.2.13.1.2

2021 Michigan Building Code (MBC)

Chapter 9 – Fire Protection and Life Safety Systems:

- Section 907 – Fire Alarm and Detection Systems:
 - 907.2 Where required in new buildings and structures:
 - Where a wired fire department communication system is approved in lieu of an in-building two-way emergency responder communication coverage system in accordance with Section 510 of the IFC, the wired fire department communication system shall be designed and installed in accordance with NFPA 72 and shall operate between a fire command center complying with Section 911, elevators, elevator lobbies, emergency and standby power rooms, fire pump rooms, areas of refuge, and inside interior exit stairways. The fire department communication device shall be provided at each floor level within the interior exit stairway.
 - EVACS systems shall be multiple-channel in buildings with an occupied floor more than 120' above the lowest level of fire department vehicle access.

2021 Michigan Building Code (MBC)

Chapter 9 – Fire Protection and Life Safety Systems:

- Section 907 – Fire Alarm and Detection Systems:
 - 907.2 Where required in new buildings and structures:
 - Buildings with atriums connecting more than two stories shall have a fire alarm system that activates the occupant notification system in accordance with Section 907.5 with smoke detection installed in locations required by a rational analysis in Section 909.4 and in accordance with the operational requirements in Section 909.17. Occupancies in Group A, E or M shall be provided with an emergency voice alarm/communications system.
 - An automatic fire detection system shall be installed throughout high-piled combustible storage areas where required by Section 3206.5 of the IFC (Requirements are dependent upon the commodity class, square footage of the storage area and whether the space is provided with automatic sprinklers).

907.2.14, 907.2.15

2021 Michigan Building Code (MBC)

Chapter 9 – Fire Protection and Life Safety Systems:

- Section 907 – Fire Alarm and Detection Systems:
 - 907.2 Where required in new buildings and structures:
 - 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

2021 Michigan Building Code (MBC)

Chapter 9 – Fire Protection and Life Safety Systems:

- Section 907 – Fire Alarm and Detection Systems:
 - 907.2 Where required in new buildings and structures:
 - Lumber, wood structural panel, and veneer mills shall be provided with a manual fire alarm system.
 - Underground buildings equipped with a smoke control system shall have smoke detectors located as follows:
 - Mechanical, electrical, transformer, telephone equipment, elevator machine rooms or similar rooms.
 - Elevator lobbies.
 - Main return and exhaust plenums of HVAC units serving more than one story, and each connection to a vertical return air duct or plenum serving 2 or more floors.
 - Activation shall activate an audible alarm at a constantly attended location.

2021 Michigan Building Code (MBC)

Chapter 9 – Fire Protection and Life Safety Systems:

- Section 907 – Fire Alarm and Detection Systems:
 - 907.2 Where required in new buildings and structures:
 - 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 (EVACS) per Section 907.5.2.2.
 - Covered or open mall buildings exceeding 50,000 square feet in total floor area shall be provided with an EVACS in accordance with Section 907.5.2.2. Access to the EVACS serving a mall, required or otherwise, shall be provided for the fire department.

907.2.19, 907.2.20

2021 Michigan Building Code (MBC)

Chapter 9 – Fire Protection and Life Safety Systems:

- Section 907 – Fire Alarm and Detection Systems:
 - 907.2 Where required in new buildings and structures:
 - Residential aircraft hangars shall have a minimum of one smoke alarm, and it shall be interfaced to the dwelling smoke alarms to provide audibility in all sleeping areas of the dwelling.
 - Airport traffic control towers shall have an automatic fire detection system that activates the occupant notification system in accordance with Section 907.5.
 - Exception: Audible appliances shall not be installed within the control tower cab.

907.2.21, 907.2.22

2021 Michigan Building Code (MBC)

Chapter 9 – Fire Protection and Life Safety Systems:

- Section 907 – Fire Alarm and Detection Systems:
 - 907.2 Where required in new buildings and structures:
 - Airport traffic control towers with multiple exits and automatic sprinklers shall be provided with smoke detectors in all of the following locations:
 - Airport traffic control cab.
 - Electrical and mechanical equipment rooms.
 - Airport terminal radar and electronics rooms.
 - Outside each opening into interior exit stairways.
 - Along the single means of egress permitted from observation levels.
 - Outside each opening into the single means of access permitted from observation levels.

2021 Michigan Building Code (MBC)

Chapter 9 – Fire Protection and Life Safety Systems:

- Section 907 – Fire Alarm and Detection Systems:
 - 907.2 Where required in new buildings and structures:
 - Other airport traffic control towers with a single exit or where sprinklers are not installed shall be provided with smoke detectors in all of the following locations:
 - Airport traffic control cab.
 - Electrical and mechanical equipment rooms.
 - Airport terminal radar and electronics rooms.
 - Office spaces incidental to the tower operations.
 - Lounges for employees, including sanitary facilities.
 - Means of egress.
 - Utility shafts, where access to smoke detectors can be provided.

2021 Michigan Building Code (MBC)

Chapter 9 – Fire Protection and Life Safety Systems:

- Section 907 – Fire Alarm and Detection Systems:
 - 907.2 Where required in new buildings and structures:
 - An automatic smoke detection system or radiant-energy detection system shall be installed in rooms, areas, and walk-in units containing energy storage systems as required in Section 1207.5.4 of the International Fire Code (IFC).

907.2.23

END OF PERIOD 3 – MODULE 4