CHAPTER 33
FIRE SAFETY DURING CONSTRUCTION, ALTERATION AND DEMOLITION

SECTION FC 3301
GENERAL

3301.1 Scope. This chapter shall govern fire safety measures during the construction, alteration, or demolition of buildings, structures, premises and facilities.

3301.2 General. Buildings, structures, premises and facilities undergoing construction, alteration or demolition shall comply with the fire safety measures set forth in this chapter, and shall additionally comply with the requirements of NFPA 241 as to measures not specifically addressed herein.

3301.3 Permits. Permits shall be required as set forth in FC 105.6.

3301.4 Prohibitions. It shall be unlawful at a construction site to store, handle or use portable fueled space heating devices or equipment.

Exception: Portable space heating devices may be used for construction-related curing and drying in accordance with FC 3303.

SECTION FC 3302
DEFINITIONS

3302.1 Definitions. The following term shall, for the purposes of this chapter and as used elsewhere in this code, have the meaning set forth in FC 202.

CONSTRUCTION SITE.

SECTION FC 3303
PORTABLE FUELED SPACE HEATERS

3303.1 Design. Portable fueled space heaters shall be designed, listed and labeled in accordance with the construction codes, including the Mechanical Code and the Fuel Gas Code, this code, and standards promulgated by the commissioner by rule, as applicable. Portable fueled space heaters shall be installed, operated and maintained in accordance with this chapter, the terms of the listing, and manufacturer's specifications.

3303.2 Portable oil-fueled heaters. Portable oil-fueled space heaters may be stored, handled and used at construction sites for construction-related curing and drying purposes during the heating season beginning on October 15 and ending on May 30 of the following year, and at such other times of year as may be authorized by permit. Such heaters shall be stored, handled and used in accordance with this code and the rules.

3303.3 Portable gas-fueled heaters. Portable gas-fueled space heaters utilizing liquefied petroleum gas (LPG), compressed natural gas (CNG) and piped natural gas may be stored, handled

and used at construction sites for construction-related curing and drying purposes during the heating season beginning on October 15 and ending on May 30 of the following year, and at such other times of year as may be authorized by permit. Such heaters shall be stored, handled and used in accordance with this code and the rules.

3303.4 Refueling. Refueling operations shall be conducted in accordance with FC 5705. Portable fueled space heaters shall be shut down and cool to the touch before refueling.

3303.5 Installation. Clearance to combustibles from portable fueled space heaters shall be maintained in accordance with the manufacturer's specifications. When in operation, portable fueled space heaters shall be fixed in place and protected from overturning, movement or damage in accordance with the manufacturer's specifications.

3303.5.1 Protection of heating element. The heating element or combustion chamber shall have a permanent device to prevent accidental contact by persons or material.

3303.6 Supervision. The handling and use of portable fueled space heaters shall be under the personal supervision of a person holding a certificate of fitness. The storage of portable fueled space heaters, and the fuel therefore, shall be under the general supervision of a certificate of fitness holder.

SECTION FC 3304
PRECAUTIONS AGAINST FIRE

3304.1 Smoking prohibited. Smoking is prohibited at all construction sites.

3304.1.1 Areas affected. At construction sites required by the Building Code to be enclosed with a fence, including buildings under construction or demolition, smoking shall be prohibited within the area enclosed by such fence, including in construction trailers and other indoor or outdoor areas. At construction sites not required by the Building Code to be enclosed with a fence, including existing buildings undergoing interior alterations, smoking shall be prohibited in those areas of the building in which work is to be conducted under the work permit issued by the Department of Buildings.

3304.1.2 Signage. "No Smoking" signs complying with FC 310 shall be conspicuously posted at construction sites at the following locations:

1. at construction sites required by the Building Code to be enclosed with a fence, on all sliding and swinging gate openings, and any other openings allowing for access to the site by persons or vehicles;

2. at the entrances to any building or structure under construction or demolition;

3. on each floor at stairway, elevator and hoistway access points of any building undergoing alteration, construction or demolition;

4. at any indoor or outdoor areas on the construction site at which persons congregate; and

5. at such other locations as are necessary to provide notice to a person entering upon or working at the site of the prohibition against smoking.

3304.2 Waste disposal. Combustible waste, including rubbish and construction and demolition material, shall not be allowed to accumulate within buildings and shall be removed from a building at least once a day. Accumulations of combustible waste not stored in containers in accordance with FC 304.3 and in a manner that obstructs movement on the floor, or containing flammable or combustible liquid residues, shall be removed from a building at the end of each work shift. Combustible waste, including rubbish and construction and demolition material, shall be removed from the premises or stored in noncombustible containers.

3304.3 Open fires. It shall be unlawful to ignite or maintain an open fire at a construction site, except for the use of coke-fueled salamanders in accordance with FC 307.1 and 307.6, and the rules.

3304.4 Spontaneous ignition. Materials susceptible to spontaneous ignition, such as oily rags, shall be stored in a container listed for such use.

3304.5 Fire watch. The commissioner may require, at a demolition site, and at other construction sites that are unusually hazardous in nature, that a fire watch be maintained by fire guards. The fire guards conducting such fire watch shall have the duties and responsibilities set forth in FC 901.7.2.1.

3304.6 Cutting and welding. Operations involving the use of cutting and welding shall be performed in accordance with FC Chapter 35.

3304.7 Electrical. Temporary wiring for electrical power and lighting installations at construction sites shall comply with the requirements of the Electrical Code.

3304.8 Fire-resistance-rated construction. Fire walls, fire barriers, and spray-on fire protection of structural members required by the Building Code for the completed building, shall be given construction priority. Required fire doors, with automatic closing devices, shall be installed on openings as soon as practicable. Required fire walls, fire barriers and fire doors shall be left in place in buildings undergoing alteration or demolition until construction operations necessitate their removal.

SECTION FC 3305
FLAMMABLE AND COMBUSTIBLE LIQUIDS

3305.1 Storage, handling and use of flammable and combustible liquids. Storage, handling and use of flammable and combustible liquids shall be in accordance with FC 5706.2 and such other provisions of FC Chapter 57 as may be applicable to the specific construction site material or operation.

3305.2 Ventilation. Adequate ventilation shall be provided for operations involving the application of materials containing flammable solvents.

3305.3 Housekeeping. Flammable and combustible liquid storage areas shall be maintained clear of vegetation and combustible waste. Such storage areas shall not be used for the storage of combustible materials.

3305.4 Precautions against fire. Sources of ignition and smoking shall be prohibited in flammable and combustible liquid storage areas. "No Smoking" signs in compliance with the requirements of FC 310 shall be conspicuously posted.

3305.5 Handling at point of final use. Class I and II liquids shall be stored in approved safety containers.

3305.6 Leakage and spills. Leaking containers shall be immediately repaired or taken out of service. Spills shall be cleaned up immediately and all liquid and waste material disposed of lawfully.

SECTION FC 3306
FLAMMABLE GASES AND OXYGEN

3306.1 Flammable gases. The storage, handling and use of flammable gases shall comply with the requirements of FC Chapters 35, 58, and 61, as applicable.

3306.1.1 Cleaning and purging of flammable gas piping systems. The cleaning and purging of flammable gas piping systems, including the cleaning and purging of such systems prior to placing them in service or removing them from service, shall be conducted in accordance with NFPA 56.

Exceptions:

1. Compressed gas piping systems subject to the requirements of FC Chapter 53, other than fuel gas piping systems.
2. Piping systems regulated by the Fuel Gas Code.
3. LPG systems subject to the requirements of FC Chapter 61.

3306.1.1.1 Prohibition. It shall be unlawful to use a flammable gas to remove debris from or otherwise clean piping open to the atmosphere.

3306.2 Oxygen. The storage, handling and use of oxygen shall comply with the requirements of FC 3306.2.1 through 3306.2.3, and FC Chapters 35 and 53, as applicable.

3306.2.1 Portable liquid oxygen containers. The storage, handling and use of portable liquid oxygen containers shall be in accordance with FC 3306.2.1.1 through 3306.2.1.9.

3306.2.1.1 Design and installation documents. A sketch showing the following information shall be submitted to the department for approval in connection with an application for a permit for oxygen storage:

1. Number and size of containers.

2. Enclosure, manifold and service piping construction.

3. Location of risers and outlets.

4. Location of all equipment and devices including vaporizers, valves and safety relief devices.

3306.2.1.2 Indoor storage restrictions. Not more than one liquid oxygen container having a maximum water capacity of 6.2 cubic feet (0.176 m^3) may be stored indoors. Such container shall be connected for use with a flammable gas. Storage in excess of one liquid oxygen container shall be located outdoors.

3306.2.1.3 Ventilation. The room used for the storage, handling and use of a liquid oxygen container shall be equipped with ventilation direct to the outdoors, and shall not contain any combustible material or flammable gas.

3306.2.1.4 Manifolds and vaporizers. Manifolds and vaporizers shall be constructed of materials suitable for oxygen service at a pressure of 250 psig (1724 kPa). Such manifolds and vaporizers shall have a minimum bursting pressure of 1,000 psig (6895 kPa) and shall be protected with safety relief devices which will relieve at or below 500 psig (3448 kPa).

3306.2.1.4.1 Test. The assembled vaporizer and manifold shall be pressure tested at 500 psig (3448 kPa) with an oil-free and nonflammable material as the testing medium.

3306.2.1.5 Service piping from the oxygen manifold. Service piping from the oxygen manifold shall be copper tubing, stainless steel, wrought iron or steel, and shall run vertically outdoors to the floor or floors being serviced, where outlets may be provided for hose connections to approved torches. The service piping shall be properly secured, protected from damage from mechanical injury and properly labeled. Any connection between service piping and the manifold shall be made using not more than 5 feet (1524 mm) of hose capable of withstanding pressure up to at least 1,000 psig (6895 kPa).

3306.2.1.5.1 Service pressure. Service piping shall be suitable for 250 psig (1724 kPa) service unless an intervening pressure regulator is provided at the manifold, and shall withstand a test of two times the maximum operating pressure, using an oil-free and nonflammable material as the testing medium.

3306.2.1.6 Hose and connectors. Hose and connectors capable of withstanding pressure up to at least 1,000 psig (6895 kPa) and of a design suitable for oxygen service at a pressure of 250 psig (1724 kPa) shall be used to connect the outlets on the service piping to the blowpipes. Hose shall be rejected for use if it shows excessive wear, loose connections,

leaks or burns; hose subjected to a flash back in use shall be tested to twice the service pressure, but not less than 200 psig (1379 kPa), before being returned to service.

3306.2.1.7 Signs. Signs shall be posted in the vicinity of liquid oxygen container storage and use, reading: DANGER-LIQUID OXYGEN-NO SMOKING-NO OPEN FLAMES.

3306.2.1.8 Operating instructions. Legible operating instructions shall be posted near any liquid oxygen manifold.

3306.2.1.9 Affidavit. An affidavit shall be provided by the installer and/or contractor to certify that the vaporizer, valves, piping, hose and safety devices are of an approved type, that they meet the specifications for bursting test and design service pressure, and that they have been satisfactorily tested in accordance with this section.

3306.2.2 Oxygen trailers. The storage and use of oxygen trailers shall be in accordance with FC 3306.2.2.1 through 3306.2.2.5.

3306.2.2.1 Design, construction, testing and maintenance. Oxygen trailer containers shall be designed, constructed, tested and maintained in accordance with the United States Department of Transportation specifications and regulations.

3306.2.2.2 Instructions. Legible operating instructions shall be posted in the trailer and on or near any oxygen manifold used indoors.

3306.2.2.3 License plates. Oxygen trailers shall at all times have affixed to them a motor vehicle license plate as issued in accordance with New York State or other applicable motor vehicle license plate laws, rules or regulations.

3306.2.2.4 Notification. The owner or operator of an oxygen trailer shall notify the department, in writing, of the delivery of the trailer to a construction site, at least 48 hours in advance of such delivery. Such notification shall include:

1. Contractor's name, address and telephone number.

2. Location of the construction site.

3. Quantity and frequency of oxygen delivery to the construction site.

4. Expected duration of oxygen storage and use at the construction site.

3306.2.2.5 Oxygen trailers having a capacity exceeding 20,000 SCF (566 m^3). The distance between oxygen trailers having a total aggregate capacity exceeding 20,000 SCF (566 m^3) and exposures shall be in accordance with NFPA 55.

3306.2.3 Supervision. The handling and use of portable liquid oxygen containers and oxygen trailers shall be under the personal supervision of a certificate of fitness holder. The storage of

liquid oxygen containers and oxygen trailers shall be under the general supervision of a certificate of fitness holder.

3306.3 Discontinued torch operations. When hot work equipment is not in use, including when torch operations are discontinued for the workday, the oxygen and flammable gas containers shall be removed from the work area and moved to an approved storage area or removed from the premises.

Exception: Brief interruptions in work of not more than 2 hours, including lunch breaks and coffee breaks.

3306.3.1 Torch operation container floor storage. Oxygen and flammable gas containers used for torch operations may be stored on the floors on which the torch work is being conducted only in an unoccupied building and only in an approved storage area. Oxygen or flammable gas containers, other than those necessary for the day's torch operations, shall be considered as reserve storage, and shall not be stored on such floors.

3306.3.1.1 Storage location. Oxygen and flammable gas storage areas on the floors on which the torch work is being conducted shall comply with the distance to exposure requirements of FC 5804.1.3.

3306.3.1.2 Maximum storage quantities. The maximum quantity of acetylene containers stored on any floor shall not exceed 3,500 SCF (99.11 m^3).

3306.3.1.3 Storage cabinet. Oxygen and flammable gas containers shall be located within a compressed gas storage cabinet designed and secured to prevent unauthorized entry. The storage cabinet shall be conspicuously marked with a hazard identification sign as set forth in FC 5003.5.

3306.4 Reserve oxygen and flammable gas containers. The storage of reserve oxygen and flammable gas containers at a construction site shall comply with the requirements of FC 3306.4.1 through 3306.4.4, and FC 3306.5.

3306.4.1 Storage location. Oxygen and flammable gas container storage areas shall comply with the distance to exposure requirements of FC 5804.2.1.

3306.4.2 Storage cabinet. Oxygen and flammable gas containers shall be located within a compressed gas storage cabinet designed and secured to prevent unauthorized entry. The storage cabinet shall be conspicuously marked with a hazard identification sign as set forth in FC 5003.5.

3306.4.3 Indoor acetylene storage. Indoor reserve storage of acetylene containers shall be allowed only when outdoor storage is unavailable on the premises, the building is unoccupied, the containers are stored on the ground floor of the building, and the total quantities stored do not exceed 3,500 SCF (99.11 m^3).

3306.4.4 Outdoor acetylene storage. Outdoor reserve acetylene container storage areas shall not exceed 3,500 SCF (99.11 m^3). More than one outdoor storage area may be authorized on the premises provided the distance from each outdoor storage area to each exposure identified in FC Chapter 58 complies with the requirements of FC Chapter 58.

3306.5 Maximum aggregate indoor acetylene storage quantities. The aggregate of the indoor storage of acetylene authorized by FC 3306.3.1.2 and 3306.4.3 shall not exceed 15,000 SCF (424.8 m^3).

SECTION FC 3307
EXPLOSIVE MATERIALS

3307.1 Storage and handling. Explosive materials shall be stored, handled and used in accordance with FC 3318 and FC Chapter 56.

3307.2 Blasting operations. Blasting operations shall be conducted in accordance with FC Chapter 56.

3307.3 Demolition using explosives. Fire hoses and nozzles for use by demolition personnel, connected to an approved water supply under pressure, shall be provided and maintained at the demolition site whenever explosives are used for demolition. Such fire hoses, nozzles and water supply shall be available prior to explosives arriving at the site. Such fire hoses and nozzles shall be capable of a continuous flow of 180 gallons (681 L) per minute with a minimum reach of 35 feet (10 668 mm) from the nozzle and be capable of being brought to bear anywhere on the construction site. Hose shall be pressure tested to withstand at least 600 pounds per square inch gauge (psig) (2413 kPa).

SECTION FC 3308
CONSTRUCTION SITE FIRE SAFETY MANAGER

3308.1 Fire safety manager. Where a site safety manager or site safety coordinator is required by the Building Code, the owner shall designate a person to be the fire safety manager for the construction site. Such person shall hold a certificate of fitness as a construction site fire safety manager. The fire safety manager may be the site safety manager or site safety coordinator required by the Building Code, except that a separate fire safety manager shall be designated for a building under construction when such building reaches a height of twenty stories or more than 250 feet (76 200 mm), has a lot coverage of 200,000 square feet (1860 m^2) or greater, or as otherwise prescribed by rule. For purposes of this section, below grade stories shall be used to determine number of stories and building height.

Exception: Construction sites at which an existing building is undergoing alteration, the alteration work is limited to the façade, and no hot work is being performed.

3308.1.1 Fire safety manager duties. The fire safety manager shall be responsible for ensuring compliance with the requirements of this code, including this chapter, and the rules. The fire safety manager shall conduct an inspection of the construction site and all fire safety measures on at least a daily basis, and maintain a record of same in a bound log book or other

approved system of recordkeeping. Where fire watch service is provided, the fire safety manager shall be responsible for the general supervision of the fire guards.

3308.2 Pre-fire plans. The fire safety manager shall develop and maintain at the construction site an approved pre-fire plan, and make it available for examination by any representative of the department. The department shall be notified of any changes in site conditions materially affecting the procedures set forth in such plan.

3308.3 Training. The fire safety manager shall ensure that construction site personnel are acquainted with the operation of portable fire extinguishers and other fire protection equipment on the construction site.

3308.4 Fire protection devices. The fire safety manager shall ensure that all fire protection equipment and systems are readily available and periodically inspected and tested, and maintained in accordance with this code, the rules and the Building Code.

3308.5 Hot work operations. The fire safety manager shall be responsible for supervising the issuance of authorizations for hot work operations in accordance with FC Chapter 35.

3308.6 Impairment of fire protection systems. The fire safety manager or impairment coordinator shall comply with the requirements of FC 901 in the event of impairment of any fire protection system.

3308.7 Temporary covering of fire protection devices. Coverings placed on or over fire protection devices to protect them from damage during construction processes shall comply with the requirements of FC Chapter 9 and shall be immediately removed upon the completion of the construction processes in the room or area in which the devices are installed.

SECTION FC 3309
FIRE ALARM REPORTING

3309.1 Emergency telephone. A telephone not requiring a coin to operate, or another approved, clearly identified means to notify the department, shall be provided on site in an approved location. The street address of the construction site and the emergency telephone number of the fire department shall be posted adjacent to the telephone or other approved device.

SECTION FC 3310
ACCESS FOR FIREFIGHTING

3310.1 Required access. Approved vehicle access for fire apparatus shall be provided to all construction sites. Vehicle access shall be provided to within 100 feet (30 480 mm) of temporary or permanent fire department connections. Vehicle access shall be provided by either temporary or permanent roads, capable of supporting vehicle loading under all weather conditions. Vehicle access shall be maintained until permanent fire apparatus access roads are available.

3310.2 Key boxes. Key boxes shall be provided as required by FC Chapter 5 and the Building Code.

SECTION FC 3311
MEANS OF EGRESS AND ELEVATORS

3311.1 Stairways. Stairways at construction sites shall be provided, maintained, and made available for department use in accordance with the construction codes, including the Building Code. Stairways providing egress from the building or structure under construction or alteration, and other components of the means of egress, shall be given construction priority.

3311.2 Maintenance. Required means of egress shall be maintained during construction, alteration and demolition in accordance with this code and the Building Code.

3311.3 Elevators. Elevators at construction sites shall be provided, maintained, and made available for department use in accordance with the construction codes, including the Building Code.

SECTION FC 3312
WATER SUPPLY FOR FIRE PROTECTION

3312.1 Water supply. An approved water supply for fire protection, either temporary or permanent, shall be made available prior to hazardous materials or combustible material arriving at the site. Any water source intended for firefighting operations, including standpipe outlets, street hydrants and yard hydrants, shall not be used for construction, alteration or demolition purposes, unless approved.

SECTION FC 3313
STANDPIPES

3313.1 Standpipe systems. Standpipe systems for use at construction sites shall be provided, maintained, and made available for department use in accordance with this code, and the construction codes, including the Building Code.

3313.2 Demolition operations. Where a building or structure with an existing standpipe system is being demolished, such system shall be maintained for the use of the department in accordance with the construction codes, including the Building Code.

SECTION FC 3314
SPRINKLER SYSTEM

3314.1 Sprinkler systems. Sprinkler systems for use at construction sites shall be provided, maintained, and made available for department use, in accordance with this code, and the construction codes, including the Building Code.

3314.2 Completion before occupancy. In buildings or structures where a sprinkler system is required by this code or the construction codes, including the Building Code, it shall be unlawful to occupy any portion of a building or structure until the sprinkler system installation has been tested and approved.

3314.3 Operation of valves. Sprinkler control valves shall be operated only by authorized personnel. Such operation shall be under the general supervision of the fire safety manager where one is required pursuant to FC 3308. When the sprinkler system valves are being regularly closed and opened to facilitate connection of newly completed or disconnected segments, the sprinkler control valves shall be inspected at the end of each work day to ascertain that the system is in good working order.

SECTION FC 3315
PORTABLE FIRE EXTINGUISHERS

3315.1 Where required. Buildings or structures under construction, alteration or demolition shall be provided with not less than one approved portable fire extinguisher in accordance with FC 906 and sized for not less than ordinary hazard as follows:

1. At each stairway on all floor levels where combustible materials are being stored or combustible waste is being generated.

2. At the entrance of each storage and construction shed.

3. Additional portable fire extinguishers shall be provided where flammable and combustible liquids are stored, handled and used.

4. Cranes fueled by liquid motor fuel or flammable gas shall be provided with a portable fire extinguisher with a minimum 10-B:C rating located either in the crane's cab or in its immediate vicinity.

SECTION FC 3316
INTERNAL-COMBUSTION-POWERED EQUIPMENT

3316.1 Conditions of use. Internal-combustion-powered construction equipment shall be used in accordance with the following requirements:

1. Equipment shall be located so that exhausts do not discharge against combustible material.

2. Exhausts shall be piped to the outdoors.

3. Equipment shall not be refueled while in operation.

4. Fuel for equipment shall be stored in an approved area.

5. Fuel for equipment shall be handled and used in approved containers with a capacity not greater than 5 gallons (19 L).

SECTION FC 3317
SAFEGUARDING ROOFING OPERATIONS

3317.1 General. Roofing operations utilizing heat-producing systems or other ignition sources shall be performed by a competent person. Roofing operations involving hot work shall comply with the requirements of FC Chapters 35, 58, and 61, as applicable.

3317.2 Tar kettles. Tar kettles shall be handled and used in accordance with FC 303.

3317.3 Portable fire extinguishers for roofing operations. Portable fire extinguishers shall be provided in accordance with FC 906. There shall be not less than one multi-purpose portable fire extinguisher with a minimum 3-A 40-B:C rating on the roof being covered or repaired.

3317.4 Prohibited operations. It shall be unlawful to install any roofing material using a torch on a roof of combustible construction, or otherwise engage in roofing operations on roofs of combustible construction using hot work equipment.

SECTION FC 3318
POWDER-ACTUATED TOOL LOADS

3318.1 Storage, handling and use. Small arms ammunition shall be stored, handled and used for powder-actuated tool loads at a construction site in accordance with FC 5606.8.

3318.1.1 Supervision. Powder-actuated tools shall be used only by a certificate of fitness holder. Powder-actuated tools shall be handled only by a certificate of fitness holder. Storage of powder-actual tools shall be under the general supervision of a certificate of fitness holder.

SECTION FC 3319
FIRST RESPONDER BOX

3319.1 First responder box. An approved lock box shall be provided for first responder use. 5601.5.1.1

Such box shall contain all keys required to obtain access to the construction site and operate the hoist; the pre-fire plan; permits; logbooks; and such other documents required by this code or the rules to be maintained on the premises. Such box shall be in an approved location and shall be openable by use of a citywide standard key.