



## CITY COUNCIL ACTION REPORT

May 3, 2011

TO: John Szerlag, City Manager

FROM: William S. Nelson, Fire Chief  
David J. Roberts, Assistant Fire Chief

SUBJECT: Troy City Code Chapter 93 Amendments – Correction

Background:

The recently approved amendments to Chapter 93, Fire Prevention, were inadvertently a repeal of Chapter 93 and adoption of only the latest modifications. This was an oversight on staff's part for which we apologize. The correct amendment format to Chapter 93 should not repeal the entire chapter, but rather keep the current chapter and adopt the latest amendments, of which Council has already approved at the regular meeting of April 18, 2011. Attached for reference once again are the already approved amendments to Chapter 93 in red line format, and the entire amended ordinance as intended.

Financial Considerations:

There are no financial considerations associated with this item.

Legal Considerations:

Adopting this corrected format to Chapter 93 will maintain the Fire Prevention ordinance in its entirety with the latest amendments as intended.

Policy Considerations:

The implementation, administration, and enforcement of the provisions of Chapter 93 serve to meet Council's Outcome Statement of Troy enhancing the health and safety of the community. Adopting this corrected amendment format will better serve this outcome.

Options

Recommend adopting this corrected amendment to Chapter 93 of the Code of the City of Troy.

Reviewed and approved as to legality:

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Lori Grigg Bluhm, City Attorney

## Chapter 93 - Fire Prevention

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**93.00 Adoption of the 2009 International Fire Code by Reference.** The *International Fire Code*, 2009 Edition, including its appendices, is hereby adopted by reference with the additions, insertions, deletions and changes prescribed in Section 93.01 of this Ordinance, as the Fire Prevention Code of the City of Troy, regulating and governing the safeguarding of life and property from fire and explosion hazards arising from the storage, handling and use of hazardous substances, materials and devices, and from conditions hazardous to life and property in the occupancy of buildings. This Ordinance and a copy of the International Fire Code, 2009 Edition, shall be kept on file with the City Clerk. A copy of the International Fire Code in its entirety can also be found at: <http://publicecodes.citation.com/icod/ifc/2009/index.htm>)

**93.01 Additions, Insertions, Deletions and Changes to the International Fire Code, 2009 Edition.** The City of Troy adopts the following additions, insertions, deletions and changes from the *International Fire Code, 2009 Edition*. Subsequent section numbers used in this section shall refer to the like numbered sections of the *International Fire Code, 2009 Edition*. Any provisions of Chapter 93, Section 93.01 which are not amended or deleted herein shall remain in full force and effect.

**101.1 Title.** These regulations shall be known as the Fire Prevention Code of The City of Troy, hereinafter referred to as “this code.”

**102.7 Referenced codes and standards.** The codes and standards referenced in this code shall be those that are listed in Chapter 47 and such codes and standards shall be considered part of the requirements of this code to the prescribed extent of each such reference. Where differences occur between the provisions of this code and the referenced standards, the provisions which establish the higher standard for the promotion of the safety and welfare of the public and the protection of the public, or as otherwise determined by State of Michigan law, shall apply. References to the International Building Code shall be interpreted as the Michigan Building Code as set forth in Chapter 79, Section 8.1 of the City of Troy Code.

**103.1 General.** The Troy Fire Department shall be responsible for fire prevention inspection activities and code enforcement of buildings and occupancies as related to the risk of fire or explosion within the City of Troy. The department of fire prevention is established within the jurisdiction under the direction of the code official. The function of the department shall be the implementation, administration and enforcement of the provisions of this code and the codes and standards referenced in Chapter 45 of this code.

**104.11.4 Unlawful boarding or tampering with fire department emergency equipment.** A person shall not, without proper authorization from the fire official in charge of said fire department emergency equipment, cling to, attach to, climb upon or into, board, or swing upon any fire department emergency vehicle,

whether the same is in motion or at rest, operate any emergency warning equipment, or to manipulate or tamper with, or attempt to manipulate or tamper with any levers, valves, switches, starting devices, brakes, pumps, or any equipment or protective clothing on, or a part of, any fire department emergency vehicle.

**104.11.5 Damage/injury to fire department equipment/personnel.** It shall be unlawful for any person to damage or deface, or attempt or conspire to damage or deface, any fire department emergency vehicle or equipment at any time; or to injure, or attempt or conspire to injure, fire department personnel while performing departmental duties.

**105.1 General.** Permits shall be in accordance with Section 105. Where reference is made to this section for permits elsewhere in this code and there are no provisions for issuing said permits by the department of fire prevention, the code official is authorized to waive the particular permit requirement.

**105.1.2 Types of Permits.** There shall be three types of permits as follows:

1. Operational permit. An operational permit allows the applicant to conduct an operation or a business for which a permit is required by Section 105.6 for either:
  - 1.1 A prescribed period.
  - 1.2 Until renewed or revoked.
2. Construction permit. A construction permit allows the applicant to install or modify systems of equipment for which a permit is required by Section 105.7.
3. Occupancy permit. An occupancy permit allows the applicant to occupy existing premises for the purpose of conducting or operating a business for which a permit is required by Section 105.8.

**105.4.2 Information on Construction Documents.** *Construction documents* shall be drawn to scale upon suitable material. Electronic media documents shall be submitted as required by the *fire code official*. *Construction documents* shall be of sufficient clarity to indicate the location, nature and extent of the work proposed and show in detail that it will conform to the provisions of this code and relevant laws, ordinances, rules and regulations as determined by the *fire code official*.

**105.6 Required Operational Permits.** The code official is authorized to issue operational permits for the operations set forth in Sections 105.6.1 through 105.6.46. Where there are no provisions for issuing said permits, the code official is authorized to waive the particular permit requirement.

**105.6.13 Special Events.** An operational permit is required to operate/conduct all special events including exhibits, crafts and trade shows.

**105.6.13.1 Permit Fee.** Provided for in Troy City Code Chapter 60.

**105.6.14.1 Fireworks.** An operational permit is required for the public display and retail display and sale of fireworks. Application for permits shall be made in writing at least 15 days in advance of the date of the public display, retail display or sale of fireworks. The sale, possession, and distribution of fireworks for such display shall be lawful under the terms and conditions approved with the permit and for only that purpose. A permit granted hereunder shall not be transferable nor shall any such permit be extended beyond the time set forth therein unless approved by the fire official.

**105.6.14.2 Permit Fee.** Provided for in Troy City Code Chapter 60.

**105.6.20 Hazardous Materials.** An operational permit is required to store, transport on site, dispense, use or handle hazardous materials in excess of the most restrictive amounts listed in this code, the *EPA's Emergency Planning and Community Right To Know* regulations, and *MIOSHA's Firefighter Right To Know* requirements.

**105.6.20.1 Required Amounts for Reporting.** Reportable quantities shall be considered the maximum amount of hazardous material on site at any given time. This amount is required to be reported to the fire department as indicated in the Troy Fire Department's HMIS packet as defined in Sections 407.5 and 2701.5.2 of this code.

**105.6.20.2 Permit Fees.** Provided for in Troy City Code Chapter 60.

**105.7.1.1 Installations.** Before any fire suppression system or component is installed, enlarged, extended or modified, a permit shall be obtained from the code official. This shall include any device or relay connected to or controlled by the fire suppression system. All work must be performed by a qualified installer who is properly licensed and/or certified to perform such work as determined by the code official. Construction documents shall be reviewed by the code official prior to the issuance of the permit. Upon issuance of the permit, the permit must be posted at the job site in plain view.

**105.7.1.2 Permit Fees.** Provided for in Troy City Code Chapter 60.

**105.7.5.1 Installations.** Before any fire alarm or detection system or component is installed, enlarged, extended or modified, a permit shall be obtained from the code official. This shall include auxiliary devices such as magnetic locks, electronic locks, or any device or relay connected to or controlled by the fire

alarm or detection system. All work must be performed by a qualified installer who is properly licensed and/or certified to perform such work as determined by the code official. Construction documents shall be reviewed by the code official prior to the issuance of the permit. Upon issuance of the permit, the permit must be posted at the job site in plain view.

**105.7.15 Permit issuance.** A permit granted hereunder shall not be transferable nor shall any such permit be extended beyond the time set forth therein unless approved by the fire official. When work is started without a permit, the permit fee shall be doubled.

**105.8 Required Occupancy Permit.** The fire code official is authorized to issue an occupancy permit for a business as set forth in Section 105.8.1 through 105.8.5.

**105.8.1 Use Group.** An occupancy permit is required for Use Groups A, B, F, M and S where such use will occupy 1,500 square feet or greater in area, and Use Group H of any size.

**Exception:** Multiple DBAs or LLCs in a single occupancy of less than 1,500 square feet in area.

**105.8.2 Inventory Statement.** An inventory statement for the intended business shall be provided to the fire code official prior to the issuance of the occupancy permit revealing product or commodity to be stored, used, or produced, and any associated documentation as may be required by the code official.

**105.8.2.1 Hazardous Materials Inventory Statement.** Where required by the fire code official, each application for a permit shall include a Hazardous Materials Inventory Statement (HMIS) in accordance with Section 2701.5.2.

**105.8.3 Permit Application.** An occupancy permit application shall be filed with the fire code official prior to occupancy. The fire code official shall review the application, inventory statement(s), and any associated documentation, and conduct any necessary inspections and meetings before an occupancy permit is issued.

**105.8.4 Site and Building Preparation.** As part of the occupancy permit, the intended occupancy shall meet the following requirements:

1. The building and any associated fire protection and life safety features shall comply with the requirements of this code.
2. Fire apparatus access roads and fire lanes shall be designated and posted in accordance with Section 503.
3. An address shall be posted in compliance with Troy City Code Chapter 2.

## Chapter 93 - Fire Prevention

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4. A building and/or tenant floor plan shall be provided to the fire code official in an approved format.
5. A key box, as required by the fire code official, shall be installed in accordance with Section 506.

**105.8.5 Notification of Changes.** Changes in occupancy or use shall be made to, and approved by the fire code official before such changes occur.

**106.5 Cancellation fees.** Handling cost for permits canceled after being issued is 35% of the permit fee or \$10.00, whichever is greater.

**108.1 Board of appeals established.** In order to hear and decide appeals of orders, decisions or determinations made by the code official relative to the application and interpretation of this code, there shall be and is hereby created a board of appeals as established in Section 116 of Chapter 79 of the Troy City Code.

**109.3 Violation penalties.** Persons who shall violate a provision of this code or shall fail to comply with any requirements thereof or who shall erect, install, alter, repair, service, test or do work in violation of the approved construction documents or directive of the fire code official, or of a permit or certificate used under provisions of this code, shall be guilty of a misdemeanor punishable by a fine of not more than five hundred (500) dollars or by imprisonment not exceeding ninety (90) days, or both such fine and imprisonment as determined by a judge in a court of law. Each day that a violation continues after due notice has been served shall be deemed a separate offense.

### SECTION 114 MISCELLANEOUS HAZARDS

**114.1 Hazardous materials - fire department responsibility.** The Troy Fire Department shall be responsible for gathering and organizing information, identifying risks, and enforcing codes, standards, and laws relating to the production, storage and use of hazardous materials within the City of Troy and the notification to fire fighting personnel of related hazards. The method and frequency shall be determined by the fire official or his duly authorized representative.

**114.2 Hazardous conditions.** If upon the expiration of the time mentioned in a notice of violation, hazardous conditions, including but not limited to, obstructions or encroachments inhibiting access to or egress from a space or building, are not removed, the code official shall proceed to remove or have removed the same. The expense incurred shall be a debt to the City from the responsible person and shall be collected as any other debt to the City.

**114.3 False alarms.** It shall be unlawful for any person to summon, in any way, the fire department unless a valid reason for their response is present. (See also Troy City Code Chapter 103 - Alarm Ordinance.)

**114.4 Nonstandard Equipment.** Equipment and devices which are not in compliance with recognized standards for design and construction may be approved upon presentation of satisfactory evidence that they are designed and constructed for safe operation.

**114.5 Motion Picture & Television Film Production.** Motion picture / television film production and similar entertainment or documentary production activities shall comply with the requirements of this code and NFPA 140.

## **SECTION 202 GENERAL DEFINITIONS**

**FIRE CODE OFFICIAL.** The fire chief, fire marshal, code enforcement officer, or other designated authority charged by the applicable governing body with the duties of administration and enforcement of the code, or duly authorized representative. The term “fire code official” may be used interchangeably with “code official” and “fire official” in this code.

**FIRE WATCH.** A temporary measure intended to ensure continuous and systematic surveillance of a building or portion thereof by one or more qualified individuals for the purposes of identifying and controlling fire hazards, detecting early signs of unwanted fire, raising an alarm of fire and notifying the fire department by method(s) approved or recommended by the fire code official.

### **302.1 Definitions.**

**BONFIRE.** An outdoor fire which burns only seasoned dry firewood or clean untreated lumber intended to minimize the generation of air contaminants and is utilized for occasional special events subject to the following provisions:

1. Prior approval of the Troy City Council.
2. Compliance with any special restrictions as determined by the fire official.
3. Payment of costs associated with special fire protection as determined by the fire official.

**GROUND FIRE.** An outdoor fire for the purpose of viewing or warming, or utilized to cook food for human consumption, or for ceremonial purposes, which burns only seasoned dry firewood or commercially available charcoal briquettes intended to minimize the generation of air contaminants.

**304.2 Storage.** Storage of combustible rubbish or other combustible material such as pallets, crates, boxes, etc., shall not produce conditions that will create a

nuisance or a hazard to the public health, safety or welfare and shall not be within 10 feet (3048 mm) of a structure.

**307.1.1 Prohibited Open Burning.** Open burning that is offensive or objectionable because of smoke or odor emissions or when atmospheric conditions or local circumstances make such fires hazardous shall be prohibited. Burning for purposes of incineration of waste material including paper, leaves, or any other combustible debris, outside of any structure at any place is prohibited.

**307.2 Allowable Burning.** Open burning shall be allowed without prior notification to the fire official for recreational fires, highway safety flares, smudge pots and similar occupational needs.

**307.2.2 Permit Required.** A permit shall be obtained from the fire code official in accordance with Section 105.6 prior to kindling a fire for recognized silvicultural or range or wildlife management practices, management of prairie grasses and plants, prevention or control of disease or pests, or a bonfire. Application for such approval shall only be presented by and permits issued to the owner of the land upon which the fire is to be kindled or the landowner's contracted professional. Bonfires, as defined and set forth in Section 302.1, may be permitted if in compliance with Section 307.4.1 and subject to prior approval of the code official.

**307.3 Extinguishment Authority.** The fire code official or police official is authorized to order the extinguishment by the responsible person, another person responsible, or the fire department of open burning that creates or adds to a hazardous or objectionable situation.

**307.4.1 Bonfires.** A bonfire shall not be conducted within 50 feet (15 240 mm) of a structure or combustible material unless the fire is contained in a barbecue pit. Conditions which could cause a fire to spread within 50 feet (15 240 mm) of a structure shall be eliminated prior to ignition. Once approved, the intended maximum size and duration of a bonfire shall not be increased unless by City Council and only after it has been determined by the fire official that fire safety requirements of the situation and the desirable duration of burn warrant the increase prior to the bonfire.

**307.4.4 Ground Fires.** A ground fire shall be the minimum size for the intended purpose but not larger than 3 feet by 3 feet by 3 feet in dimension and shall be contained in a safe manner.

**307.6 Fire Department Training.** Open burning is allowed for the purpose of training fire fighters for fire fighting practice, or for the purpose of training the public, including workers or employees, or for the purpose of demonstration by the fire official or other trained fire personnel, when such burning is done in accordance with accepted practice.

**312.2 Posts.** Fire hydrants located in vehicular traffic areas shall be protected against vehicle damage by the installation of guard posts. These posts shall be installed in accordance with the City of Troy Development Standards requirements for water mains. It shall be the property owner's responsibility to provide and maintain this protection.

**315.3.3 Separation.** Outside storage shall not be located within 10 feet (3048 mm) of a structure.

**404.5.2 Format.** Fire safety and evacuation plans, general floor plans, seating arrangements, storage configurations, or other specific plans shall be furnished to the fire code official in an approved format upon request.

### SECTION 502 DEFINITIONS

**EMERGENCY VEHICLE ACCESS.** A passageway, as specified in Section 503.7 of this code, for fire apparatus and other emergency vehicles to access a street or property in the event of an emergency.

**503.1 Where required.** Fire apparatus access roads shall be provided and maintained in accordance with Sections 503.1.1 through 503.1.3 and in accordance with City of Troy Development Standards.

**503.2.1 Dimensions.** Fire apparatus access roads and fire lanes shall have an unobstructed width of not less than 18 feet (5486.4 mm), except for approved security gates in accordance with Section 503.6, and an unobstructed vertical clearance of not less than 14 feet (4267.2 mm).

**503.6 Security gates.** The installation of security gates across a fire apparatus access road shall be approved by the fire code official. Where security gates are installed, they shall have an approved means of emergency operation. The security gates and the emergency operation shall be maintained operational at all times. Electric gate operators, where provided, shall be *listed* in accordance with UL 325. Gates intended for automatic operation shall be designed, constructed and installed to comply with the requirements of ASTM F 2200.

**503.7 Emergency Vehicle Access.** Emergency vehicle access (EVA) shall be determined and approved by the fire code official. Unless otherwise required, EVAs shall be of the following specifications:

1. Minimum of 12 feet (3657.6 mm) wide.
2. Surface capable of supporting the weight of fire apparatus up to 60,000 pounds GVW.
3. Minimum grade changes to accommodate fire apparatus undercarriage ground clearances.

4. Mountable curb at entrance/exit with adequate turning radii to and from the EVA.
5. Standard fire lane signage posted at entrance/exit to EVA.
6. EVA signage posted at entrance/exit of EVA, on both sides of surface, every 50 feet (15240 mm) for length of EVA.
7. EVA signage to withstand snow removal/landscape maintenance efforts.
8. EVA to be kept clear of snow and vegetation.

**505.1 Address Identification.** Provided for in City Code Chapter 2.)

**506.1 Where Required.** Where access to or within a structure or an area is restricted because of secured openings or where immediate access is necessary for life-saving or fire-fighting purposes, or where an alarm signaling system or device is installed that may summon the fire department, the fire code official is authorized to require a key box to be installed in an accessible location. The key box shall be of an approved type and shall contain keys to gain access as required by the fire code official. Any appeal that may arise shall be referred to the Building Board of Appeals as established in Section 116 of Chapter 79 of the Troy City Code.

**507.3 Fire Flow.** Fire flow requirements for buildings or portions of buildings and facilities shall be determined in accordance with Appendix B and in accordance with City of Troy Development Standards. An appropriate pressure and flow margin of safety shall be provided with each fire sprinkler system as required by the code official.

**507.5 Fire Hydrant Systems.** Fire hydrant systems shall comply with Sections 508.5.1 through 508.5.6 and shall be in accordance with Appendix C and City of Troy Development Standards.

**507.5.4.1 Removal of Obstructions.** If upon the expiration of the time mentioned in a notice of violation, obstructions or encroachments to a fire hydrant, or to other fire protection equipment, are not removed, the code official shall proceed to remove or have removed the same. The expense incurred shall be a debt to the City from the responsible person and shall be collected as any other debt to the City.

**609.1 General.** Commercial kitchen exhaust hoods shall comply with the requirements of the *Michigan Mechanical Code and NFPA 96*.

**609.1.1 Exhaust Fans.** Exhaust fans for commercial cooking hoods shall be installed so that the fans are operational at all times cooking is occurring. This may be accomplished by a temperature monitoring device installed in, on, or near the hood to activate the exhaust fan(s) at a pre-determined temperature, or as otherwise approved by the code official.

### **803.3.1 Explosive and Highly Flammable or Combustible Materials.**

Furnishings or decorations of an explosive or highly flammable or combustible character shall not be used.

**806.1.1 Restricted Occupancies.** Natural cut trees shall be prohibited in Group A, B, E, F, H, I, M, R-1, R-2, R-4, S, and U occupancies.

**Exception:** Trees located in areas protected by an approved automatic fire sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2 shall not be prohibited in Groups A, B, E, F, M, R-1, R-2, S, and U.

**807.1 General.** In occupancies of Groups A, B, E, F, H, I, M, R-1 and dormitories in Group R-2, R-4, S, and U, curtains, draperies, hangings and other decorative materials suspended from walls or ceilings shall be flame resistant in accordance with Section 805.2 and NFPA 701 or be noncombustible.

**901.5 Installation Acceptance Testing.** Fire detection and alarm systems, fire-extinguishing systems, fire hydrant systems, fire standpipe systems, fire pump systems, private fire service mains and all other fire protection systems and appurtenances thereto shall be subject to acceptance tests as contained in the installation standards and as approved by the fire code official. The fire code official shall be notified before any required acceptance testing is performed in order to schedule, witness and approve such testing prior to use of said fire protection system or equipment.

**901.6.2 Records.** Fire suppression, protection, or other related systems found to be noncompliant, malfunctioning, or otherwise non-operational in the manner required, designed, or intended, shall be identified as “noncompliant” by the service company or individual performing such service, and the fire code official and the occupant shall be notified immediately or at the earliest practical time. At no time shall an approval, compliance, or other indication of operability be affixed to, on, or near such system(s) so as to give false indication of designed, intended, or expected operation.

**901.6.2.2 Noncompliant Systems.** Fire suppression, protection, or other related systems found to be noncompliant, malfunctioning, or otherwise non-operational in the manner required, designed, or intended, shall be identified as “noncompliant” by the service company or individual performing such service, and the fire code official and the occupant shall be notified immediately or at the earliest practical time. At no time shall an approval, compliance, or other indication of operability be affixed to, on, or near such system(s) so as to give false indication of designed, intended, or expected operation.

**901.6.3 Anti-Freeze Fire Sprinkler Systems.** Fire sprinkler systems designed and installed to protect areas prone to freezing shall be drained and tested, then refilled and maintained to insure the solution is operable to -20 degrees F or as otherwise approved by the code official.

### SECTION 902 DEFINITIONS

**NONCOMPLIANT.** Refers to alterations, modifications, or other such changes to fire suppression, protection, detection, alarm, or other related systems, affecting the design, installation, or proper or intended operation of said system. Does not comply with the applicable standard or criteria set forth when originally installed, tested, and approved.

**903.2.11.1.2 Openings on one side only.** Where openings in a story are provided on only one side and the opposite wall of such story is more than 55 feet (16 764 mm) from such openings, the story shall be equipped throughout with an *approved automatic sprinkler system* or openings as specified above shall be provided on at least two sides of the story.

**903.2.11.1.3 Basements.** Where any portion of a *basement* is located more than 55 feet (16 764 mm) from openings required by Section 903.2.11.1, the *basement* shall be equipped throughout with an *approved automatic sprinkler system*.

**903.2.11.3 Buildings Over 30 Feet in Height.** An automatic sprinkler system shall be installed throughout a building that has a floor level which has an occupant load of 30 or more occupants and which is located 30 feet (9144 mm) or more above the lowest level of fire department vehicle access.

**Exceptions:** Refer to the Michigan Building Code, as set forth in Chapter 79, Section 8.1 of the City of Troy Code.

**903.3.5.3 Required Pressure Margin.** The code official is authorized to require a pressure margin of up to twenty (20) p.s.i. over the minimum design criteria for installed automatic fire sprinkler systems. Where this margin cannot be achieved, approved means shall be taken to provide this margin.

**903.4.2 Alarms.** Approved audible-visual devices shall be connected to every automatic sprinkler system. Such sprinkler water-flow alarm devices shall be activated by water flow equivalent to a single sprinkler of the smallest orifice size installed in the system. Alarm devices shall be provided on the exterior of the building in an approved location. Exterior audible-visual devices shall activate only on water flow. Where a fire alarm system is installed in the building, actuation of the automatic sprinkler system shall actuate the building fire alarm system.

**904.3.5 Monitoring.** Automatic fire extinguishing systems shall be monitored by a supervising station in accordance with NFPA 72 as approved by the code official. Where a building fire alarm system is installed, automatic fire-extinguishing systems shall be monitored by the building fire alarm system in accordance with NFPA 72 and shall automatically annunciate their location at the building's fire alarm control panel, and activate the building's appropriate fire protective signaling sequence.

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

**Exceptions:**

1. Open-air-seating spaces without enclosed spaces.
2. Class I automatic dry and semiautomatic dry standpipes or manual wet standpipes are allowed in buildings where the highest floor surface used for human occupancy is 55 feet (16 764 mm) or less above the lowest level of fire department vehicle access.

**907.2.13 High-Rise Buildings.** Buildings having floors used for human occupancy located more than 55 feet (16 764 mm) above the lowest level of fire department vehicle access shall be provided with an automatic fire alarm system and an emergency voice/alarm communication system in accordance with Section 907.2.12.2.

**Exceptions:** Refer to the Michigan Building Code, as set forth in Chapter 79, Section 8.1 of the City of Troy Code.

**907.4.4 Signs.** Where fire alarm systems are not monitored by a supervising station, an approved permanent sign that reads: THIS ALARM DOES NOT NOTIFY THE FIRE DEPARTMENT - TO REPORT A FIRE DIAL 911. Such sign shall be installed adjacent to each manual fire alarm box.

**Exception:** Where the manufacturer has permanently provided this information on the manual fire alarm box and as approved by the code official.

**907.6.2.1.3 Temporal Code-3.** Audible alarm notification appliances shall sound in temporal Code-3 pattern as approved by the code official.

**907.7.2.1 Required Power.** Where required by the code official, systems and their components shall be designed to provide adequate power in order to accommodate additional devices as a result of anticipated future expansion to

the system. Unless otherwise approved by the code official, 10 amps per 10,000 square feet shall be used as a guide.

**907.7.3.2 High-Rise Buildings.** In buildings that have floors located more than 55 feet (16 764 mm) above the lowest level of fire department vehicle access that are occupied for human occupancy, a separate zone by floor shall be provided for all of the following types of alarm-initiating devices where provided:

1. Smoke detectors
2. Sprinkler water-flow devices
3. Manual fire alarm boxes
4. Other approved types of automatic fire detection devices or suppression systems as required by the code official

**907.7.6 Annunciation.** Where fire suppression systems exist in multi-tenant occupancies, i.e., strip malls, separate annunciation, including water flow switch and inspector test valve, shall be required for each separately addressed tenant space unless otherwise approved by the code official.

**909.16.1 Smoke Control Systems.** Fans within the building shall be shown on the fire-fighter's control panel. A clear indication of the direction of airflow and the relationship of components shall be displayed. A means of confirming equipment function such as an atmospheric pressure switch, air velocity switch, or electrical current differential device, shall be installed to indicate the status of fans, dampers, or other associated equipment during alarm activations or smoke control operations. Status indicators shall be provided for all smoke control equipment, annunciated by fan and zone and by pilot-lamp-type indicators as follows:

1. Fans, dampers and other operating equipment in their normal status – WHITE.
2. Fans, dampers and other operating equipment in their off or closed status – RED.
3. Fans, dampers and other operating equipment in their on or open status – GREEN.
4. Fans, dampers and other operating equipment in a fault status – YELLOW/AMBER.

**912.2 Location.** With respect to hydrants, driveways, buildings and landscaping, fire department connections shall be so located that fire apparatus and hose connected to supply the system will not obstruct access to the buildings for other fire apparatus. The location of fire department connections shall be within 100 feet (30 480 mm) of a hydrant and shall be approved by the code official.

### SECTION 915.0 TEMPERATURE AND MONITORING

**915.1 General.** Precautions shall be taken in all rooms and areas containing fire sprinkler equipment such as piping, valve(s), and fire pump(s), to prevent freezing of said equipment during times of extremely cold temperatures. Where the code official deems necessary, equipment shall be installed to monitor the temperature of said areas and send a trouble or supervisory signal to an approved location when the temperature falls below 40 degrees F to warn of freezing conditions so that the occurrence of frozen and/or broken piping, valve(s), and fire pump(s) can be prevented.

**1004.3 Posting of Occupant Load.** Every room or space that is an assembly occupancy shall have the occupant load of the room or space posted in a conspicuous place, near the main exit or exit access doorway from the room or space, or other approved location. Posted signs shall be of an approved legible permanent design and shall be maintained by the owner or authorized agent. The number of occupants permitted shall also be determined in accordance with Chapter 39 of the Troy City Code (parking limitation).

**1022.9 Smokeproof Enclosures and Pressurized Stairways.** In buildings required to comply with Section 403 or 405 of the *International Building Code*, each of the *exit enclosures* serving a *story* with a floor surface located more than 55 feet (16 764 mm) above the lowest level of fire department vehicle access or more than 30 feet (9144 mm) below the finished floor of a *level of exit discharge* serving such stories shall be a *smokeproof enclosure* or *pressurized stairway* in accordance with Section 909.20 of the *International Building Code*.

**1024.1 General.** *Approved* luminous egress path markings delineating the exit path shall be provided in buildings of Groups A, B, E, I, M and R-1 having occupied floors located more than 55 feet (16 764 mm) above the lowest level of fire department vehicle access in accordance with Sections 1024.1 through 1024.5.

**1026.2 Use in a Means of Egress.** *Exterior exit stairways* shall not be used as an element of a required *means of egress* for Group I-2 occupancies. For occupancies in other than Group I-2, *exterior exit ramps* and *stairways* shall be permitted as an element of a required *means of egress* for buildings not exceeding five stories above *grade plane* or having occupied floors more than 55 feet (16 764 mm) above the lowest level of fire department vehicle access.

**1201.1 Scope.** Dry cleaning plants and their operations shall comply with the requirements of this chapter and NFPA 32, and the Michigan Fire Prevention Code 1941 PA 207, as amended, or its equivalent.

**2201.1 Scope.** Automotive motor fuel-dispensing facilities, marine motor fuel-dispensing facilities, fleet vehicle motor fuel-dispensing facilities, aircraft motor-vehicle fuel-dispensing facilities and repair garages shall be in accordance with

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this chapter and the Michigan Building Code, International Fuel Gas Code and the Michigan Mechanical Code, and the Michigan Storage and Handling of Flammable and Combustible Liquids Rules, as amended, or their equivalent. Such operations shall include both operations that are accessible to the public and private operations.

**2206.1 General.** Storage of flammable and combustible liquids shall be in accordance with Chapter 34 and Sections 2206.2 through 2206.6.3, and the Michigan Storage and Handling of Flammable and Combustible Liquids Rules, as amended, or their equivalent.

**2206.7.8 Gravity and Pressure Dispensing.** Flammable or combustible liquids shall not be dispensed by gravity from tanks, drums, barrels or similar containers. Flammable or combustible liquids shall not be dispensed by a device operating through pressure within a storage tank, drum or container. Approved pumps taking suction from the top of the container shall be utilized.

**2803.2 Identification.** Cartons shall be identified on at least one side with the classification level of the aerosol products contained within the carton as follows:

LEVEL \_\_\_\_\_ AEROSOLS

The side of the carton marked shall be clearly visible when stored in configurations of two or more cartons.

**3301.1.1 Explosive Material Standard.** In addition to the requirements of this chapter, NFPA 495 shall govern the manufacture, transportation, storage, sale, handling and use of explosive materials, and the Michigan Explosives Law 1970 PA 202, as amended, or its equivalent.

**3301.1.3 Fireworks.** The possession, manufacture, storage, sale, handling and use of fireworks are prohibited unless in compliance with the Michigan Fireworks Law 1931 PA 328, as amended, or its equivalent.

**3301.1.4 Rocketry.** The storage, handling and use of model and high-power rockets shall comply with the requirements of NFPA 1122, NFPA 1125, and NFPA 1127, and the Michigan Model Rocket Law 1965 PA 333, as amended, or its equivalent.

**3301.2.4 Financial Responsibility.** Deleted.

**3301.2.4 Bond for Public Display:** The permit holder shall furnish a bond in an amount approved by the City of Troy for the payment of all potential damage caused either to the person or property due to the permitted display, and arising from any acts of the permit holder or the agent of the permit holder.

**3308.1 General.** The display of fireworks, including proximate audience displays and pyrotechnic special effects in motion picture, television, theatrical, and group entertainment productions, shall comply with this chapter and NFPA 1123 or NFPA 1126. Approved public displays shall be handled by an approved competent operator, and the fireworks shall be arranged, located, discharged and fired in a manner that will not be a hazard to property or endanger any person.

**3308.11 Retail Display and Sale.** A permit shall be required as set forth in Section 105.6 and regulated in accordance with this section. Fireworks displayed for retail sale shall not be made readily accessible to the public. A minimum of one pressurized-water portable fire extinguisher complying with Section 906 shall be located not more than 15 feet (4572 mm) and not less than 10 feet (3048 mm) from the hazard. "No Smoking" signs complying with Section 310 shall be conspicuously posted in areas where fireworks are stored or displayed for retail sale. No person under the age of 18 years shall sell, purchase or possess fireworks unless accompanied by a parent or legal guardian.

**3401.3 Referenced Documents.** The applicable requirements of Chapter 27, other chapters of this code, the *Michigan Building Code*, and the *Michigan Mechanical Code* pertaining to flammable liquids, and the Michigan Storage and Handling of Flammable and Combustible Liquids Rules, as amended, or their equivalent shall apply.

**3401.4 Permits.** Permits shall be required as set forth in Sections 105.6 and 105.7, and the Michigan Fire Prevention Code 1941 PA 207, as amended, or its equivalent.

**3404.2.9 Above-Ground Tanks.** Above-ground storage of flammable and combustible liquids in tanks shall comply with Section 3404.2 and Sections 3404.2.9.1 through 3404.2.9.7.10, and the Michigan Aboveground Storage Tank Rules, or their equivalent.

**3404.2.11 Underground Tanks.** Underground storage of flammable and combustible liquids in tanks shall comply with Section 3404.2 and Sections 3404.2.11.1 through 3404.2.11.5.2, and the Michigan Underground Storage Tank Rules, or their equivalent.

**3801.2 Permits.** Permits shall be required as set forth in Sections 105.6 and 105.7 and the Michigan Fire Prevention Code 1941 PA 207, as amended, or its equivalent.

**4604.23 Egress path markings.** Existing buildings of Groups A, B, E, I, M and R-1 having occupied floors located more than 55 feet (16 764 mm) above the lowest level of fire department vehicle access shall be provided with luminous egress path markings in accordance with Section 1024.

**Chapter 47  
REFERENCED STANDARDS**

**State of Michigan Laws, Rules, or Requirements including but not necessarily limited to the following with amendments:**

Michigan Fire Prevention Code 1941 PA 207  
Michigan Explosives Law 1970 PA 202  
Michigan Fireworks Law 1931 PA 328  
Michigan Model Rocket Law 1965 PA 333  
Michigan Storage and Handling of Flammable and Combustible Liquids Rules  
Michigan Underground Storage Tank Rules 1999

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Standard reference number	Title	Referenced in code section number
96-08	Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations	609.1
140-08	Standard on Motion Picture and Television Production Studio Soundstages, Approved Production Facilities, and Production Locations	114.5

**Appendix C  
FIRE HYDRANT LOCATIONS AND DISTRIBUTION**

**TABLE C105.1  
NUMBER AND DISTRIBUTION OF FIRE HYDRANTS**

FIRE-FLOW REQUIREMENT (gpm)	MINIMUM NO. OF HYDRANTS	AVERAGE SPACING BETWEEN HYDRANTS <sup>a,b,c</sup> (feet)	MAXIMUM DISTANCE FROM MOST REMOTE PORTION OF BUILDING ACCESSIBLE BY FIRE APPARATUS TO A HYDRANT <sup>d</sup> (feet)
1,750 or less	1	500	250
2,000-2,250	2	450	225
2,500	3	450	225
3,000	3	400	225
3,500-4,000	4	350	210
4,500-5,000	5	300	180
5,500	6	300	180
6,000	6	250	150
6,500-7,000	7	250	150
7,500 or more	8 or more <sup>e</sup>	200	120

For SI: 1 gallon per minute = 3.785 L/m, 1 foot = 304.8 mm

<sup>a</sup> Reduce by 100 feet (30,480 mm) for dead-end streets or roads with dead-end water main.

<sup>b</sup> Where streets are provided with median dividers which cannot be crossed by firefighters pulling hose lines, or where arterial streets are provided with four or more traffic lanes and have a traffic count of more than 30,000 vehicles per day, hydrant spacing shall average 500 feet (152.4 m) on each side of the street and be arranged on an alternating basis up to a fire-flow requirement of 7,000 gallons per minute (26,495 L/min.) and 400 feet (122 m) for higher fire-flow requirements.

<sup>c</sup> Where new water mains are extended along streets where hydrants are not needed for protection of structures or similar fire problems, fire hydrants shall be provided at spacing not to exceed 1,000 feet (305 m) to provide for transportation hazards.

<sup>d</sup> Reduce by 50 feet (15,240 mm) for dead-end streets or roads.

<sup>e</sup> One hydrant for each 1,000 gallons per minute (3,785 L/min.) or fraction thereof.

**Appendix D**  
**FIRE APPARATUS ACCESS ROADS**

**D101.1 Scope.** Fire apparatus access roads shall be in compliance with this appendix and all other applicable requirements of the *International Fire Code*, and City of Troy Development Standards.

**D103.5 Fire apparatus access road gates.** Gates securing the fire apparatus access roads shall comply with all of the following criteria:

1. The minimum gate width shall be 18 feet (5486.4 mm) unless otherwise approved by the code official.
2. Gates shall be of the swinging or sliding type.
3. Construction of gates shall be of materials that allow manual operation by one person.
4. Gate components shall be maintained in an operative condition at all times and replaced or repaired when defective.
5. Electric gates shall be equipped with a means of opening the gate by fire department personnel for emergency access. Emergency opening devices shall be approved by the code official.
6. Manual opening gates shall not be locked with a padlock or chain and padlock unless they are capable of being opened by means of forcible entry tools carried by the fire department.
7. Locking device specifications shall be submitted for approval to the code official.
8. Where buildings protected by electric gates are provided with automatic fire protection and detections systems, gates shall open and remain open upon initiation of an alarm.

**93.00 Adoption of the ~~2006-2009~~ International Fire Code by Reference.** The *International Fire Code*, ~~2006-2009~~ Edition, including its appendices, is hereby adopted by reference with the additions, insertions, deletions and changes prescribed in Section 93.01 of this Ordinance, as the Fire Prevention Code of the City of Troy, regulating and governing the safeguarding of life and property from fire and explosion hazards arising from the storage, handling and use of hazardous substances, materials and devices, and from conditions hazardous to life and property in the occupancy of buildings. This Ordinance and a copy of the International Fire Code, ~~2006-2009~~ Edition, shall be kept on file with the City Clerk. A copy of the International Fire Code in its entirety can also be found at: <http://publicecodes.citation.com/icod/ifc/2009/index.htm>

**93.01 Additions, Insertions, Deletions and Changes to the International Fire Code, ~~2006-2009~~ Edition.** The City of Troy adopts the following additions, insertions, deletions and changes from the *International Fire Code*, ~~2006-2009~~ Edition. Subsequent section numbers used in this section shall refer to the like numbered sections of the *International Fire Code*, ~~2006-2009~~ Edition. Any provisions of Chapter 93, Section 93.01 which are not amended or deleted herein shall remain in full force and effect.

**~~102.6-102.7~~ Referenced codes and standards.** The codes and standards referenced in this code shall be those that are listed in Chapter ~~45-47~~ and such codes and standards shall be considered part of the requirements of this code to the prescribed extent of each such reference. Where differences occur between the provisions of this code and the referenced standards, the provisions which establish the higher standard for the promotion of the safety and welfare of the public and the protection of the public, or as otherwise determined by State of Michigan law, shall apply. References to the International Building Code shall be interpreted as the Michigan Building Code as set forth in Chapter 79, Section 8.1 of the City of Troy Code.

**105.4.2 Information on Construction Documents.** *Construction documents* shall be drawn to scale upon suitable material. Electronic media documents ~~are allowed to shall~~ be submitted ~~when approved as required~~ by the *fire code official*. *Construction documents* shall be of sufficient clarity to indicate the location, nature and extent of the work proposed and show in detail that it will conform to the provisions of this code and relevant laws, ordinances, rules and regulations as determined by the *fire code official*.

**105.6.13.1 Permit Fee.** ~~(See Troy City Code Chapter 60)~~ Provided for in Troy City Code Chapter 60.

**105.6.14.2 Permit Fee.** ~~(See Troy City Code Chapter 60)~~ Provided for in Troy City Code Chapter 60.

**105.6.20.1 Required Amounts for Reporting.** Reportable quantities shall be considered the maximum amount of hazardous material on site at any given time. This amount is required to be reported to the fire department as indicated in the Troy Fire Department's HMIS packet as defined in ~~Chapter 27 Sections 407.5 and 2701.5.2~~ of this code.

~~105.6.21.2~~ **105.6.20.2 Permit Fees.** ~~(See Troy City Code Chapter 60) Provided for in Troy City Code Chapter 60.~~

**105.7.1.1 Installations.** Before any fire suppression system or component is installed, enlarged, extended or modified, a permit shall be obtained from the code official. This shall include any device or relay connected to or controlled by the fire suppression system. All work must be performed by a qualified installer who is properly licensed and/or certified to perform such work as determined by the code official. Construction documents shall be reviewed by the code official prior to the issuance of the permit. Upon issuance of the permit, the permit must be posted at the job site in plain view. ~~The fire code official is authorized to require installation documents in an approved electronic format.~~

**105.7.1.2 Permit Fees.** ~~(See Troy City Code Chapter 60) Provided for in Troy City Code Chapter 60.~~

~~105.7.3.1~~ **105.7.5.1 Installations.** Before any fire alarm or detection system or component is installed, enlarged, extended or modified, a permit shall be obtained from the code official. This shall include auxiliary devices such as magnetic locks, electronic locks, or any device or relay connected to or controlled by the fire alarm or detection system. All work must be performed by a qualified installer who is properly licensed and/or certified to perform such work as determined by the code official. Construction documents shall be reviewed by the code official prior to the issuance of the permit. Upon issuance of the permit, the permit must be posted at the job site in plain view. ~~The fire code official is authorized to require installation documents in an approved electronic format.~~

~~105.7.14~~ **105.7.15 Permit issuance.** A permit granted hereunder shall not be transferable nor shall any such permit be extended beyond the time set forth therein unless approved by the fire official. When work is started without a permit, the permit fee shall be doubled.

## **SECTION ~~112~~114 MISCELLANEOUS HAZARDS**

~~112.1~~ **114.1 Hazardous materials - fire department responsibility.** The Troy Fire Department shall be responsible for gathering and organizing information, identifying risks, and enforcing codes, standards, and laws relating to the production, storage and use of hazardous materials within the City of Troy and the notification to fire fighting personnel of related hazards. The method and

frequency shall be determined by the fire official or his duly authorized representative.

**~~112.4~~ 114.2 Hazardous conditions.** If upon the expiration of the time mentioned in a notice of violation, hazardous conditions, including but not limited to, obstructions or encroachments inhibiting access to or egress from a space or building, are not removed, the code official shall proceed to remove or have removed the same. The expense incurred shall be a debt to the City from the responsible person and shall be collected as any other debt to the City.

**~~112.5~~ 114.3 False alarms.** It shall be unlawful for any person to summon, in any way, the fire department unless a valid reason for their response is present. (See also ~~the~~ Troy City Code ~~False Fire~~ Chapter 103 – Alarm Ordinance.)

**~~112.6~~ 114.4 Nonstandard Equipment.** Equipment and devices which are not in compliance with recognized standards for design and construction may be approved upon presentation of satisfactory evidence that they are designed and constructed for safe operation.

**114.5 Motion Picture & Television Film Production.** Motion picture / television film production and similar entertainment or documentary production activities shall comply with the requirements of this code and NFPA 140.

**~~307.3.3~~ 307.4.4 Ground Fires.** A ground fire shall be the minimum size for the intended purpose but not larger than 3 feet by 3 feet by 3 feet in dimension and shall be contained in a safe manner.

~~**308.3 Open flame.** A person shall not utilize or allow to be utilized, an open flame in connection with a public meeting or gathering for purposes of deliberation, worship, entertainment, amusement, instruction, education, recreation, awaiting transportation or similar purpose in assembly or educational occupancies without first obtaining written approval from the fire code official.~~

**~~404.5.1~~ 404.5.2 Format.** Fire safety and evacuation plans, general floor plans, seating arrangements, storage configurations, or other specific plans shall be furnished to the fire code official in an approved format upon request.

**503.6 Security gates.** The installation of security gates across a fire apparatus access road shall be approved by the fire code official. Where security gates are installed, they shall have an approved means of emergency operation. The security gates and the emergency operation shall be maintained operational at all times. Electric gate operators, where provided, shall be listed in accordance with UL 325. Gates intended for automatic operation shall be designed, constructed and installed to comply with the requirements of ASTM F 2200.

**503.7 Emergency Vehicle Access.** Emergency vehicle access (EVA) shall be determined and approved by the fire code official. Unless otherwise required, EVAs shall be of the following specifications:

1. minimum of 12 feet (3657.6 mm) wide
2. surface capable of supporting the weight of fire apparatus up to 60,000 pounds GVW
3. minimum grade changes to accommodate fire apparatus undercarriage ground clearances
4. mountable curb at entrance/exit with adequate turning radii to and from the EVA
5. standard ~~“No Parking—Fire Lane”~~ fire lane signage posted at entrance/exit to EVA
6. EVA signage posted at entrance/exit of EVA, on both sides of surface, every 50 feet (15240 mm) for length of EVA
7. EVA signage to withstand snow removal/landscape maintenance efforts
8. EVA to be kept clear of snow and vegetation

**505.1 Address ~~Numbers~~ Identification.** ~~(See Troy City Code Chapter 2.)~~  
Provided for in Troy City Code Chapter 2.

**506.1 ~~When- Where~~ Required.** Where access to or within a structure or an area is restricted because of secured openings or where immediate access is necessary for life-saving or fire-fighting purposes, or where an alarm signaling system or device is installed that may summon the fire department, the fire code official is authorized to require a key box to be installed in an accessible location. The key box shall be of an approved type and shall contain keys to gain access as required by the fire code official. Any appeal that may arise shall be referred to the Building Board of Appeals as established in Section 116 of Chapter 79 of the Troy City Code.

**~~508.3~~ 507.3 Fire Flow.** Fire flow requirements for buildings or portions of buildings and facilities shall be determined in accordance with Appendix B and in accordance with City of Troy Development Standards. An appropriate pressure and flow margin of safety shall be provided with each fire sprinkler system as required by the code official.

**~~508.5~~ 507.5 Fire Hydrant Systems.** Fire hydrant systems shall comply with Sections 508.5.1 through 508.5.6 and shall be in accordance with Appendix C and City of Troy Development Standards.

**~~508.5.4.1~~ 507.5.4.1 Removal of Obstructions.** If upon the expiration of the time mentioned in a notice of violation, obstructions or encroachments to a fire hydrant, or to other fire protection equipment, are not removed, the code official shall proceed to remove or have removed the same. The expense incurred shall

be a debt to the City from the responsible person and shall be collected as any other debt to the City.

**609.1 General.** Commercial kitchen exhaust hoods shall comply with the requirements of the ~~International Michigan~~ *Mechanical Code* and NFPA 96.

**903.2.11.1.2 Openings on one side only.** Where openings in a story are provided on only one side and the opposite wall of such story is more than ~~75 feet (22 860 mm)~~ 55 feet (16 764 mm) from such openings, the story shall be equipped throughout with an *approved automatic sprinkler system* or openings as specified above shall be provided on at least two sides of the story.

**903.2.11.1.3 Basements.** Where any portion of a *basement* is located more than ~~75 feet (22 860 mm)~~ 55 feet (16 764 mm) from openings required by Section 903.2.11.1, the *basement* shall be equipped throughout with an *approved automatic sprinkler system*.

~~903.2.10.3~~ **903.2.11.3 Buildings Over 30 Feet in Height.** An automatic sprinkler system shall be installed throughout a building that has a floor level which has an occupant load of 30 or more occupants and which is located 30 feet (9144 mm) or more above the lowest level of fire department vehicle access.

**Exceptions:** Refer to the Michigan Building Code, as set forth in Chapter 79, Section 8.1 of the City of Troy Code.

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

**Exceptions:**

1. Open-air-seating spaces without enclosed spaces.
2. Class I automatic dry and semiautomatic dry standpipes or manual wet standpipes are allowed in buildings where the highest floor surface used for human occupancy is ~~75 feet (22 860 mm)~~ 55 feet (16 764 mm) or less above the lowest level of fire department vehicle access.

~~907.2.12~~ **907.2.13 High-Rise Buildings.** Buildings having floors used for human occupancy located more than 55 feet (16 764 mm) above the lowest level of fire department vehicle access shall be provided with an automatic fire alarm system and an emergency voice/alarm communication system in accordance with Section 907.2.12.2.

**Exceptions:** Refer to the Michigan Building Code, as set forth in Chapter 79, Section 8.1 of the City of Troy Code.

**907.10.2.1 907.6.2.1.3 Temporal Code-3.** Audible alarm notification appliances shall sound in temporal Code-3 pattern as approved by the code official.

**907.5.1. 907.7.2.1 Required Power.** Where required by the code official, systems and their components shall be designed to provide adequate power in order to accommodate additional devices as a result of anticipated future expansion to the system. Unless otherwise approved by the code official, 10 amps per 10,000 square feet shall be used as a guide.

**907.9.2 907.7.3.2 High-Rise Buildings.** In buildings that have floors located more than 55 feet (16 764 mm) above the lowest level of fire department vehicle access that are occupied for human occupancy, a separate zone by floor shall be provided for all of the following types of alarm-initiating devices where provided:

1. Smoke detectors
2. Sprinkler water-flow devices.
3. Manual fire alarm boxes.
4. Other approved types of automatic fire detection devices or suppression systems as required by the code official.

**907.7.1 907.7.6 Annunciation.** Where fire suppression systems exist in multi-tenant occupancies, i.e., strip malls, separate annunciation, including water flow switch and inspector test valve, shall be required for each separately addressed tenant space unless otherwise approved by the code official.

~~1019.1.8 Smokeproof enclosures. 1022.9 Smokeproof Enclosures and Pressureized Stairways.~~ In buildings required to comply with Section 403 or 405 of the ~~code~~ International Building Code, each of the ~~exits of a building which serves stories where the floor surface is~~ exit enclosures serving a story with a floor surface located more than 55 feet (16 764 mm) above the lowest level of fire department vehicle access or more than 30 feet (9144 mm) below the ~~level finished floor~~ of ~~exit discharge~~ a level of exit discharge serving such ~~floor levels stories~~ shall be a ~~smokeproof enclosure~~ smokeproof enclosure or pressurized ~~stairway~~ stairway in accordance with Section 909.20 of the ~~International Building Code~~ International Building Code.

**1023.2 1026.2 Use in a Means of Egress.** ~~Exterior exit stairways~~ Exterior Exit Stairways shall not be used as an element of a required ~~means of egress~~ means of egress for ~~occupancies in~~ Group I-2 occupancies. For occupancies in other than Group I-2, ~~exterior exit stairways~~ exterior exit ramps and stairways shall be permitted as an element of a required ~~means of egress~~ means of egress for buildings not exceeding five stories above ~~grade plane~~ grade plane or having occupied floors more than 55 feet (16 764 mm) in height above the lowest level of fire department vehicle access.

**1024.1 General.** *Approved* luminous egress path markings delineating the exit path shall be provided in buildings of Groups A, B, E, I, M and R-1 having occupied floors located more than ~~75 feet (22 860 mm)~~ 55 feet (16 764 mm) above the lowest level of fire department vehicle access in accordance with Sections 1024.1 through 1024.5.

~~**1025.1 General.** In addition to the means of egress required by this chapter, provisions shall be made for emergency escape and rescue in group R as applicable in section 101.2, classrooms greater than 250 feet 2 (23.2 m 2 ) in group E, and group I-1 occupancies. Basements and sleeping rooms below the fourth story above grade plane shall have at least 1 exterior emergency escape and rescue opening in accordance with this section. Where basements contain 1 or more sleeping rooms, emergency egress and rescue openings shall be required in each sleeping room, but shall not be required in adjoining areas of the basement. Such opening shall open directly into a public street, public alley, yard, or court.~~

**Exceptions:**

- ~~1. In other than group R-3 occupancies as applicable in section 101.2, buildings equipped throughout with an approved automatic sprinkler system in accordance with section 903.3.1.1 or 903.3.1.2.~~
- ~~2. In other than group R-3 occupancies as applicable in section 101.2, sleeping rooms provided with a door to a fire-resistance-rated corridor having access to 2 remote exits in opposite directions.~~
- ~~3. The emergency escape and rescue opening is permitted to open onto a balcony within an atrium in accordance with the requirements of section 404, provided the balcony provides access to an exit and the dwelling unit or sleeping unit has a means of egress that is not open to the atrium.~~
- ~~4. Basements with a ceiling height of less than 80 inches (2032 mm) shall not be required to have emergency escape and rescue windows.~~
- ~~5. High-rise buildings in accordance with section 403.~~
- ~~6. Emergency escape and rescue openings are not required from basements or sleeping rooms which have an exit door or exit access door that opens directly into a public street, public alley, yard, egress court, or to an exterior exit balcony that opens to a public street, public alley, yard, or egress court.~~
- ~~7. Basements without habitable spaces and having not more than 200 square feet (18.6 square meters) in floor area shall not be required to have emergency escape windows.~~

**2201.1 Scope.** Automotive motor fuel-dispensing facilities, marine motor fuel-dispensing facilities, fleet vehicle motor fuel-dispensing facilities, aircraft motor-vehicle fuel-dispensing facilities and repair garages shall be in accordance with this chapter and the Michigan Building Code, International Fuel Gas Code and the Michigan Mechanical Code, and the Michigan Storage and Handling of

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Flammable and Combustible Liquids Rules, as amended, or their equivalent. Such operations shall include both operations that are accessible to the public and private operations.

**2206.1 General.** Storage of flammable and combustible liquids shall be in accordance with Chapter 34 and Sections 2206.2 through 2206.6.3, and the Michigan Storage and Handling of Flammable and Combustible Liquids Rules, as amended, or their equivalent.

**3404.2.9 Above-Ground Tanks.** Above-ground storage of flammable and combustible liquids in tanks shall comply with Section 3404.2 and Sections 3404.2.9.1 through ~~3404.2.9.6.10~~ 3404.2.9.7.10, and the Michigan Aboveground Storage Tank Rules, or their equivalent.

**4604.23 Egress path markings.** Existing buildings of Groups A, B, E, I, M and R-1 having occupied floors located more than ~~75 feet (22 860 mm)~~ 55 feet (16 764 mm) above the lowest level of fire department vehicle access shall be provided with luminous egress path markings in accordance with Section 1024.

**Chapter ~~45~~ 47**  
**REFERENCED STANDARDS**

**State of Michigan Laws, Rules, or Requirements including but not necessarily limited to the following with amendments:**

- Michigan Fire Prevention Code 1941 PA 207
- Michigan Explosives Law 1970 PA 202
- Michigan Fireworks Law 1931 PA 328
- Michigan Model Rocket Law 1965 PA 333
- Michigan Storage and Handling of Flammable and Combustible Liquids Rules
- Michigan Underground Storage Tank Rules 1999

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Standard reference number	Title	Referenced in code section number
<u>96-08</u>	<u>Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations</u>	<u>609.1</u>
<u>140-08</u>	<u>Standard on Motion Picture and Television Production Studio Soundstages, Approved Production Facilities, and Production Locations</u>	<u>114.5</u>

**Appendix C  
FIRE HYDRANT LOCATIONS AND DISTRIBUTION**

**TABLE C105.1  
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FIRE-FLOW REQUIREMENT (gpm)	MINIMUM NO. OF HYDRANTS	AVERAGE SPACING BETWEEN HYDRANTS <sup>a,b,c</sup> (feet)	MAXIMUM DISTANCE FROM MOST REMOTE PORTION OF BUILDING ACCESSIBLE BY FIRE APPARATUS TO A HYDRANT <sup>d</sup> (feet)
1,750 or less	1	500	250
2,000-2,250	2	450	225
2,500	3	450	225
3,000	3	400	225
3,500-4,000	4	350	210
4,500-5,000	5	300	180
5,500	6	300	180
6,000	6	250	150
6,500-7,000	7	250	150
7,500 or more	8 or more <sup>e</sup>	200	120

For **SI**: 1 gallon per minute = 3.785 L/m, 1 foot = 304.8 mm

<sup>a</sup> Reduce by 100 feet (30,480 mm) for dead-end streets or roads with dead-end water main.

<sup>b</sup> Where streets are provided with median dividers which ~~can~~ cannot be crossed by firefighters pulling hose lines, or where arterial streets are provided with four or more traffic lanes and have a traffic count of more than 30,000 vehicles per day, hydrant spacing shall average 500 feet (152.4 m) on each side of the street and be arranged on an alternating basis up to a fire-flow requirement of 7,000 gallons per minute (26,495 L/min.) and 400 feet (122 m) for higher fire-flow requirements.

<sup>c</sup> Where new water mains are extended along streets where hydrants are not needed for protection of structures or similar fire problems, fire hydrants shall be provided at spacing not to exceed 1,000 feet (305 m) to provide for transportation hazards.

<sup>d</sup> Reduce by 50 feet (15,240 mm) for dead-end streets or roads.

<sup>e</sup> One hydrant for each 1,000 gallons per minute (3,785 L/min.) or fraction thereof.