

CHAPTER 9 FIRE PROTECTION SYSTEMS

SECTION FC 901 GENERAL

901.1 Scope. This chapter shall govern the design, installation, operation and maintenance, including inspection and testing, of fire protection devices, equipment and systems, and other fire protection measures for the control and extinguishment of fire.

901.1.1 General. Fire protection systems shall be designed, installed, operated and maintained in accordance with this chapter and the reference standards set forth in FC Table 901.6.1.

901.1.2 Emergency alarm systems. Except as otherwise provided in the construction codes, this code or the rules, emergency alarm systems shall be designed, installed, operated and maintained in the same manner as fire alarm systems.

901.2 Design and installation documents. The commissioner may require design and installation documents and calculations to be submitted for review for all fire protection systems. Design and installation documents required or regulated by this code or the rules shall be submitted for review and approval prior to installation, and shall certify that the design complies with the requirements of this code and the rules.

901.3 Permits. Permits shall be required as set forth in FC 105.6.

901.4 Design and installation. Fire protection systems shall be designed and installed in accordance with FC 901.4.1 through 901.4.6.

901.4.1 Required fire protection systems. Fire protection systems shall be designed and installed in accordance with the construction codes, including the Building Code, and, as applicable, this code and the rules, and the applicable referenced standards listed in this code. Required systems shall be extended or altered as necessary to maintain and continue protection whenever the building or structure is altered. Alterations to fire protection systems shall be performed in compliance with the requirements of this code, the rules, and the construction codes, as applicable. Buildings and structures shall be provided with such fire hose, portable fire extinguishers and other means of preventing and extinguishing fires as the commissioner may direct.

901.4.1.1 Fire protection systems deemed required. A fire protection system for which a design option, exception or reduction to the provisions of this code or the construction codes has been granted shall be deemed a required system.

901.4.2 Fire protection systems not required by code. Any fire protection system or portion thereof not required by this code, the rules or the construction codes, including the Building Code, may be installed to provide partial or complete protection of a building or structure, provided such system meets the requirements of this code, the rules and the construction codes, including the Building Code, as applicable. Where the design and installation of such fire

protection system is governed by this code or the rules, the commissioner may modify such requirements, consistent with the interests of fire safety, upon a determination that such modification will promote public safety by encouraging the installation of such systems.

901.4.3 Additional fire protection systems. Where an existing or proposed storage, handling or use of a material or the conduct of an operation in a particular occupancy gives rise to special hazards in addition to the normal hazards of the occupancy, or where the commissioner determines that size, design and arrangement of the occupancy would unduly delay the ability of firefighting personnel to gain access to the hazard, the commissioner may require additional fire protection or other fire safety measures. Such measures may include the following: automatic fire detection systems, fire alarm systems, fire extinguishing systems, standpipe systems, or portable or fixed extinguishers. Where a certificate of occupancy limits the commissioner's authority to order the installation of such additional systems or the implementation of such additional measures, the commissioner may apply to the Board of Standards and Appeals for a modification of such certificate of occupancy, and such application shall be granted upon a showing that such additional systems or measures will reasonably mitigate the special hazard or delayed access.

901.4.4 Prohibition of deceptive equipment. It shall be unlawful to install or maintain any device that has the physical appearance of fire protection equipment but that does not perform the fire protection function, in any building, structure or premises where it may be confused with actual fire protection equipment.

901.4.5 Certificate of approval. The fire protection devices, equipment and systems listed in FC 112 shall be of a type for which a certificate of approval has been issued in accordance with this code, or which was approved by the Department of Buildings or the Board of Standards and Appeals prior to the effective date of this section, unless such approval by the Department of Buildings or the Board of Standards and Appeals is amended or repealed by the commissioner.

901.4.6 Connection to water supply. Sprinkler systems, and other fire extinguishing and fire protection systems, connected to a potable water supply shall be protected against backflow in accordance with the construction codes and Department of Environmental Protection requirements.

901.5 Installation acceptance testing. Fire detection and alarm systems, fire extinguishing systems, private fire hydrant systems, yard hydrant systems, 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 set forth in the installation standards specified in this code. Where required by the construction codes, including the Building Code, this code or the rules, such tests shall be conducted, at the owner's risk, by his or her representative before a representative of the department. When an installation does not pass an acceptance test required to be witnessed by the department, the necessary corrections shall be made and the installation retested, or, when authorized by the rules, certification of such corrections by a licensed or certified professional submitted to the department.

901.5.1 Occupancy. It shall be unlawful to occupy any portion of a building or structure until all required fire detection systems, fire alarm systems, standpipe systems and fire extinguishing systems have been tested and approved, except as follows:

1. In a new building undergoing construction, a completed floor below the level of ongoing construction may be occupied upon installation, testing and approval of the required fire protection systems on all floors up to and including the occupied floor.
2. In an existing building undergoing alteration, a completed floor may be occupied upon installation, testing and approval of the required fire protection systems for such floor in accordance with Building Code and Department of Buildings requirements.

901.5.2 Correction of non-compliant conditions. When the Department of Buildings authorizes occupancy of a building notwithstanding the existence of installation defects or other non-compliant conditions in the fire protection systems on the floors of the building in which occupancy has been authorized, any and all prior written inspection findings of such defects and other noncompliance shall, upon issuance of the occupancy authorization, constitute an enforceable violation of this code. Such violations shall be corrected within the time for correction set forth in the inspection finding, but in any event within 60 days of occupancy, unless additional time for compliance is granted by the department.

901.6 Maintenance. Fire protection systems shall be maintained in good working order at all times. Any fire protection system that is not in good working order shall be repaired or replaced as necessary to restore such system to good working order, or, where authorized by the Building Code, removed from the premises.

901.6.1 Standards. Fire protection systems shall be inspected, tested, serviced and otherwise maintained in accordance with this section, the rules and the referenced standards listed in FC Table 901.6.1. Where required by this section, such inspection, testing and maintenance shall additionally comply with the rules. Where applicable, the requirements of the reference standards listed in FC Table 901.6.1 shall be in addition to those requirements specified in the rules.

**FC TABLE 901.6.1
FIRE PROTECTION SYSTEM MAINTENANCE STANDARDS**

FIRE PROTECTION SYSTEM	REFERENCED STANDARD
Fire alarm systems	NFPA 72
Fire extinguishing systems	
Aerosol fire extinguishing systems	NFPA 2010
Clean agent fire extinguishing systems	NFPA 2001
Carbon dioxide fire extinguishing system	NFPA 12
Dry chemical fire extinguishing systems	NFPA 17
Expansion foam systems (low, medium and high)	NFPA 11 and NFPA 25
Foam water sprinkler and spray systems	NFPA 16 and NFPA 25
Halon 1301 fire extinguishing systems	NFPA 12A
Water mist fire extinguishing systems	NFPA 25
Wet chemical fire extinguishing systems	NFPA 17A
Portable fire extinguishers	NFPA 10
Water-based fire protection systems (including hydrant, fire hose, sprinkler and standpipe systems)	NFPA 25

901.6.2 Records. Records of all system inspections, tests, servicing and other maintenance required by this code, the rules or the referenced standards shall be maintained in accordance with FC 107.7.

901.6.2.1 Standpipe and sprinkler systems. A visual inspection shall be completed monthly by the certificate of fitness holder in accordance with the requirements of NFPA 25. Periodic testing and other maintenance, as required by NFPA 25, shall be conducted by a certificate of fitness holder possessing the requisite qualifications. All defects or violations shall be noted on the inspection report.

901.6.3 Supervision. The inspection, testing, servicing and other maintenance of the following fire protection systems shall be personally conducted by a certificate of fitness holder, provided, however, that when required by the construction codes or other applicable law, rule or regulation to conduct such maintenance work, such certificate of fitness holder shall hold a master fire suppression piping contractor license, master electrician license or other required license, or be under the direction and control of such license holder.

1. Fire extinguishing systems.

Exception: Sprinkler systems in Group R-3 occupancies.

2. Standpipe systems.

3. Fire alarm systems.

4. Private fire hydrant systems.

5. Yard hydrant systems.

901.6.3.1 Servicing of portable fire extinguishers. It shall be unlawful for any person engaged in the business of servicing portable fire extinguishers to service portable fire extinguishers without a portable fire extinguisher servicing company certificate. Any person that services portable fire extinguishers shall hold a certificate of fitness, except that a person training for such certificate of fitness may service portable fire extinguishers under the personal supervision of a certificate of fitness holder. Nothing in this section shall preclude portable fire extinguishers that are maintained on a premises for use at such premises from being serviced by the owner or occupant of the premises, or an employee of such owner or occupant, who possesses a certificate of fitness for portable fire extinguisher servicing and the tools, materials, equipment and facility necessary to perform such services.

901.6.3.2 Portable fire extinguisher sales. It shall be unlawful for any person to engage in the business of selling portable fire extinguishers door to door to owners of buildings or businesses for use on their premises without a portable fire extinguisher sales company certificate. Persons performing such services for or on behalf of licensed portable fire extinguisher sales companies shall possess a certificate of fitness for portable fire extinguisher sales.

Exception: Sale to owners of Group R-2 and R-3 occupancy buildings.

901.6.3.3 Reserved.

901.6.3.4 Smoke detector cleaning and testing. The cleaning and testing for smoke entry and sensitivity of smoke detectors installed in a fire alarm system shall be performed by a person holding a certificate of fitness for smoke detector maintenance. Such work shall be performed under the supervision and by employees of a person holding a smoke detector maintenance company certificate, except that such smoke detector cleaning and testing may be performed by an owner or occupant of the premises, or an employee of such owner or occupant, who possesses a certificate of fitness for smoke detector maintenance, and possesses the tools, instruments or other equipment necessary to perform such services in accordance with this code and the rules. All other smoke detector maintenance shall be performed by a person possessing the requisite qualifications and experience, and any applicable license or certificate.

901.6.3.5 Central station fire alarm monitoring. It shall be unlawful for any person to operate a central station that monitors fire alarm systems and maintain transmitters in protected premises without a certificate of operation.

901.6.4 Verification of system functionality. Any fire protection system which is or may have been damaged or rendered out of service in whole or in part as result of exposure to fire or water or other cause, shall be inspected to verify that the system is in good working order. If not in good working order, the system shall be repaired or otherwise restored to good working order forthwith.

901.7 Out-of-service systems. The owner and the impairment coordinator for a standpipe system, sprinkler system or fire alarm system shall comply with the requirements of this section whenever such fire protection system is out of service. The department may direct that, until such fire protection system has been returned to service, fire safety measures appropriate to the size, configuration, occupancy, use and hazards be implemented that are in addition to or in lieu of those required by this section.

901.7.1 Impairment coordinator. The building owner shall designate an impairment coordinator to take the actions required by this section when a standpipe system, sprinkler system or fire alarm system is out of service. In the absence of a specific designee, the owner shall be considered the impairment coordinator.

901.7.2 Fire watch. Unless otherwise directed by the department, the building shall be evacuated or a fire watch maintained in accordance with this section when a standpipe system, sprinkler system or fire alarm system is out of service. Such fire watch shall be conducted in compliance with the requirements of FC 901.7.2.1 through 901.7.2.3.

901.7.2.1 Duties and responsibilities. Persons conducting a fire watch shall:

1. continuously patrol the area affected by the out-of-service fire protection system to which such person has been assigned, keeping constant watch for fires;

2. be provided with at least one approved means for notification of the department and any FLS director, FEP coordinator or FEP staff on the premises;
3. immediately report any fire to the department and notify emergency preparedness staff on the premises;
4. be trained in the use of portable fire extinguishers and equipped with a portable fire extinguisher, or made aware of the location of readily accessible portable fire extinguishers in the area to which such person has been assigned to maintain a fire watch;
5. be responsible for extinguishing fires when they are limited in size and spread such that they can readily be extinguished using a portable fire extinguisher;
6. maintain a record of such fire watch on the premises during the fire watch and for a minimum of 48 hours after the fire watch has concluded; and
7. have no other duties.

901.7.2.2 Fire guards required. The fire watch required when a standpipe system, sprinkler system or fire alarm system is out of service shall be maintained in accordance with FC 901.7.2.2.1 and this section.

Exception: The impairment coordinator or other building staff trained and knowledgeable in conducting a fire watch may conduct a fire watch in lieu of a fire guard during the initial 4 hours of a planned removal from service, or after discovery of an unplanned out-of-service condition, provided that the floor or area in which the fire protection system is out of service does not exceed 50,000 square feet (4645 m²).

901.7.2.2.1 Fire guards required. The fire watch required for an out-of-service standpipe system, sprinkler system or fire alarm system shall be maintained by one or more fire guards.

901.7.2.3 Fire watch coverage. A sufficient number of fire guards shall be provided such that each floor or area in which the fire protection system is out of service is patrolled at least once an hour. The area to be patrolled by each fire guard shall not exceed more than 50,000 square feet (4645 m²) of floor area. The area patrolled by each fire guard may be further limited by the department depending on the configuration of the premises, impediments to patrol, nature of the occupancy, fire risk, and other fire safety considerations.

901.7.3 Planned removal from service. The impairment coordinator shall be made aware in advance of any planned removal from service of a standpipe system, sprinkler system or fire alarm system, or system component, for repair, servicing, alteration, testing and other maintenance of the system or component, or to allow construction to be performed in the area protected by the system without unnecessarily activating it. The impairment coordinator shall authorize and personally supervise the placing of the fire protection system out of service.

Before authorizing the placing of the fire protection out of service the impairment coordinator shall:

1. notify the certificate of fitness holder responsible for supervising the maintenance of the standpipe system, sprinkler system or fire alarm system.
2. determine the extent and expected duration of the out-of-service condition.
3. inspect the areas or buildings involved and assess the increased risks.
4. make appropriate recommendations to the owner.
5. notify the department in accordance with FC 901.7.5, if required.
6. notify the responsible person designated by the owner to issue hot work authorizations in accordance with FC Chapter 35.
7. notify the central station and insurance carrier.
8. notify the occupants in the affected areas if the duration of time the sprinkler system or fire alarm system will be out of service is estimated to be more than 30 minutes.
9. place a tag at each fire department connection, standpipe and sprinkler system control valve and fire command center, indicating which fire protection system, or part thereof, is out of service.
10. maintain the fire protection system in service until work is ready to begin.

901.7.4 Unplanned out-of-service condition. Any person, upon becoming aware of any condition, except a planned removal from service, rendering a standpipe system, sprinkler system or fire alarm system, or part thereof, inoperable in whole or in part, shall notify the owner and the impairment coordinator of such condition. The impairment coordinator shall take the actions set forth in FC 901.7.3 and 901.7.5, and such other actions as are necessary or appropriate to protect the occupants of the building and promptly restore the system to service.

901.7.5 Notification to department. The department shall be notified that a standpipe system, sprinkler system or fire alarm system is out of service, whether by reason of a planned removal from service or an unplanned out-of-service condition, where required by FC 901.7.5.1 through 901.7.5.3.

901.7.5.1 Standpipe systems. Notification shall be made to the department whenever a standpipe system is or will be out of service for any period of time.

901.7.5.2 Sprinkler systems and fire alarm systems. Notification that a sprinkler system or fire alarm system, or any part thereof, is or will be out of service shall be made to the department under the following circumstances:

1. The sprinkler system or fire alarm system is or will be out of service on more than one floor of a building; or
2. With respect to a sprinkler system, the work or repairs cannot be completed, and the system restored to service, within 8 hours of the time the system was placed or went out of service; or
3. With respect to a fire alarm system, the work or repairs will require the fire alarm system to be out of service for 8 hours or more in any 24-hour period or 30 hours or more (consecutive or non-consecutive) in any month; or
4. One or more other fire protection systems in the area in which a fire protection system is out of service are or will also be out of service at the same time.

901.7.5.3 Reporting requirements. Notification of an out-of-service condition pursuant to this section shall be made by the impairment coordinator to the department at the applicable telephone number set forth in FC 901.10. Such notification shall include the following information:

1. The owner or impairment coordinator's name and contact information;
2. The building address;
3. The type of fire protection system that is out of service;
4. Whether the fire protection system is out of service by reason of a planned removal from service (and if so, the reason for placing it out of service) or an unplanned out-of-service condition;
5. If a planned removal from service, the date and time the fire protection system will be placed out of service, and the estimated duration the system will be out of service;
6. If an unplanned out-of-service condition, the estimated duration the system will be out of service;
7. The floors or areas in which the fire protection system is out of service;
8. Whether the other fire protection systems are in good working order; and
9. The name and certificate number of the certificate of fitness holder responsible for supervision of the fire protection system that is out of service.

901.7.6 Restoring systems to service. When an out-of-service device, equipment or system is restored to service, the impairment coordinator shall:

1. conduct necessary inspections and tests to verify that the affected systems are operational.

2. notify the department in accordance with FC 901.10.
3. notify the owner, central station, insurance carrier, emergency preparedness staff, and, if previously notified, the occupants in the affected areas.
4. remove the out-of-service tags.

901.7.7 Out-of-service standpipe systems at construction sites. The owner, fire safety manager and/or impairment coordinator shall take the following actions whenever a standpipe system at a construction site is out of service:

1. Immediately notify the department in accordance with FC 901.10 of any unplanned out-of-service condition, and otherwise comply with the requirements of FC 901.7.4.
2. Notify the department in accordance with FC 901.10 at least 24 hours prior to any planned removal of the standpipe system from service, and otherwise comply with the requirements of FC 901.7.3.
3. Ensure that a fire watch is continuously maintained in compliance with the requirements of FC 901.7.2 while the standpipe system is out of service.
4. Repair the standpipe system and return it to service in compliance with the requirements of FC 901.7.6 and Section 3303.8.1 of the Building Code. The construction site may continue to be occupied, and construction, demolition or alteration activities may continue, pending such repair and restoration to service, except:
 - 4.1. as otherwise provided in Section 3303.8.1 of the Building Code; and/or
 - 4.2. as otherwise directed by the commissioner upon a determination that, in the absence of an operable standpipe system, the conduct of certain construction, demolition or alteration activities would be imminently perilous to life or property; and
 - 4.3. that in no circumstance shall hot work be conducted on the construction site until such time as the standpipe system is restored to service and the standpipe alarm reactivated.

901.8 Tampering with or rendering equipment inoperable. Fire protection systems and related apparatus shall not be tampered with or rendered inoperable, except as set forth in FC 107.4.

901.9 Recall of fire protection system components. A component of a fire protection system regulated by this code that is subject to a voluntary or mandatory recall under federal law shall be replaced with an approved, listed component in compliance with the referenced standards. A record of the replacement of the component shall be maintained in accordance with FC 107.7.

901.10 Telephone numbers for department notification. Except as otherwise required by the rules or order of the department, when this code requires non-emergency notification to be made to the department, such notification shall be made by calling one of the following telephone numbers, depending upon the borough in which the property is located:

Bronx properties	(718) 430-0200
Brooklyn properties	(718) 965-8300
Manhattan properties	(212) 570-4300
Queens properties	(718) 476-6200
Staten Island properties	(718) 494-4296

SECTION FC 902 DEFINITIONS

902.1 Definitions. The following terms shall, for the purposes of this chapter and as used elsewhere in this code, have the meanings set forth in FC 202.

ALARM NOTIFICATION APPLIANCE.

ALARM SIGNAL.

ANNUNCIATOR.

AUTOMATIC.

CENTRAL STATION.

CERTIFICATE OF OPERATION.

CLEAN AGENT.

**COMMERCIAL COOKING EXHAUST SYSTEM SERVICING COMPANY
CERTIFICATE.**

COMMERCIAL COOKING SYSTEM.

DOMESTIC COOKING HOOD.

DOMESTIC COOKING SYSTEM.

EMERGENCY ALARM SYSTEM.

FIRE ALARM BOX, MANUAL.

FIRE ALARM SIGNAL.

FIRE ALARM SYSTEM.

FIRE DETECTOR, AUTOMATIC.

FIRE EXTINGUISHING SYSTEM.

FIRE PROTECTION SYSTEM.

FIRE PUMP.

FIRE SUPPRESSION PIPING CONTRACTOR.

IMPAIRMENT COORDINATOR.

INITIATING DEVICE.

MULTIPLE-STATION ALARM DEVICE.

OUT-OF-SERVICE SYSTEM.

PLUMBER.

PORTABLE COOKING EQUIPMENT.

PORTABLE FIRE EXTINGUISHER SALES COMPANY CERTIFICATE.

PORTABLE FIRE EXTINGUISHER SERVICING COMPANY CERTIFICATE.

PRESIGNAL SYSTEM.

PROTECTED PREMISES.

SINGLE-STATION SMOKE ALARM.

SMOKE ALARM.

SMOKE DETECTOR.

SMOKE DETECTOR MAINTENANCE COMPANY CERTIFICATE.

SPRINKLER SYSTEM.

STANDPIPE, MULTI-ZONE.

STANDPIPE SYSTEM.

SUPERVISORY SIGNAL.

SUPERVISORY SIGNAL-INITIATING DEVICE.

TROUBLE SIGNAL.

UNNECESSARY ALARM.

UNWARRANTED ALARM.

WATER MIST SYSTEM.

SECTION FC 903 SPRINKLER SYSTEMS

903.1 General. Sprinkler systems shall comply with the requirements of this section.

903.2 Where required. Sprinkler systems shall be provided in buildings, structures, premises, or parts thereof, when required by the construction codes, including the Building Code, this code or the rules.

903.2.1 through and including 903.2.10 Reserved.

903.2.11 During construction. Sprinkler systems required during construction, alteration and demolition operations shall be provided in accordance with Chapter 33 of the Building Code and FC 3314.

903.2.12 Reserved.

903.2.13 Other required fire extinguishing systems. In addition to the requirements of FC 903.2, the provisions indicated in FC Table 903.2.13 also require the installation of a fire extinguishing system for certain buildings and areas.

**FC TABLE 903.2.13
ADDITIONAL REQUIRED FIRE EXTINGUISHING SYSTEMS**

SECTION	SUBJECT
314.5.1	Covered kiosks, displays, booth or concession stands
315.7.2.1	Indoor additional storage of solid fuel
317.4.3.3	Defueling area
321.4	Construction shanties and construction storage facilities and areas – fixed guideway transit and passenger rail systems
322.4	Construction shanties and construction storage facilities and areas – road tunnels, bridges and other limited access highways
501.4.3.1	Altered buildings on substandard width public streets and fire apparatus access roads
503.2.10	Buildings fronting on substandard width fire apparatus access roads
503.3.2	Buildings fronting on substandard width public streets
608.9.4	Energy storage system, stationary (NFPA 13 system, where required/allowed)
1027.6	Equipment storage in Group I-2 building hallway corridors
2108.2	Newly-established dry cleaning facilities
2108.3	Lawfully existing dry cleaning facilities
2306.8	Flammable liquid motor fuel-dispensing areas

2308.7.4	Indoor CNG compressing, storage and dispensing areas
2309.3.4.2	Hydrogen motor fuel-dispensing areas under canopies
2311.8.2	Repair garage for vehicle fueled by lighter-than-air motor fuel
2404.3.3	Spray rooms and spray booths
2405.2	Dip-tank rooms
2405.3.4	Dip tanks
2405.4.4	Hardening and tempering tanks
2406.3.3.1	Powder coating rooms and booths
2407.3.2.1	Electrostatic spray finishing operations
2408.2.2	Spraying operations involving the use of organic peroxides and other dual-component coatings
2409.2.1	Resin application areas
2703.10	HPM facilities
2703.10.1.1	HPM work station exhaust
2703.10.1.2	HPM combustible tools
2703.10.2	HPM gas cabinets and exhaust enclosures
2703.10.3	HPM corridors
2703.10.4	HPM exhaust
2703.10.4.1	HPM noncombustible ducts
2703.10.4.2	HPM combustible ducts
2903.4	Organic coating manufacturing facility
3006.1	Class A and B furnaces
3006.2	Class C and D furnaces
FC Table 3206.2	High-piled storage fire protection
3206.4	High-piled storage
3207.2	Solid-piled and shelf storage
3208.2	Rack storage
3208.5.1	Extra-high-rack combustible storage
3209.2	Automated storage
3704.5	Storage of more than 1,000 cubic feet of loose combustible fibers
3706.6	Combustible fibers, storage at waterfront structure
4003.5.1	Distilleries
5003.8.4.1	Gas rooms
5003.8.5.3	Exhausted enclosures
5004.5	Indoor storage of hazardous materials
5005.1.8	Indoor handling and use of hazardous materials
5104.4.1	Aerosol warehouses
5106.3.2	Retail aerosol displays over 8 feet high
5306.2.1	Medical gas rooms
5306.2.3	Medical gas cabinets
5606.7	Storage of small arm ammunition, powder-actuated tool loads, black powder or smokeless propellant
5704.3.5.1	Below grade storage of combustible liquids
5704.3.7.5.1	Flammable and combustible liquid storage rooms
5704.3.8.4	Flammable and combustible liquid storage warehouses
5705.3.7.3	Flammable and combustible liquid Group H-2 or H-3 areas
5706.4.10.5	Bulk plants and terminals
5706.4.10.5.1	Cargo tank loading racks
5806.3.2	Sterilization systems
6004.1.2.2	Gas cabinets for highly toxic and toxic gas
6004.1.3.1	Exhausted enclosures for highly toxic and toxic gas
6004.2.2.6	Gas rooms for highly toxic and toxic gas

6004.3.3	Outdoor storage for highly toxic and toxic gas
6109.9	Storage of LPG within buildings accessible to the public
6304.1.4	Solid and liquid oxidizer storage areas
6404.2.2	Outdoor storage areas of pyrophoric materials with overhead construction
6504.1.1	Pyroxylin plastic storage cabinets and vaults
6504.1.3	Pyroxylin plastic storage vaults
6504.2	Pyroxylin plastic storage, handling and use
Building Code	Sprinkler requirements as set forth in the construction codes, including the Building Code

For SI: 1 cubic foot = 0.023 m³.

903.3 Installation requirements. Except as otherwise provided in this code, sprinkler systems shall be designed and installed in accordance with the construction codes, including the Building Code.

903.3.1 Inspector's test gauge. A pressure gauge shall be installed at or near the inspector's test connection in Group R-2 occupancies, converted dwellings, and single room occupancies to enable persons responsible for inspecting or testing the sprinkler system, including certificate of fitness holders, plumbers, master fire suppression contractors and department representatives, to visually confirm the static pressure in the system. Installation of a pressure gauge shall constitute an operational requirement of this code.

903.4 Sprinkler system supervision and alarms. All valves controlling the water supply for sprinkler systems, pumps, tanks, water levels and temperatures, critical air pressures, and water-flow switches on all sprinkler systems shall be electrically supervised by the fire alarm system where a fire alarm system is required by Section 907 of the Building Code.

Exceptions:

1. Sprinkler systems protecting Group R-3 occupancies.
2. Reserved.
3. Sprinkler systems installed in accordance with NFPA 13R, as modified by FC Appendix B, where a common supply main is used to supply both domestic water and the sprinkler system, and a separate shutoff valve for the sprinkler system is not provided, except where the Building Code requires such sprinkler system to be supervised.
4. Jockey pump control valves that are sealed or locked in the open position.
5. Control valves to commercial kitchen hoods, paint spray booths or dip tanks that are sealed or locked in the open position.
6. Valves controlling the fuel supply to fire pump engines that are sealed or locked in the open position.
7. Trim valves to pressure switches in dry, preaction and deluge sprinkler systems that are sealed or locked in the open position.

903.5 Maintenance. Sprinkler systems shall be periodically inspected, tested, serviced and otherwise maintained in accordance with FC 901.6 and the rules. Except as otherwise provided in FC 903.5.1 through 903.5.3, sprinkler systems shall be inspected and otherwise maintained as follows:

1. Sprinkler systems shall be inspected at least once a month by a person holding a certificate of fitness, employed by the owner, to ensure that all parts of the system are in perfect working order, and that the department connections, if any, are ready for immediate use by the department. A detailed record of each inspection shall be kept for examination by any representative of the department.
2. There shall be one or more employees instructed in the maintenance of sprinkler systems.
3. There shall be kept available at all times in the premises a supply of at least six extra sprinkler heads, representative of the sprinkler heads installed on the sprinkler system, to replace promptly any fused or damaged sprinklers.
4. Fire department connections shall be hydrostatically tested at least once every 5 years, in accordance with FC 912.6.

903.5.1 Sprinkler systems in converted dwellings and single room occupancies. In any converted dwelling or tenement used in whole or in part for single room occupancy, regardless of occupancy classification, in which a sprinkler system has been installed pursuant to the requirements of the Multiple Dwelling Law, such sprinkler system shall be inspected and otherwise maintained as follows:

1. Sprinkler systems shall be inspected at least once a month by a person employed by the owner, holding a certificate of fitness issued by the department, a fire suppression contractor license issued by the Department of Buildings, or, for a sprinkler system with not more than thirty sprinkler heads, a plumber, to ensure that all parts of the system are in perfect working order, and that the department connections, if any, are ready for immediate use by the department. Such inspection shall include a check of all control valves on the system, including the main supply control valve, making certain the valves are fully open and sealed in such open position; a check of the static pressure in the sprinkler system from a pressure gauge located at or near the inspector's test connection, making certain the system design pressure is being maintained; a check that all sprinkler heads are in place; and such other requirements as the commissioner may prescribe. A detailed record of each inspection shall be kept for examination by any representative of the department.
2. There shall be one or more employees instructed in the location and status of the sprinkler system control valves.
3. There shall be kept available at all times in the premises a supply of at least six extra sprinkler heads, representative of the sprinkler heads installed at the premises, to replace promptly any fused or damaged sprinklers, except that a supply of at least three extra

sprinkler heads shall be kept available for any sprinkler system installed in accordance with NFPA 13R, as modified by FC Appendix B.

4. Fire department connections shall be hydrostatically tested at least once every 5 years in accordance with FC 912.6.
5. A flow test of the sprinkler system shall be conducted at least once every year. Such test shall be conducted at the owner's risk by his or her representative, who shall be a plumber or licensed master fire suppression contractor. Upon order of the commissioner, but at least once every 5 years, such flow test shall be conducted before a representative of the department. A report of each test, on an approved form, shall be certified by such plumber or licensed master fire suppression contractor and shall be kept for not less than 5 years and made available for inspection by any representative of the department.
6. The owner or managing agent of any building subject to the requirements of this section shall maintain a record of each inspection and test and a listing of all outstanding violations issued pursuant to this section. Such records and listing shall be made available for inspection by occupants of such residential buildings during regular business hours.

903.5.2 Sprinkler systems in other R-2 occupancies. Except as otherwise provided in FC 903.5.1, in Group R-2 occupancies, sprinkler system shall be inspected and otherwise maintained as follows:

1. Sprinkler systems shall be inspected at least once a month by a person employed by the owner, holding a certificate of fitness issued by the department, a fire suppression contractor license issued by the Department of Buildings, or, for a sprinkler system with not more than thirty sprinkler heads, a plumber, to ensure that all parts of the system are in perfect working order, and that the department connections, if any, are ready for immediate use by the department. Such inspection shall include a check of all control valves on the system, including the main supply control valve, making certain the valves are fully open and sealed in such open position; a check of the static pressure in the sprinkler system from a pressure gauge located at or near the inspector's test connection, making certain the system design pressure is being maintained; a check that all sprinkler heads are in place; and such other requirements as the commissioner may prescribe. A detailed record of each inspection shall be kept for examination by any representative of the department.
2. There shall be one or more employees instructed in the location and status of the sprinkler system control valves.
3. There shall be kept available at all times in the premises a supply of at least six extra sprinkler heads, representative of the sprinkler heads installed at the premises, to replace promptly any fused or damaged sprinklers, except that a supply of at least three extra sprinkler heads shall be kept available for any sprinkler system installed in accordance with NFPA 13R, as modified by FC Appendix B.

4. Fire department connections shall be hydrostatically tested at least once every 5 years in accordance with FC 912.6.
5. A flow test of the sprinkler system shall be conducted upon order of the commissioner, but at least once every 30 months. Such test shall be conducted at the owner's risk by his or her representative, who shall be a plumber or licensed master fire suppression contractor. Upon order of the commissioner, but at least once every 5 years, such test shall be conducted before a representative of the department. A report of each test, on an approved form, shall be certified by such plumber or licensed master fire suppression contractor and shall be kept for not less than 5 years and made available for inspection by any representative of the department.
6. The owner or managing agent of any building subject to the requirements of this section shall maintain a record of each inspection and test and a listing of all outstanding violations issued pursuant to this section. Such records and listing shall be made available for inspection by occupants of such residential buildings during regular business hours.

903.5.3 Sprinkler systems in Group R-3 occupancies. Sprinkler systems in buildings classified in Group R-3 occupancies shall be maintained in perfect working order.

903.5.4 Sprinkler system control valve signage. A sign identifying the location of the sidewalk box housing the sprinkler system control valve shall be conspicuously posted on the exterior wall of the building directly opposite the sidewalk box. Such sign shall have red letters 1 inch (25 mm) in height on a white background and read: "Sprinkler System Shutoff Valve (*indicate distance*) Feet Opposite This Sign" or other approved design.

903.6 Dry pipe sprinkler system valves. In addition to the maintenance requirements set forth in FC 903.5, any dry pipe valve installed in a sprinkler system shall be trip tested at least once every 5 years and whenever the system is altered. Such trip test shall be conducted at the owner's risk, with the control valve fully open and the quick-opening device, if provided, in service, by a master fire suppression contractor licensed by the Department of Buildings before a representative of the department.

SECTION FC 904 FIRE EXTINGUISHING SYSTEMS

904.1 General. Fire extinguishing systems shall be designed, installed, operated and maintained in accordance with this section, FC 901, the terms and conditions of the listing, if applicable, the applicable referenced standards set forth in FC Table 904.1, and the manufacturer's instructions.

Exception: Sprinkler systems, which are governed by FC 903.

**FC TABLE 904.1
FIRE EXTINGUISHING SYSTEM REFERENCED STANDARDS**

FIRE EXTINGUISHING SYSTEM	REFERENCED STANDARD
Aerosol fire extinguishing systems	NFPA 2010
Carbon dioxide fire extinguishing system	NFPA 12
Clean agent fire extinguishing systems	NFPA 2001

Dry chemical fire extinguishing systems	NFPA 17
Expansion foam systems (low, medium and high)	NFPA 11
Foam water sprinkler and spray systems	NFPA 16 and NFPA 25
Halon 1301 fire extinguishing systems	NFPA 12A
Water mist fire extinguishing systems	NFPA 750
Water spray fixed systems for fire protection	NFPA 15
Wet chemical fire extinguishing systems	NFPA 17A

904.1.1 Fire extinguisher system design. Fire extinguishing systems may be engineered or pre-engineered. Pre-engineered systems shall be of a type for which a certificate of approval has been issued in accordance with FC 112 and 901.4.5. Except as otherwise provided in this code or other applicable law, rule, regulation or standard, fire extinguishing systems may be designed as local applications or as total flooding systems. All activation devices and other system components shall be listed and installed in accordance with the listing and the manufacturer's instructions.

904.1.2 Installation acceptance testing. All fire extinguishing systems shall be subject to acceptance test conducted at the owner's risk by his or her representative before a representative of the department. The owner's representative shall furnish the necessary equipment required to conduct the test. A discharge test may be required as set forth in the applicable installation standard or as required by the department when there is evidence that the system will not provide the necessary level of protection.

904.1.3 Additional safeguards. If an area is protected by a fire extinguishing system which uses an extinguishing agent that will make the protected area hazardous by its discharge or thermal decomposition, suitable safeguards shall be provided to ensure prompt evacuation, to prevent entry into such atmospheres, and to provide means for prompt rescue of any trapped personnel. Such safeguards shall include establishment of a trained brigade, equipped with and qualified in the use of self-contained breathing apparatus with 30-minute minimum supply, for prompt search of the protected area.

Exception: Self-contained breathing apparatus shall not be required for a clean agent fire extinguishing system installation if:

1. The installation is provided with an alarm system that is connected to an approved central station.
2. The protected area is provided with an approved fixed emergency forced ventilation system able to expel the extinguishing agent. Such emergency forced ventilation system shall have a capacity sufficient to effect at least twenty air changes per hour.
3. The protected area is of a size, design and/or occupied in such a manner that egress will not be impeded.
4. The protected area is not normally occupied by any individual requiring assistance in evacuation.

904.1.4 Prohibited fire extinguishing systems. It shall be unlawful to install carbon dioxide, halon and clean agent fire extinguishing systems as set forth in FC 904.1.4.1 through 904.1.4.3.

904.1.4.1 Existing carbon dioxide systems. It shall be unlawful to install or continue to maintain total flooding carbon dioxide fire extinguishing systems within normally occupied areas, including commercial kitchens. Total flooding carbon dioxide systems installed in normally occupied areas prior to July 1, 2008 were required by this code to be removed by July 1, 2013. Existing total flooding carbon dioxide fire extinguishing systems in such areas shall be removed and a replacement fire extinguishing system installed, where required, in accordance with the Building Code, this code or other applicable laws, rules and regulations.

904.1.4.2 Existing halon systems. It shall be unlawful to install a halon system in any building or occupancy. Lawfully existing halon fire extinguishing systems shall be maintained in accordance with FC 904.5. If a lawfully existing system cannot be maintained under the laws, rules, regulations, standards and design and installation approvals under which it was installed, such system shall be removed and replaced with a type of fire extinguishing system complying with this code.

904.1.4.3 Clean agent systems. It shall be unlawful to install clean agent systems that are not total flooding systems. Lawfully existing clean agent fire extinguishing systems that are not total flooding systems shall be maintained in accordance with FC 904.5. If a lawfully existing system cannot be maintained under the laws, rules, regulations, standards and design and installation approvals under which it was installed, such system shall be removed and replaced with a type of fire extinguishing system complying with this code.

904.2 Where required. Where this code or the rules requires the installation of a fire extinguishing system, other than a sprinkler system, the commissioner shall approve the type of fire extinguishing system to be installed. Fire extinguishing systems installed as an alternative to sprinkler systems otherwise required by this code or the construction codes, including the Building Code, shall be approved by the commissioner. Such a system may be accepted by the commissioner where the nature of the fire hazard is such that water would be ineffective or hazardous as an extinguishing agent, or the need to preserve the historic, irreplaceable or special nature of the contents of the occupancy militates against the installation of a sprinkler system. Sprinklers shall not be omitted from any room or area merely because it is of fire-resistance-rated construction or contains electrical equipment except as allowed by Section 903 of the Building Code.

If a system using a fixed amount of extinguishing agent is authorized to be installed in lieu of a required sprinkler system or any other fire extinguishing system otherwise required by law, a connected reserve of charged agent cylinders equal to the primary supply shall be provided. The commissioner may impose additional requirements on the installation of any fire extinguishing system to be installed in lieu of any required sprinkler system. Fire extinguishing systems shall not be considered alternatives for the purposes of exceptions or reductions allowed by other requirements of this code.

904.3 Installation. Fire extinguishing systems shall be installed in accordance with this section.

904.3.1 Electrical wiring. Electrical wiring shall be in accordance with the Electrical Code.

904.3.2 Activation. Unless otherwise provided by this code or the rules, fire extinguishing systems shall be designed and installed to activate automatically. Automatically activating fire extinguishing systems shall additionally be provided with a manual means of activation.

904.3.3 System interlocking. Automatic equipment interlocks with fuel shutoffs, ventilation controls, door closers, window shutters, conveyor openings, smoke and heat vents, and other features necessary for proper operation of the fire extinguishing system shall be provided as required by the construction code or other design and installation standard utilized for the hazard.

904.3.4 Alarms and warning signs. Where alarms are required to indicate the operation of fire extinguishing systems, distinctive audible, visible alarms and warning signs shall be provided to warn of pending agent discharge. Where exposure to automatic-extinguishing agents poses a hazard to persons and a delay is required to ensure the evacuation of occupants before agent discharge, a separate warning signal shall be provided to alert occupants once agent discharge has begun. Carbon dioxide fire extinguishing systems, where allowed, shall comply with the signage requirements of NFPA 12.

904.3.5 Monitoring. All indoor fire extinguishing systems, except commercial cooking, domestic cooking and spray finishing fire extinguishing systems, installed after the effective date of this section shall be monitored by an approved central station. Where a building fire alarm system is installed, all such indoor fire extinguishing systems, except domestic cooking systems, shall be monitored by such fire alarm system.

904.3.6 Flood hazard. Non-water fire extinguishing system control panels located in areas of special flood hazard or on the premises of Group I-2 occupancies that are hospitals located in shaded X-Zones (as defined in Section G201 of Appendix G of the Building Code) shall be located at or above the design flood elevation in accordance with Appendix G of the Building Code.

904.3.7 Additional safety measures. Additional safety measures shall be provided for the fire extinguishing systems as set forth in FC 904.3.7.1 and 904.3.7.2.

904.3.7.1 Carbon dioxide systems. Carbon dioxide systems, where allowed, shall be provided with the additional safety measures set forth in FC 904.3.7.1.1 through 904.3.7.1.8.

904.3.7.1.1 Egress precautions. All areas whose atmospheres will be made hazardous by the discharge of carbon dioxide shall be provided with:

1. Exit and exit routes that are kept clear at all times.
2. Lighting and exit directional signs in accordance with the construction codes, including the Building Code.

3. Only outward swinging, self-closing doors at exits, and panic hardware on any such doors that are secured with a locking or latching device.

904.3.7.1.2. Ventilation and other safety equipment. A carbon dioxide system shall be provided with a fixed emergency forced ventilation system able to clear the area with sufficient capacity to accomplish at least 6 air changes per hour, and such other safety equipment as may be prescribed by the commissioner.

904.3.7.1.3 Detection, activation, alarm and control. Detection, predischage alarms and discharge alarms shall be provided within and outside the protected area and such other areas that are made hazardous by a carbon dioxide discharge. Such alarms shall be audible and visible.

904.3.7.1.3.1 Automatic operation. The carbon dioxide fire extinguishing system shall be activated by an automatic cross-zoned detection system in which activation of a detection device in one zone shall sound a local alarm and transmit an alarm to an approved central station, and activation of a detection device in the cross zone shall initiate the predischage warning signal and after a time delay, initiate the discharge of carbon dioxide. The predischage warning signal time delay shall be of sufficient duration to allow for evacuation from the protected area. Distinct alarms shall indicate the activation of a detector in one zone, the activation of a detector in a cross zone (predischage alarm) and the discharge of carbon dioxide. Such alarms shall be continued until the atmosphere has been returned to normal except that the alarm for the detector in one zone may be discontinued when the alarm for the cross-zoned detector is activated.

Exceptions:

1. A carbon dioxide fire extinguishing system activated solely by manual means may be installed with department approval upon a showing satisfactory to the department of the need for such a system.
2. A detection system that is not cross-zoned may be installed with department approval upon a showing satisfactory to the department of the need for such a detection and activation system.

904.3.7.1.3.2 Manual operation. A manual pull station shall be provided which, upon activation, transmits an alarm to an approved central station, overrides any delay other than the predischage delay, and causes the carbon dioxide to discharge. Activation of a carbon dioxide fire extinguishing system by means of a manual pull station shall result in a complete predischage delay sequence prior to system discharge.

904.3.7.1.3.3 Abort systems. Abort systems may be installed, but shall be limited to systems activated by smoke detectors. Abort controls shall be located in the protected area near the means of egress for the area, and shall be designed to cause the discharge of carbon dioxide after a time delay unless the abort control is

reactivated for another cycle of delay. Abort controls shall not interfere with transmission of local alarms or central station alarms.

904.3.7.1.3.4 Power supply. Power supply to the alarm system shall be in accordance with applicable requirements of the Electrical Code and the construction codes, including the Building Code.

904.3.7.1.4 Pressure relief venting. The protected area enclosure shall be provided with suitable pressure relief venting which vents outdoors.

Exception: Such venting shall not be required when a registered design professional certifies that the walls, ceilings and floors comprising the protected space have sufficient porosity and leakage to prevent damage to the integrity of such space upon discharge of the extinguishing agent, and that the inert gas agent leakage into other non-flooded rooms and spaces will not reach dangerous concentrations.

904.3.7.2 Clean agent systems. Clean agent systems, where allowed, shall be provided with the additional safety measures set forth in FC 904.3.7.2.1 through 904.3.7.2.6.

904.3.7.2.1 System alarm and activation. Audible and visible alarms shall be installed both inside and outside the protected area to signal the activation of an automatic detection device and the operation of the fire extinguishing system. Such signals shall continue until the atmosphere has been returned to normal. Activation of a single automatic detection device shall sound a local alarm and transmit an alarm to an approved central station. Unless the alarm is cancelled by an abort system as set forth in FC 904.3.7.2.3, activation of a second automatic detection device shall, within 30 seconds, initiate the discharge of clean agent. Power supply to the alarm system shall be in accordance with the Electrical Code, the construction codes, including the Building Code, and NFPA 2001, as modified by FC Appendix B.

904.3.7.2.2 Warning and instruction signs. Warning and instruction signs shall be posted at entrances to and within the protected area subject to flooding.

904.3.7.2.3 Abort systems. Abort systems may be installed only on systems activated by smoke detectors. Abort controls shall be manually operated, shall be located in the protected area, and shall cause the discharge of the clean agent after a 2-minute delay unless the abort control is reactivated for another cycle of delay. A manual pull station shall be provided which, upon activation, shall transmit an alarm to an approved central station, override the delay and cause the clean agent to discharge immediately. Abort controls shall not interfere with transmission of local alarms or central station alarms.

904.3.7.2.4 Means of egress. Where the protected area is normally occupied, provision shall be made for adequate clear routes of exit with doors opening in direction of travel. Emergency lighting shall be provided for such exits. Exit directional signs shall clearly indicate the path of egress and exits shall be clearly marked.

904.3.7.2.5 Fixed emergency forced ventilation. When the protected area is normally occupied, a fixed emergency forced ventilation system sufficient to accomplish at least six air changes per hour of the flooded protected area shall be provided unless all of the following apply:

1. The clean agent fire extinguishing system is used to extinguish a Class A fire.
2. The design concentration does not exceed the “no observable adverse effect level” for halocarbon agents, or “no effect level” for inert gas agents as defined in NFPA 2001, as modified by FC Appendix B.
3. If other than inert gas agents are used, the quantity of the thermal decomposition products formed from such agents is below the dangerous toxic load (DTL) for humans as described in Meldrum's “Toxicology of Substances in Relation to Major Hazards: Hydrogen Fluoride” (HMSO, London, 1993). Upon request, documentation of hazard assessment of thermal decomposition products formed from such agents shall be filed with the department.

904.3.7.2.6 Pressure relief venting. Clean agent fire extinguishing systems using inert gas agents shall be provided with suitable pressure relief venting for the flooded protected area that discharges outdoors.

Exception: Such venting shall not be required when a registered design professional certifies that the walls, ceilings and floors comprising the protected space have sufficient porosity and leakage to prevent damage to the integrity of such space upon discharge of the extinguishing agent, and that the inert gas agent leakage into other non-flooded rooms and spaces will not reach dangerous concentrations.

904.3.8 Commercial cooking systems. Commercial cooking fire extinguishing systems shall be installed in accordance with FC 904.3.8.1 through 904.3.8.3.

904.3.8.1 Types of systems approved for commercial cooking operations. Commercial cooking operations shall be protected by one of the following types of fire protection systems, as listed for commercial cooking operations.

1. Wet chemical fire extinguishing systems designed in accordance with NFPA 17A, as modified by FC Appendix B, and tested in accordance with UL 300.
2. Foam-water sprinkler system or foam-water spray systems designed in accordance with NFPA 16, as modified by FC Appendix B.
3. Water mist systems designed in accordance with NFPA 750, as modified by FC Appendix B.

904.3.8.1.1 Dry chemical, non-listed wet chemical and carbon dioxide systems. Dry chemical systems, wet chemical systems not listed to the UL 300 standard and carbon

dioxide systems may not be used for commercial cooking operations and shall be removed and replaced with a type of fire extinguishing system complying with this code.

904.3.8.2 Manual activation device. A manual activation device for the fire extinguishing system, except foam-water systems, shall be installed at a location near a means of egress that is readily accessible from the cooking area and not less than 10 feet (3048 mm) nor more than 20 feet (6096 mm) from the commercial cooking appliances protected by the fire extinguishing system, or other approved location. The manual activation device shall be located a minimum of 42 inches (1067 mm) and a maximum of 48 inches (1219 mm) above the floor. The manual activation device shall require a maximum force of 40 pounds (178 N) and a maximum movement of 14 inches (356 mm) to activate the fire extinguishing system. A sign or marking in accordance with FC Table 609.7 that clearly identifies the commercial cooking appliances being protected shall be posted on or adjacent to the manual activation device. The manual activation device shall be kept unobstructed at all times.

904.3.8.3 System interconnection. The activation of the fire extinguishing system shall automatically shut down the fuel and electrical power supply to the cooking equipment. The fuel and electrical supply reset shall be manual.

904.4 Installation inspection and testing. Fire extinguishing systems shall be inspected and tested upon completion of the installation prior to the installation acceptance testing required by FC 904.1.2.

904.4.1 Inspection. The fire extinguishing system shall be inspected for the following conditions:

1. Hazard specification for consistency with design hazard.
2. Type, location and spacing of automatic- and manual- initiating devices.
3. Size, placement and position of nozzles or discharge orifices.
4. Location and identification of audible and visible alarm devices.
5. Identification of devices with proper designations.
6. Operating instructions, to ensure that the system is correctly operated during the acceptance testing.

904.4.2 Alarm testing. Notification appliances, connections to fire alarm systems, and connections to an approved central station shall be tested to verify proper operation, including the following conditions:

1. The audibility and visibility of notification appliances signaling agent discharge or system operation, where required, shall be verified.

2. Central station connections shall be tested to verify proper identification and retransmission of alarms.

904.5 Maintenance of fire extinguishing systems. Fire extinguishing systems shall be periodically inspected, tested and otherwise maintained in accordance with FC 901, 904.1.1 and 904.4, the applicable NFPA standard, and the system listing. Additional maintenance shall be performed as set forth in FC 904.5.1 through 904.5.3, FC Table 904.5.2, and the rules.

904.5.1 Monthly inspection. At least once a month, a visual inspection of the fire extinguishing system shall be conducted by a trained and knowledgeable person to confirm that the system appears to be in good working order, including the following conditions:

1. The fire extinguishing system is intact and undamaged, including the extinguishing agent container, system piping, nozzles and protective nozzle caps.
2. Any fusible links or other fire detection devices are clean.
3. Access to each manual activation device, if required, for the fire extinguishing system is not obstructed and any tamper indicator is intact.
4. Check the pressure gauge, control panel or control unit, as applicable, to determine whether the fire extinguishing system is operational and whether there are any supervisory or trouble signals.
5. If an automatic foam system or water mist system, check the water supply valve to confirm that it is in the locked, open position; if the system is manually operated, confirm that the water supply is in good working order.
6. The maintenance tag for the fire extinguishing system is in place and has not expired.

904.5.2. Semiannual inspection. A licensed master fire suppression piping contractor holding a certificate of fitness properly trained and having knowledge of the installation, operation and maintenance of the specific fire extinguishing system, or a person holding a certificate of fitness under the direction and control of such license holder, shall inspect, test, service and otherwise maintain such system in accordance with this section and the manufacturer's specifications and servicing manuals at least on a semiannual basis. Such semiannual inspection, testing and servicing shall include all procedures necessary to determine that the system is in good working order, including the following actions:

1. Verification that the hazard has not changed.
2. Verification that the fire extinguishing system has not been altered.
3. Examination of all detection systems, alarms, manual stations, extinguishing agent containers, releasing devices, piping, hose assemblies, nozzles, and all ancillary equipment.

4. Verification that the extinguishing agent has not been discharged.
5. Verification that the agent distribution piping is not obstructed.
6. Verification that the extinguishing agent container and/or ancillary pressure containers have been, as applicable, inspected, retested and marked in conformance with the requirements of the United States Department of Transportation.
7. A test of the system's automatic and manual releasing devices, including any associated equipment. Fixed temperature-sensing elements shall be maintained to ensure proper operation of the system.
8. A test of the gas and electric power source shut-off (interlock) devices, if applicable.
9. Preparation and submission to the owner of a written report of any system defects.
10. Upon satisfactory completion of the semiannual inspection and correction of all defects, providing the owner with an inspection, testing and service compliance tag. Such tag shall indicate the date issued, the name and license number of the licensed master fire suppression piping contractor issuing the tag and the certificate of fitness holder conducting the inspection, and that the system was found to be in compliance with the requirements of this section.

**FC TABLE 904.5.2
FIRE EXTINGUISHING SYSTEM
INSPECTION, TESTING AND MAINTENANCE SCHEDULE**

SYSTEM	INSPECTION	TESTING	OTHER MAINTENANCE
Aerosol fire extinguishing systems	Monthly	Annually	
Carbon dioxide fire extinguishing system	Monthly	Semiannually	Annually
Clean agent fire extinguishing systems	Monthly	Semiannually	Annually
Dry chemical fire extinguishing systems	Monthly	Semiannually	
Expansion foam systems (low, medium and high)	Monthly	Annually	
Foam water sprinkler and spray systems	See NFPA 25		
Halon 1301 fire extinguishing systems	Monthly	Semiannually	
Water mist fire extinguishing systems	See NFPA 25		
Wet chemical fire extinguishing systems	Monthly	Semiannually	

904.5.3 Five-year retest. All fire extinguishing systems shall be retested once every five years from the date of acceptance of the system. The first retest of fire extinguishing systems lawfully existing on the effective date of this provision shall be conducted on or before the fifth anniversary of the date of acceptance after such effective date. Such test shall be conducted, and reported to the department, in the manner prescribed by rule, by a licensed master fire suppression contractor holding a certificate of fitness, properly trained and having knowledge of the installation, operation and maintenance of the specific fire extinguishing system, or a person holding a certificate of fitness under the direction and control of such license holder.

Exception: Commercial cooking and domestic cooking fire extinguishing systems.

904.6 Additional maintenance requirements. The following fire extinguishing systems shall be maintained in accordance with the additional maintenance requirements set forth in FC 904.6.1 through 904.6.10.

904.6.1 Aerosol systems. Aerosol fire extinguishing systems shall be maintained in accordance with FC 901.6.1 and 904.5.

904.6.2 Carbon dioxide systems. Carbon dioxide systems shall be maintained in accordance with FC 901.6.1, 904.5 and 904.6.2.1 through 904.6.2.4.

904.6.2.1 High-pressure containers. High-pressure containers shall be weighed and the date of the last hydrostatic test shall be verified at 6-month intervals. Where a container shows a loss in original content of more than 10 percent, the container shall be refilled or replaced.

904.6.2.2 Low-pressure containers. The liquid-level gauges of low-pressure containers shall be observed at one-week intervals. Where a container shows a content loss of more than 10 percent, the container shall be refilled to maintain the minimum gas requirements.

904.6.2.3 System hoses. System hoses shall be examined at 12-month intervals for damage. Damaged hoses shall be replaced or tested. At five-year intervals, all hoses shall be tested.

904.6.2.3.1 Test procedure. Hoses shall be tested at not less than 2,500 pounds per square inch (psi) (17 238 kPa) for high-pressure systems and at not less than 900 psi (6206 kPa) for low-pressure systems.

904.6.2.4 System components. System components, such as switches, door and window releases, interconnected valves, damper releases and supplementary alarms, shall be manually operated at 12-month intervals to ensure that such components are in proper operating condition.

904.6.3 Clean agent systems. Clean agent systems shall be maintained in accordance with FC 901.6.1, 904.5, 904.6.3.1 and 904.6.3.2.

904.6.3.1 Containers. The extinguishing agent quantity and pressure of the containers shall be checked at 6-month intervals. Where a container shows a loss in original weight of more than 5 percent or a loss in original pressure, adjusted for temperature, of more than 10 percent, the container shall be refilled or replaced. The weight and pressure of the container shall be recorded on a tag attached to the container.

904.6.3.2 System hoses. System hoses shall be examined at 12-month intervals for damage. Damaged hoses shall be replaced or tested. All hoses shall be tested at 5-year intervals.

904.6.4 Dry chemical systems. Dry chemical systems shall be maintained in accordance with FC 901.6.1, 904.5 and 904.6.4.1.

904.6.4.1. Additional maintenance requirements. Extinguishing agent containers shall be weighed to verify the required amount of agent. Stored pressure-type units shall be checked for the required pressure. The cartridge of cartridge-operated units shall be weighed and replaced at intervals specified by the manufacturer.

904.6.5 Foam systems. Foam systems shall be maintained in accordance with FC 901.6.1, 904.5 and 904.6.5.1.

904.6.5.1 Commercial cooking installations. Foam fire extinguishing systems installed to protect a commercial cooking operation shall additionally comply with the requirements of FC 904.3.8.

904.6.6 Halon systems. Lawfully existing halon systems shall be maintained in accordance with FC 901.6.1, 904.5 and 904.6.6.1 through 904.6.6.3. All other halon systems shall be removed in accordance with FC 904.1.4.2.

904.6.6.1 Containers. The extinguishing agent quantity and pressure of containers shall be checked at least on a semiannual basis. Where a container shows a loss in original weight of more than 5 percent or a loss in original pressure (adjusted for temperature) of more than 10 percent, the container shall be refilled or replaced. The weight and pressure of the container shall be recorded on a tag attached to the container.

904.6.6.2 System hoses. System hoses shall be examined at 12-month intervals for damage. Damaged hoses shall be replaced or tested. At 5-year intervals, all hoses shall be tested.

904.6.6.2.1 Test procedure. For Halon 1301 systems, hoses shall be tested at not less than 1,500 psi (10 343 kPa) for 600 psi (4137 kPa) charging pressure systems and not less than 900 psi (6206 kPa) for 360 psi (2482 kPa) charging pressure systems. For Halon 1211 hand-hose line systems, hoses shall be tested at 2,500 psi (17 238 kPa) for high-pressure systems and 900 psi (6206 kPa) for low-pressure systems.

904.6.6.3 System components. System components, such as switches, door and window releases, interconnected valves, damper releases and supplementary alarms, shall be manually operated at 12-month intervals to ensure such components are in proper operating condition.

904.6.7 Water mist systems. Water mist systems shall be maintained in accordance with FC 901.6.1, 904.5 and NFPA 750, as modified by FC Appendix B.

904.6.8 Wet chemical systems. Wet chemical systems shall be maintained in accordance with FC 901.6.1, 904.5 and 904.6.8.1 through 904.6.8.3.

904.6.8.1 Additional maintenance requirements. Extinguishing agent containers shall be weighed to verify the required amount of agent. Stored pressure-type units shall be checked for the required pressure. The cartridge of cartridge-operated units shall be weighed and replaced at intervals specified by the manufacturer.

904.6.8.2 Fusible link maintenance. Fixed temperature-sensing elements shall be maintained to ensure proper operation of the system.

904.6.8.3 Commercial cooking installations. Wet chemical fire extinguishing systems installed to protect a commercial cooking operation shall additionally comply with the requirements of FC 904.3.8.

904.6.9 Commercial cooking systems. Commercial cooking fire extinguishing systems shall be maintained in accordance with FC 609, 901.6.1, 904.5 and 904.6.9.1.

904.6.9.1 Fusible link and sprinkler head replacement. Fusible links and foam water sprinkler heads shall be replaced at least annually, and other protection devices shall be serviced or replaced in accordance with the manufacturer's instructions.

Exception: Frangible bulbs are not required to be replaced annually.

904.6.10 Domestic cooking systems. Fire extinguishing systems installed on domestic cooking hoods in Group I-2 occupancies, or in any other occupancy, shall be installed and maintained in accordance with FC 904.6.10.1 and 904.6.10.2.

904.6.10.1 Installation. Such fire extinguishing systems shall be installed by a master fire suppression piping contractor, who shall certify to the department that the installation is in compliance with the construction codes and this code. Such certification shall be submitted to the department in the manner prescribed by the department.

904.6.10.2 Maintenance. Such fire extinguishing systems shall be maintained in accordance with FC 901.6.1 and 904.5.

SECTION FC 905 STANDPIPE SYSTEMS

905.1 General. Standpipe systems shall be provided where required by the construction codes, including the Building Code, this code or the rules. Fire hose threads used in connection with standpipe systems shall be approved by the commissioner. Standpipe systems in buildings used for high-piled combustible storage shall be in accordance with FC Chapter 32.

905.1.1 Standpipe system operator. In buildings with a multi-zone standpipe system, such system shall be continuously under the personal supervision of a person holding a certificate of fitness, who shall be immediately available to assist the department in the operation of such system.

905.2 Installation standards. Standpipe systems shall be installed in accordance with the construction codes, including the Building Code.

905.3 Standpipe elevation markings. The elevation above grade of each floor level shall be conspicuously marked on or adjacent to the standpipe hose outlet on each floor of a building or structure more than 240 feet (73 152 mm) in height. The elevation shall be indicated in feet. In lieu of markings, durable signage may be posted adjacent to the standpipe hose outlet on each floor.

905.4 Standpipe elevation chart. A chart listing the floor number (consistent with elevator operation) and corresponding elevation above grade of each floor level of the building shall be prepared for each building or structure more than 240 feet (73 152 mm) in height and kept at the fire command center or other approved location.

905.5 Fire department connections. Fire department connections serving a standpipe system shall be marked in accordance with FC 912.

905.6 Reserved.

905.7 Cabinets. Cabinets containing firefighting equipment, such as standpipes, fire hose, portable fire extinguishers and water supply control valves, shall not be obstructed from use or obscured from view.

905.8 Reserved.

905.9 Valve supervision. Valves controlling water supplies shall be supervised in the open position so that a change in the normal position of the valve will generate a supervisory signal at the central station required by FC 903.4. Where a fire alarm system is provided, a signal shall also be transmitted to the fire alarm system control panel.

Exceptions:

1. Valves to underground key or hub valves in roadway boxes provided by the municipality or public utility do not require supervision.
2. Valves locked in the normal position and inspected as provided in this code in buildings not equipped with a fire alarm system.

905.10 During construction. Standpipe systems required during construction, alteration and demolition operations shall be provided in accordance with Chapter 33 of the Building Code and FC 3313.

905.11 Reserved.

905.12 Maintenance. Standpipe systems shall be maintained, including all required inspection, testing and servicing, in accordance with this section, FC 901.6 and NFPA 25.

905.12.1 Standpipe hydrostatic pressure and flow tests. Upon order of the commissioner, but at least once every 5 years, the standpipe system shall be subjected to a hydrostatic pressure test and a flow test to demonstrate its suitability for department use. These tests shall be conducted in compliance with the requirements of the rules and shall be conducted at the owner's risk, by his or her representative before a representative of the department.

SECTION FC 906 PORTABLE FIRE EXTINGUISHERS

906.1 Where required. Portable fire extinguishers shall be installed in the following locations.

1. In all Group A, B, E, F, H, I, M, R-1, R-2 adult homes and enriched housing, and S occupancies.
2. Within 30 feet (9144 mm) of commercial cooking equipment.
3. In areas where flammable or combustible liquids are manufactured, stored, handled and used, including dispensing, in quantities requiring a permit pursuant to FC 105.6.
4. On each floor of structures under construction, alteration or demolition, except detached Group R-3 occupancies, in accordance with FC 3315.1.
5. Where required by the sections indicated in FC Table 906.1.
6. Special-hazard areas, including but not limited to laboratories, computer rooms and generator rooms, where required by the commissioner.
7. Where required by other provisions of this code or the rules.

**FC TABLE 906.1
ADDITIONAL REQUIRED PORTABLE FIRE EXTINGUISHERS**

SECTION	SUBJECT
303.5	Tar kettles and asphalt melters
307.4	Open fires
307.5.4	Portable outdoor barbecues
308.5.3.2	Flaming food and beverage preparation in Group A occupancies and public gathering places
308.6.4	Alcohol fueled decorative open-flame device
309.2.5, 309.3.3 and 309.3.4	Powered industrial trucks and storage areas
310.7.3.4	Non-tobacco hookah establishment
315.3.6	Outdoor storage of combustible material
317.5.2	Automotive salvage and wrecking facilities
603.3.1	Fuel oil-burning equipment
609.9	Commercial kitchen
2005.2	Aircraft towing vehicles
2005.3	Aircraft welding apparatus
2005.4	Aircraft-fueling vehicles
2005.5	Aircraft hydrant-fueling vehicles
2005.6	Aircraft fuel-dispensing stations
2007.7	Heliports and helistops
2010.6.2	Helicopter lift operations
2108.4	Dry cleaning facilities
2305.5	Automotive liquid motor fuel-dispensing facilities

2308.7.4.2	CNG motor fuel-dispensing facilities
2310.6.4	Marine liquid motor fuel-dispensing facilities
2311.7 and 2311.8.7	Repair garages
2404.4.10	Spraying spaces
2404.5.5	Limited spraying areas
2405.5.3	Dip-tank rooms and spaces
2406.4.6	Powder coating rooms and spaces
2410.1.2	Floor finishing operations
2808.8	Storage of wood chips and other wood waste materials
2809.5	Exterior lumber storage
2903.5	Organic-coating areas
3006.3	Industrial furnaces
3104.12	Tents and other membrane structures
3206.10	High-piled storage
3315.1	Buildings, structures, premises and facilities under construction, alteration or demolition
3317.3	Roofing operations
3408.2	Tire rebuilding/storage
3504.2.6	Welding and other hot work
3605.2.3	Marina fire protection systems and equipment
3703.6 and 3706.6.4	Combustible fibers
4006.14	Distilleries
5007.9.3	Transportation of flammable and combustible liquids in cargo tanks
5306.7	Medical gas storage
5606.8	Powder-actuated tool loads at a construction site
5609.6.1	Special effects
5703.2.1	Flammable and combustible liquids, general
5704.3.3.1	Indoor storage of flammable and combustible liquids
5704.3.7.5.2	Liquid storage rooms for flammable and combustible liquids
5705.4.9	Solvent distillation units
5706.2.7	Construction sites—flammable and combustible liquids storage
5706.2.8	Construction sites—dispensing from cargo tanks
5706.4.10.1	Bulk plants and terminals for flammable and combustible liquids
5706.8.1(20)	Vapor recovery and processing equipment at bulk plants and terminals
5707.8	Fleet fueling operations
5806.5	Sterilizers using flammable gas containing ethylene oxide
6108.2	LPG

906.2 General requirements. Portable fire extinguishers shall be selected, installed and maintained in accordance with this section and NFPA 10.

Exceptions:

1. The travel distance to reach a portable fire extinguisher shall not apply to the spectator seating portions of Group A-5 occupancies.
2. In Group I-3, portable fire extinguishers may be provided at staff locations.

906.2.1 Maintenance. Portable fire extinguishers shall be maintained in accordance with FC 901.6 and this section.

906.2.1.1 Monthly inspection. An inspection to verify that the portable fire extinguishers are readily available and in good working order shall be conducted at least once a month. The person conducting such inspections shall keep records of all portable fire extinguishers inspected, including the date the inspection was performed, the person performing the inspection, and those portable fire extinguishers found to require corrective action. Such

recordkeeping shall be either kept on a tag or label securely attached to the portable fire extinguisher, on an inspection checklist maintained on file or by an approved electronic method that provides a permanent record.

Exception: An inspection to verify that the portable fire extinguishers are readily available and in good working order shall be conducted at least once every 3 years for dry-chemical or halogenated agent portable fire extinguishers that are monitored by a listed and approved electronic monitoring device complying with all of the following requirements:

1. The electronic monitoring device shall continuously confirm the proper location and charge of each portable fire extinguisher so monitored.
2. Loss of power to the electronic monitoring device or other interruption of the proper functioning of such device shall initiate a trouble signal at an approved location on the premises at which the portable fire extinguisher being monitored is installed.
3. The portable fire extinguisher being monitored shall be located indoors or in cabinets outdoors. The portable fire extinguisher being monitored shall not be in a corrosive environment.
4. The periodic inspection of the portable fire extinguisher shall include inspection and testing of the electronic monitoring device.
5. An electronic record that the electronic monitoring of the portable fire extinguisher is being maintained, and that the portable fire extinguisher is properly located and charged, shall be maintained in accordance with FC 107.7.

906.2.1.2 Servicing. Annual servicing and recharging shall be conducted in accordance with NFPA 10 by an approved portable fire extinguisher servicing company and a technician meeting the requirements of FC 901.6.3.1.

906.2.1.3 Hydrostatic testing. Periodic hydrostatic testing of portable fire extinguishers shall be done in accordance with NFPA 10.

906.2.1.4 Proof of compliance. A portable fire extinguisher servicing company holding a company certificate shall document its servicing of a portable fire extinguisher by affixing to the portable fire extinguisher the proof of compliance approved for such purposes and in such other manner as may be required by the rules.

906.3 Size and distribution. The size and distribution of portable fire extinguishers shall be in accordance with FC 906.3.1 through 906.3.4.

906.3.1 Class A fire hazards. The minimum size, number and placement of portable fire extinguishers in occupancies in which there is a Class A fire hazard risk (ordinary combustibles materials) shall be in accordance with FC Table 906.3.1.

906.3.1.1 Sprinklered areas. In buildings classified as Group A-3 occupancy houses of worship and Group B occupancy office buildings that are protected throughout by a sprinkler system, the maximum floor area per unit of A required by FC Table 906.3.1 may be doubled.

906.3.2 Class B fire hazards. The minimum size, number and placement of portable fire extinguishers in occupancies in which there is a Class B fire hazard risk (flammable or combustible liquids with depths of less than or equal to 0.25-inch (6.35 mm)) shall be in accordance with FC Table 906.3.2. The minimum size, number and placement of portable fire extinguishers in occupancies in which there is a Class B fire hazard risk (flammable or combustible liquids with depths greater than 0.25-inch (6.35 mm)) shall be in accordance with NFPA 10.

906.3.3 Class C fire hazards. The minimum size, number and placement of portable fire extinguishers in which there is a Class C fire hazard risk (energized electrical equipment) shall be in accordance with NFPA 10.

906.3.4 Class D fire hazards. The minimum size, number and placement of portable fire extinguishers in occupancies in which there is a Class D fire hazard risk (combustible metals) shall be in accordance with NFPA 10.

**FC TABLE 906.3.1
PORTABLE FIRE EXTINGUISHERS FOR CLASS A FIRE HAZARDS**

	LIGHT (Low) HAZARD OCCUPANCY ^d	ORDINARY (Moderate) HAZARD OCCUPANCY ^d	EXTRA (High) HAZARD OCCUPANCY ^d
Minimum Rated Single Extinguisher	2-A ^c	2-A	4-A ^a
Maximum Floor Area Per Unit of A	3,000 square feet ^c	1,500 square feet	1,000 square feet
Maximum Travel Distance to Extinguisher	75 feet	75 feet	75 feet

For SI: 1 foot = 304.8 mm, 1 square foot = 0.0929 m², 1 gallon = 3.785 L.

a. Two 2½-gallon water-type extinguishers shall be deemed the equivalent of one 4-A rated extinguisher.

b. Reserved.

c. Two water-type extinguishers each with a 1-A rating shall be deemed the equivalent of one 2-A rated extinguisher for Light (Low) Hazard Occupancies.

d. For the purposes of FC Table 906.3.1, the terms “Light (Low) Hazard”, “Ordinary (Moderate) Hazard” and “Extra (High) Hazard” shall be as defined in NFPA 10.

e. In occupancies classified as Groups A-3, B, or E which are protected throughout by a sprinkler system, the maximum floor area per unit of A may be doubled.

**FC TABLE 906.3.2
FLAMMABLE OR COMBUSTIBLE LIQUIDS WITH DEPTHS OF LESS THAN OR EQUAL TO 0.25-INCH^a**

TYPE OF HAZARD	BASIC MINIMUM PORTABLE FIRE EXTINGUISHER RATING	MAXIMUM TRAVEL DISTANCE TO PORTABLE FIRE EXTINGUISHERS (feet)
Light (Low)	5-B	30
	10-B	50
Ordinary (Moderate)	10-B	30
	20-B	50
Extra (High)	40-B	30
	80-B	50

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm.

a. For requirements on water-soluble flammable liquids and alternative sizing criteria, see NFPA 10.

906.4 Cooking grease fires. Portable fire extinguishers provided for the protection of cooking grease fires shall be of an approved type compatible with the fire extinguishing system agent and in accordance with FC 609.9.

906.5 Conspicuous location. Portable fire extinguishers shall be located in conspicuous locations where they will be readily accessible and immediately available for use. These locations shall be along normal paths of travel, unless the commissioner determines that the hazard posed indicates the need for placement away from normal paths of travel.

Exceptions:

1. Portable fire extinguishers subject to theft, malicious use or damage may be located in locations approved by the commissioner.
2. In rooming houses and single room occupancies, as defined in the New York State Multiple Dwelling Law, with over 15 sleeping rooms, a 2-A rated portable fire extinguisher may be kept in the apartment of the manager or the building superintendent.

906.6 Unobstructed and unobscured. Portable fire extinguishers shall not be obstructed or obscured from view. In rooms or areas in which visual obstruction cannot be completely avoided, signs or other markings shall be provided to indicate the locations of portable fire extinguishers.

906.7 Hangers and brackets. Hand-held portable fire extinguishers, not housed in cabinets, shall be installed on the hangers or brackets supplied. Hangers or brackets shall be securely anchored to the mounting surface in accordance with the manufacturer's installation instructions.

906.8 Cabinets. Cabinets used to house portable fire extinguishers shall be readily identifiable and shall not be locked.

Exceptions:

1. Portable fire extinguishers subject to theft, malicious use or damage, if provided with an approved means of ready access.
2. Portable fire extinguishers in Group I-3 occupancies and in mental health areas in Group I-2 occupancies may be locked or located in staff locations, provided the staff of the institution has ready access to the cabinet or other storage location.

906.9 Extinguisher installation. The installation of portable fire extinguishers shall be in accordance with FC 906.9.1 through 906.9.3.

906.9.1 Extinguishers weighing 40 pounds or less. Portable fire extinguishers having a gross weight not exceeding 40 pounds (18 kg) shall be installed so that the top of the extinguisher is not more than 5 feet (1524 mm) above the floor.

906.9.2 Extinguishers weighing more than 40 pounds. Hand-held portable fire extinguishers having a gross weight exceeding 40 pounds (18 kg) shall be installed so that the top of the extinguisher is not more than 3.5 feet (1067 mm) above the floor.

906.9.3 Floor clearance. The clearance between the floor and the bottom of installed hand-held portable fire extinguishers shall not be less than 4 inches (102 mm).

906.10 Wheeled units. Wheeled portable fire extinguishers shall be kept in a designated location that is readily accessible.

SECTION FC 907 FIRE ALARM AND DETECTION SYSTEMS

907.1 General. This section governs the design, installation, operation and maintenance of fire alarm systems and their components.

907.2 Where required. An approved manual, automatic, or manual and automatic fire alarm system shall be provided where required by the construction codes, including the Building Code or this code.

907.3 Design and installation. An approved manual, automatic, or manual and automatic fire alarm system shall be installed in accordance with the construction codes, including the Building Code, the Electrical Code and NFPA 72, as modified by FC Appendix B.

907.3.1 Design and installation documents. Design and installation documents for fire alarm systems shall be submitted to the department for review and approval prior to system installation. Design and installation documents shall include such design and installation details as may be required by the construction codes, including the Building Code, and this code.

907.3.2 Fire alarm system control panel. Fire alarm system control panels shall be of a type for which a certificate of approval has been issued in accordance with FC 112 and the rules. Fire alarm control panels shall be installed at an approved location and, when applicable, in accordance with FC 904.3.6. Fire alarm system control panel design and operation for mass notification purposes shall require department approval.

907.3.3 Fire extinguishing systems. Fire extinguishing systems shall be connected to the building fire alarm system whenever a fire alarm system is required or is otherwise installed.

907.3.4 Manual fire alarm box protective covers. The department may require the installation of manual fire alarm box protective covers to prevent malicious false alarms or provide the manual fire alarm box with protection from physical damage.

907.4 Fire command center. Where required by this code or the construction codes, including the Building Code, a fire command center shall be provided for a building, structure or premises.

907.4.1 Location. A plan identifying the proposed location and layout of the fire command center, including the location of the fire alarm system control panel, shall be submitted to the department for approval prior to installation. The location and layout of the fire command center shall be approved by the department in accordance with the following requirements and such other design, installation, operational and maintenance requirements as it may prescribe:

1. The primary fire command center, as required by Sections 403 and 911 of the Building Code, shall be installed in the building lobby at the main front entrance, mounted in the front desk, on the wall behind the front desk, on a wall in the lobby that provides a clear view of the elevators and lobby, or other approved location.
2. The secondary fire command center, when required by Appendix G to the Building Code or voluntarily installed, shall be installed at a location above the flood elevation in close proximity to the building lobby at the main front entrance, on the second floor near the elevators and/or stairwells, or other approved location.
3. The fire command center shall not be installed in a room.
4. The fire command center fire alarm control unit display shall not be mounted more than 6 feet (1829 mm) above the finish floor.
5. A durable sign reading "Fire Command Center" in 2-inch red letters on a white background shall be conspicuously posted at the fire command center.

907.4.2 Fire command center printer. Buildings with a fire command center shall be equipped with a printer or other approved device connected to the fire alarm system control panel to facilitate review by firefighting personnel of the incident history associated with an alarm activation.

907.4.3 Required documentation and other items for firefighting operations. Access keys for building rooms and areas and any other items that will assist firefighting or other emergency response operations shall be kept at the fire command center, together with the following documentation when required by the code or the rules:

1. Building information card.
2. Emergency preparedness plan.
3. Floor plans.
4. Non-sequential floor numbering chart.
5. Safety data sheets.
6. Standpipe elevation chart.

907.5 through and including 907.7 Reserved.

907.8 Presignal system. Where a presignal system is installed, personal supervision shall be provided at an approved location, in order that the alarm signal can be activated in the event of fire or other emergency.

907.9 through and including 907.12 Reserved.

907.13 Access. Access shall be provided to each detector for periodic inspection, testing and other maintenance.

907.14 Reserved.

907.15 Monitoring. Where required by this code, the rules or by the construction codes, including the Building Code, such monitoring by a central station shall be performed in compliance with the requirements of the rules.

Exception: Central station monitoring is not required for:

1. Single- and multiple-station smoke alarms required by Section 907.2.10 of the Building Code.
2. Smoke detectors in Group I-3 occupancies.
3. Sprinkler systems in Group R-3 occupancies.

907.15.1 Discontinuance or other change of service. Notification shall be made to the department in accordance with the rules upon discontinuance, change of service provider or other change in service of central station monitoring.

907.16 Automatic telephone-dialing devices. Automatic telephone-dialing devices used to transmit an emergency alarm shall not be connected to any department telephone number unless approved by the commissioner.

907.17 Acceptance testing. Upon completion of the installation of a fire alarm system, including alarm notification appliances and circuits, alarm-initiating devices and circuits, supervisory-signal initiating devices and circuits, signaling line circuits, and primary and secondary power supplies, such system shall be tested in accordance with FC 901.5.

907.18 Record of completion. A record of completion in accordance with NFPA 72, as modified by FC Appendix B, this code and the rules, verifying that the system has been installed in accordance with the approved design and installation documents and specifications shall be provided by the installing contractor.

907.19 Instructions. Inspection, testing, operation and maintenance instructions, as built design and installation documents and equipment specifications shall be provided on site at an approved location.

907.20 Inspection, testing and other maintenance. Fire alarm and fire alarm detection systems shall be operated and maintained in accordance with this code, FC 901, the rules and NFPA 72, as modified by FC Appendix B.

907.20.1 Reserved.

907.20.2 Testing. Testing shall be performed in accordance with the schedules in NFPA 72, as modified by FC Appendix B, or more frequently where required by the commissioner.

Exception: Devices or equipment that are inaccessible for safety considerations shall be tested during scheduled shutdowns where approved by the commissioner, but not less than every 18 months.

907.20.3 Detector sensitivity. Detector sensitivity shall be checked in compliance with the manufacturer's instructions and NFPA 72, as modified by FC Appendix B, and the rules. Detectors which are connected to a fire alarm system that automatically transmit signals to the department or to a central station shall, as applicable, also be checked in compliance with the rules.

907.20.4 Method. To verify that each smoke detector is within its listed and marked sensitivity range, it shall be tested using one of the following methods or types of equipment, and detectors found to have a sensitivity outside the listed and marked sensitivity range shall be cleaned and recalibrated or replaced:

1. A calibrated test method;
2. The manufacturer's calibrated sensitivity test instrument;
3. Listed control equipment arranged for the purpose;
4. A smoke detector/control unit arrangement whereby the detector causes a signal at the control unit where its sensitivity is outside its acceptable sensitivity range; or
5. Another calibrated sensitivity test method acceptable to the commissioner.

Exceptions:

1. Detectors listed as field adjustable shall be allowed to be either adjusted within the listed and marked sensitivity range and cleaned and recalibrated or they shall be replaced.
2. This requirement shall not apply to single-station smoke alarms.

907.20.4.1 Testing device. Smoke detector sensitivity shall not be tested or measured using a device that administers an unmeasured concentration of smoke or other aerosol into the detector.

907.20.5 Maintenance. The owner shall maintain all types of fire alarm and detection systems in good working order at all times. Service personnel shall possess the qualifications set forth in NFPA 72, as modified by FC Appendix B, and the rules, for inspecting, testing, servicing and otherwise maintaining such systems. When required by the rules, a smoke detector maintenance log book and an alarm log book shall be maintained.

907.20.5.1 Five-year retest. All fire alarm and other detection systems shall be retested once every five years from the date of acceptance of the system. The first retest of fire alarm and other detection systems lawfully existing on the effective date of this provision shall be conducted on or before the fifth anniversary of the date of acceptance after such effective date. Such test shall be conducted, and reported to the department, in the manner prescribed by rule, by a person holding a certificate of fitness for professional certification of fire alarm and emergency alarm installations and testing, as set forth in FC 104.2.1(1) and the rules, or a fire alarm system installer with NICET-Level II certification licensed by or registered with the State of New York and holding a certificate of fitness in accordance with the rules.

907.20.6 Smoke detector maintenance. The owner of any premises, or part thereof, monitored by a fire alarm system or sub-system thereof, whether required or not required by this code, which automatically transmits signals to the department or to a central station, shall be responsible for preventing unnecessary and unwarranted alarms as set forth in rules. Cleaning and testing of smoke detectors shall be performed as set forth in the rules.

907.20.7 Hold-open devices. The fire alarm system connections for hold-open devices installed on fire doors pursuant to the Building Code, including hold-open devices provided for vertical exit enclosure doors pursuant to the exception to Section BC 713.7 of the Building Code, shall be inspected, tested and otherwise maintained in accordance with FC 703.2 and 907.20 and NFPA 72. Hold-open devices and automatic door closers provided for such vertical exit enclosure doors shall be inspected and tested annually to ensure the proper functioning of:

1. the manual control on the fire alarm system control panel, or the fire command center where a fire command center is required, that transmits a signal to release the hold-open devices;
2. the fire alarm system output programming, which automatically transmits a signal to release the hold-open devices upon activation of an automatic alarm initiating device or manual elevator recall;
3. the circuitry for each hold-open device, which upon receipt of a manual or automatic signal, releases the door; and
4. each automatic door closer, which, upon release of the door by the hold-open device, mechanically moves the door to its fully closed position.

SECTION FC 908 EMERGENCY ALARM SYSTEMS

908.1 General. Emergency alarm systems required by the construction codes, this code or the rules for the detection and notification of a release of a hazardous material or other hazardous materials incident, or other physical or health hazard, including systems designed to detect flammable, toxic, asphyxiant and other gases, shall be designed, installed, operated and maintained in compliance with the construction codes, the Electrical Code, the code requirements referenced in FC Table 908.1, this section and the manufacturer's instructions.

**FC TABLE 908.1
REQUIRED EMERGENCY ALARMS**

HAZARD	OCCUPANCY/USE ^a	SECTION
Carbon dioxide	Occupancies with a carbon dioxide beverage dispensing system	5307
Carbon monoxide	Residential occupancies; other occupancies with carbon monoxide-producing equipment	Building Code BC915
Flammable alcohol vapors	Distilleries	4003
Gaseous hydrogen	Hydrogen fuel gas rooms	5808
Hazardous materials	High-hazard occupancies (Group H)	5004 and 5005
Hazardous production materials	Semiconductor production facilities (Group H-5)	2703
Lighter-than-air motor fuels	Motor fuel-dispensing facilities; repair garages for vehicles fueled by lighter-than-air motor fuels	2308, 2309 and 2311
Medical gases	Hospitals, nursing homes and hyperbaric facilities with a medical gas system	5306
Natural gas and other flammable gases (except lighter-than-air motor fuels)	Mechanical rooms, microturbine rooms and power plants with flammable gas distribution piping operating above 15 psig; residential occupancies	5810; Building Code BC908
Ozone gas	Ozone gas-generator rooms	6005
Refrigerants	Mechanical rooms with a refrigerating system	606
Toxic/highly toxic materials	Group H-3 occupancies	6004

a. Typical occupancy/use. Other occupancies/uses as approved.

908.2 Plan approval. Design and installation documents for emergency alarm systems shall be submitted for department review and approval when required by FC 105.4 and the rules.

908.3 Signage. Signs shall be posted in a conspicuous location near the emergency alarm system control panel and each alarm notification device to inform building occupants in the affected area of the meaning of the alarm activation and the appropriate response.

908.4 Central station monitoring. Emergency alarm systems required to transmit an alarm signal to a central station shall transmit such signal through the central station-monitored fire alarm system for the building or occupancy, or through an approved central station-monitored control panel. Such central station connections shall be maintained in compliance with the requirements of NFPA 72, as modified by FC Appendix B, and the rules.

908.5 Periodic inspection and testing. Sensors and other mechanical and electrical components of emergency alarm systems shall be tested by a trained and knowledgeable person on not less than an annual basis to ensure that they are in good working order, and a record kept of such testing.

908.5.1 Five-year retest. All emergency alarm systems and other detection systems shall be retested once every five years from the date of acceptance of the system. The first retest of emergency alarm systems lawfully existing on the effective date of this provision shall be

conducted on or before the fifth anniversary of the date of acceptance after such effective date. Such test shall be conducted, and reported to the department, in the manner prescribed by rule, by a person holding a certificate of fitness for professional certification of fire alarm and emergency alarm installations and testing, as set forth in FC 104.2.1(1) and the rules, or a fire alarm system installer with NICET-Level II certification licensed by or registered with the State of New York and holding a certificate of fitness in accordance with the rules.

SECTION FC 909 SMOKE CONTROL SYSTEMS

909.1 Smoke control systems. Smoke control systems, including stairwell pressurization, shall be provided as required by the construction codes, including the Building Code, and shall be designed, installed and tested as required by such codes.

909.1.1 Smoke control system maintenance. Smoke control systems shall be maintained in good working order. Periodic testing, inspection and other maintenance shall be performed in accordance with the manufacturer's instructions and FC 909.1.1.1 through 909.1.1.3.

909.1.1.1 Schedule. A written maintenance program, including periodic inspection and testing, shall be established and implemented immediately upon installation of the smoke control system.

909.1.1.2 Recordkeeping. A logbook or other approved form of recordkeeping documenting each inspection and test shall include the date of the maintenance, identification of servicing personnel, description of any operating defects or deficiencies, notifications made, corrective action taken, including parts replaced, and/or other information prescribed by the department by rule.

909.1.1.3 Testing. Operational testing of the smoke control system shall include all components of the system, including initiating devices, fans, dampers, controls, doors and windows. Dedicated smoke control systems shall be tested semiannually. Nondedicated smoke control systems shall be tested annually. All systems shall be tested under both normal power and emergency power.

909.2 Post-fire smoke purge systems. Post-fire smoke purge systems shall be provided as required by the construction codes, including the Building Code, and shall be designed, installed and tested as required by such codes.

909.2.1 Post-fire smoke purge system maintenance. Post-fire smoke purge systems shall be maintained in good working order. A record of inspections and tests shall be maintained in accordance with FC 107.7.

SECTION FC 910 SMOKE AND HEAT VENTS

910.1 General. Smoke and heat vents or, where approved by the Commissioner of Buildings, mechanical smoke exhaust systems, and draft curtains shall be installed when required by the

construction codes, including the Building Code, this code or the rules, and shall be designed and installed in accordance with the construction codes, including the Building Code.

910.2 Maintenance. Automatically and manually operated heat vents and engineered mechanical smoke exhaust systems shall be inspected periodically and an operational test of each shall be conducted at least once every 12 months. A record of each inspection and test shall be maintained as required by FC 107.7 and 901.6.2.

Exception: Gravity operated drop out vents need only be inspected.

SECTION FC 911 EXPLOSION CONTROL

911.1 General. Explosion control shall be provided in the following locations:

1. Where a structure, room or space is occupied for purposes involving explosion hazards as set forth in FC Table 911.1.
2. Where quantities of hazardous materials specified in FC Table 911.1 exceed the maximum allowable quantities set forth in FC Table 5003.1.1(1).

Such areas shall be provided with explosion (deflagration) venting, explosion (deflagration) prevention systems, or barricades in accordance with this section and NFPA 69 or NFPA 495, as applicable. Deflagration venting shall not be utilized as a means to protect buildings from detonation hazards.

**FC TABLE 911.1
EXPLOSION CONTROL REQUIREMENTS**

MATERIAL	CLASS	EXPLOSION CONTROL METHODS	
		Barricade Construction	Explosion (deflagration) venting or explosion (deflagration) prevention systems
Hazard Category			
Combustible dusts ^a	—	Not required	Required
Cryogenic fluids	Flammable	Not required	Required
Explosives	Division 1.1	Required	Not required
	Division 1.2	Required	Not required
	Division 1.3	Not required	Required
	Division 1.4	Not required	Required
	Division 1.5	Required	Not required
	Division 1.6	Required	Not required
Flammable gas	Gaseous	Not required	Required
	Liquefied	Not required	Required
Flammable liquids	IA ^b	Not required	Required
	IB ^c	Not required	Required
Organic peroxides ^e	Unclassified Detonable	Required	Not permitted
	I	Required	Not permitted
Oxidizer liquids and solids	4	Required	Not permitted
Pyrophoric material ^e	Detonable	Required	Not permitted
Pyrophoric gases ^e	Nondetonable	Not required	Required
Unstable (reactive) ^e	4	Required	Not permitted
	3 detonable	Required	Not permitted
	3 nondetonable	Not required	Required

Water-reactive liquids and solids ^e	3 detonable 3 nondetonable 2 detonable 2 nondetonable	Required Not required Required Not required	Not permitted Required Not permitted Required
Special Uses			
Energy storage system	—	Required	Required
Grain processing	—	Not required	Required
Where explosion hazards exist ^d	Detonation Deflagration	Required Not required	Not permitted Required

a. Combustible dusts that are generated during manufacturing or processing. See definition of Combustible Dust in FC Chapter 2.

b. Storage or use.

c. In open use or dispensing.

d. Rooms containing dispensing and use of hazardous materials when an explosive environment can occur because of the characteristics or nature of the hazardous materials or as a result of the dispensing or use process.

e. Unclassified detonable organic peroxides (see FC Chapter 62), detonable pyrophoric materials (see FC Chapter 64), detonable unstable (reactive) materials (see FC Chapter 66) and detonable water-reactive materials (see FC Chapter 67) are considered as explosives for purposes of storage.

911.2 Required deflagration venting. Areas that are required to be provided with deflagration venting shall comply with the following requirements:

1. Walls, ceilings and roofs exposing surrounding areas shall be designed to resist a minimum internal pressure of 100 pounds per square foot (psf) (4788 Pa). The minimum internal design pressure shall not be less than five times the maximum internal relief pressure specified in FC 911.2(5).
2. Deflagration venting shall be provided only in exterior walls and roofs.

Exception: Where sufficient exterior wall and roof venting cannot be provided because of inadequate exterior wall or roof area, deflagration venting shall be allowed by specially designed shafts vented to the exterior of the building.

3. Deflagration venting shall be designed to prevent unacceptable structural damage. Where relieving a deflagration, vent closures shall not produce projectiles of sufficient velocity and mass to cause life threatening injuries to the occupants or other persons on the property or adjacent public streets.
4. The aggregate clear area of vents and venting devices shall be governed by the pressure resistance of the construction assemblies specified in FC 911.2(1) and the maximum internal pressure allowed by FC 911.2(5).
5. Vents shall be designed to withstand loads in accordance with the construction codes, including the Building Code. Vents shall consist of any one or any combination of the following to relieve at a maximum internal pressure of 20 pounds per square foot (958 Pa), but not less than the loads required by the construction codes, including the Building Code:
 - 5.1. Exterior walls designed to release outward.
 - 5.2. Hatch covers.
 - 5.3. Outward swinging doors.

5.4. Roofs designed to uplift.

5.5. Venting devices listed for the purpose.

6. Vents designed to release from the exterior walls or roofs of the building when venting a deflagration shall discharge directly outdoors where an unoccupied space not less than 50 feet (15 240 mm) in width is provided between the exterior walls of the building and the property line.

Exception: Vents complying with the requirements of FC 911.2(7).

7. Vents designed to remain attached to the building when venting a deflagration shall be so located that the discharge opening shall not be less than 10 feet (3048 mm) vertically from window openings and exits in the building and 20 feet (6096 mm) horizontally from exits in the building, from window openings and exits in adjacent buildings on the same property, and from the property line.

8. Vent lines shall discharge outdoors.

911.3 Explosion prevention systems. Explosion prevention systems shall be of an approved type and installed in accordance with this code and NFPA 69. Where the building or structure or part thereof is provided with a fire alarm system, explosion prevention system alarms shall be transmitted to the fire alarm system control panel and to an approved central station.

911.4 Barricades. Barricades shall be designed and installed in accordance with NFPA 495.

SECTION FC 912 FIRE DEPARTMENT CONNECTIONS

912.1 Installation. Fire department connections shall be installed in accordance with the construction codes, including the Building Code.

912.2 Location. The location of fire department connections shall be in accordance with the Building Code.

912.2.1 Visible location. Fire department connections shall be located on the street side of buildings, fully visible and recognizable from the street or nearest point of fire department apparatus access, or as otherwise approved by the commissioner.

912.2.2 Distance from hydrant. Fire department connections shall be located at a distance from the nearest fire hydrant as required by the Building Code.

912.3 Access. Immediate access to fire department connections shall be maintained at all times, without obstruction by fences, posts, bushes, trees, rubbish containers, vehicles, walls or other objects.

Exception: Access to fire department connections may be obstructed by a fence, provided that such fence has an approved access gate complying with the design, installation, operation and maintenance requirements of FC 912, including signage complying with FC 912.4, and a means of emergency operation.

912.3.1 Locking fire department connection caps. The commissioner may require locking caps on fire department connections for sprinkler and standpipe systems.

912.3.2 Clear space around connections. A working space of not less than 36 inches (914 mm) in width, 36 inches (914 mm) in depth and 78 inches (1981 mm) in height shall be provided and maintained in front of and around wall-mounted and free-standing fire department connections, except as otherwise required or approved.

912.3.3 Physical protection. Where fire department connections are subject to impact by a motor vehicle whose normal operation brings it into proximity with such connections, such as when fire department connections are located curbside or adjacent to loading or parking areas, vehicle impact protection shall be provided in accordance with FC 312.

912.4 Signs and markings. Fire department connections shall be marked in accordance with FC 912.4.1 and 912.4.2.

912.4.1 Identification of fire department connections. Fire department connections serving:

1. only a standpipe system shall be provided with caps painted red and identified by markings and signage that reads “STANDPIPE”;
2. only an automatic sprinkler system shall be provided with caps painted green and identified by markings or signage that reads “SPRINKLER,” provided, however, that if the automatic sprinkler system only serves a portion of the building, a sign shall additionally identify the portion of the building protected;
3. only a non-automatic (manually activated) sprinkler system shall be provided with caps painted silver and identified by markings or signage that reads “SPRINKLER”, provided, however, that if the non-automatic sprinkler system only serves a portion of the building, a sign shall additionally identify the portion of the building protected;
4. combination standpipe and sprinkler systems shall be provided with caps painted yellow and identified by markings or signage that reads “COMBINATION STANDPIPE AND SPRINKLER SYSTEMS”;
5. in addition to the foregoing, a standpipe, sprinkler or combination system in a building other than the building upon which the fire department connection is mounted shall be provided with a sign identifying the address of the other building served by the fire department connection; and
6. in addition to the foregoing, a standpipe, sprinkler or combination system serving more than one zone in a single building shall be provided with a sign identifying each zone

served by the fire department connection. Such sign shall specify the maximum height (in feet) above grade of each zone and any other necessary identifying information.

912.4.2 Design of signs and markings. Cap markings on fire department connections shall be deep cast in the body of the cap in letters 1 inch (25 mm) high and 1/8 inch (3.2 mm) deep. Alternatively, fire department connections may be identified by a durable non-ferrous metal plate secured to the connections or conspicuously mounted on the wall.

912.5 Reserved.

912.6 Maintenance. Sprinkler system and standpipe system fire department connections shall be periodically inspected, tested, serviced and otherwise maintained in accordance with FC 901.6 and NFPA 25. Upon order of the commissioner, but at least once every 5 years, such fire department connections shall be subjected to a hydrostatic pressure test to demonstrate their suitability for department use. The test shall be conducted in accordance with the rules and at the owner's risk, by his or her representative before a representative of the department.

SECTION FC 913 FIRE PUMPS

913.1 General. Where provided, fire pumps shall be installed in accordance with this section, the construction codes, including the Building Code, and NFPA 20.

913.2 Protection against interruption of service. The fire pump, driver, and controller shall be protected in accordance with NFPA 20 against possible interruption of service through damage caused by explosion, fire, flood, earthquake, rodents, insects, windstorm, freezing, vandalism and other adverse conditions.

913.3 Temperature of pump room. Suitable means shall be provided for maintaining the temperature of a pump room or pump house, where required, above 40°F (5°C).

913.3.1 Engine manufacturer's recommendation. Temperature of the pump room, pump house or area where engines are installed shall never be less than the minimum recommended by the engine manufacturer. The engine manufacturer's recommendations for oil heaters shall be followed.

913.4 Valve supervision. Where provided, the fire pump suction, discharge and bypass valves, and the isolation valves on the backflow prevention device or assembly shall be supervised open by a fire alarm system and monitored by an approved central station.

913.4.1 Test outlet valve supervision. Fire pump test outlet valves shall be supervised in the closed position.

913.5 Operation and maintenance. Fire pumps shall be operated and maintained in compliance with the requirements of this section, FC 901.6 and NFPA 25, including all required inspection, testing and servicing.

913.5.1 Acceptance test. Acceptance testing shall be done in accordance with FC 901.5 and NFPA 20. Acceptance tests shall be conducted at the owner's risk by his or her representative before a representative of the department.

913.5.2 Generator sets. Engine generator sets supplying emergency power to fire pump assemblies shall be periodically tested in accordance with FC 604 and the Electrical Code.

913.5.3 Transfer switches. Automatic transfer switches shall be periodically tested in accordance with FC 604 and the Electrical Code.

913.5.4 Pump room environmental conditions. Tests of pump room environmental conditions, including heating, ventilation and illumination shall be made to ensure proper manual or automatic operation of the associated equipment.

913.6 Fire pump supervision. The following fire pump operations shall be electrically supervised by the fire alarm system in accordance with the Electrical Code and NFPA 20; and monitored by a central station in accordance with this code and the rules:

1. Pump running.
2. Pump power failed.
3. Pump phase reversal.

SECTION FC 914 YARD HYDRANT SYSTEMS

914.1 General. Yard hydrant systems shall be installed where required by the construction codes, including the Building Code, this code, including FC 507.2.3, or the rules.

914.2 Operation and maintenance. Yard hydrant systems shall be operated and maintained in accordance with FC 901.6 and NFPA 25.

914.3 Supervision. At all times when the area served by the yard hydrant system is in use, the system shall be under the personal supervision of a certificate of fitness holder, who shall be available to assist the department in the operation of such system.