

## CHAPTER 3

# GENERAL PRECAUTIONS AGAINST FIRE

### SECTION FC 301 GENERAL

**301.1 Scope.** This chapter shall govern the operation and maintenance of buildings, structures and premises with respect to precautions to prevent fire and the spread of fire. This chapter shall additionally govern the design, installation, operation and maintenance of the operations, facilities and premises set forth herein.

**301.2 Permits.** Permits shall be required as set forth in FC 105.6.

### SECTION FC 302 DEFINITIONS

**302.1 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.

**ASPHALT MELTER.**

**AUTOMOTIVE SALVAGE AND WRECKING FACILITY.**

**COKE.**

**COKE-FUELED SALAMANDER.**

**COMPUTATIONAL FLUID DYNAMICS ANALYSIS.**

**ELECTRIC BARBECUE.**

**HI-BOY.**

**HIGH-VOLTAGE TRANSMISSION LINE.**

**OPEN FIRES.**

**OPEN FLAME.**

**OPEN-FLAME DEVICE.**

**PORTABLE FUELED EQUIPMENT.**

**PORTABLE SPACE HEATER.**

**POWERED INDUSTRIAL EQUIPMENT.**

**POWERED INDUSTRIAL TRUCK.**

**POWERED MOBILITY DEVICES.**

**PRODUCTION LOCATION.**

**RESIDENTIAL FIRE PIT.**

**TAR KETTLE.**

### SECTION FC 303 TAR KETTLES AND ASPHALT MELTERS

**303.1 Transporting.** Tar kettles and asphalt melters shall not be transported or otherwise moved when the heat source for the kettle or melter is operating.

**Exception:** Tar kettles and asphalt melters in the process of patching road surfaces.

**303.2 Location.** Tar kettles and asphalt melters shall not be located within 20 feet (6096 mm) of any combustible material, combustible building surface or any building opening and within a controlled area identified by the use of traffic cones, barriers or other approved means. Tar kettles, asphalt melters and pots shall not be utilized indoors or on the roof of a building or structure, except that LPG-fueled asphalt melters may be utilized on the roof of a building or structure in accordance with the rules. Roofing kettles, and operating tar kettles and asphalt melters shall not block means of egress, gates, roadways or entrances.

**303.3 Location of fuel containers.** Fuel containers shall be located at least 10 feet (3048 mm) from the burner.

**Exception:** Containers properly insulated from heat or flame are allowed to be within 2 feet (610 mm) of the burner.

**303.4 Supervision.** An operating tar kettle or asphalt melter requiring a permit shall be under the personal supervision of a person holding a certificate of fitness. The certificate of fitness holder shall be within 100 feet (30 480 mm) of the kettle or melter, have the kettle or melter within sight and have unobstructed access to the kettle or melter. Ladders and other obstacles shall not form a part of the route between the certificate of fitness holder and the kettle or melter. The certificate of fitness holder shall not have to climb or descend a ladder or circumvent any obstacle to gain access to the kettle or melter.

**303.5 Portable fire extinguishers.** There shall be at least one portable fire extinguisher complying with the requirements of FC 906 and with a minimum 3-A:40-B:C rating within 25 feet (7620 mm) of each tar kettle and asphalt melter during the period such kettle or melter is being utilized, and one additional portable fire extinguisher with a minimum 3-A:40-B:C rating on the roof being covered.

**303.6 Lids.** Tar kettles and asphalt melters shall be equipped with tight-fitting lids.

**303.7 Hi-boys.** Hi-boys shall be constructed of noncombustible materials. Hi-boys shall be limited to a capacity of 55 gallons (208 L). Fuel sources or heating elements shall not be allowed as part of a hi-boy.

**303.8 Kettle and asphalt melter construction.** Any kettle used as a tar kettle and any melter used as an asphalt melter shall be constructed of noncombustible materials.

**303.9 Fuel containers under air pressure.** It shall be unlawful to store, handle or use fuel containers that operate under air pressure.

**303.10 Flammable liquid fuel.** It shall be unlawful to store, handle or use tar kettles or asphalt melters that utilize flammable liquid as a fuel.

## GENERAL PRECAUTIONS AGAINST FIRE

**303.11 Roofing operations.** Roofing operations, including repairs, using open-flame devices shall comply with the requirements of FC 3317 and FC Chapters 35 and 58.

### SECTION FC 304 STORAGE AND ACCUMULATION OF RUBBISH AND OTHER COMBUSTIBLE WASTE

**304.1 Accumulation of combustible waste.** It shall be unlawful to cause or allow rubbish and other combustible waste to accumulate in a building or structure or upon a premises.

**304.1.1 Maintenance.** Roofs, courts, yards, vacant lots, alleys, parking lots, open spaces, and the space beneath a grandstand, bleacher, pier, wharf, or other similar structure, shall be regularly cleaned so as to prevent the accumulation of any rubbish, vegetation or other combustible waste.

**304.1.2 Vegetation.** Weeds, grass, vines, brush or other vegetation that is capable of being ignited shall be regularly pruned, or cleared and removed for a distance of 10 feet (3048 mm) from any building or structure.

**304.2 Unsafe storage of combustible waste prohibited.** It shall be unlawful to store rubbish or other combustible waste in a manner that creates a fire hazard or public nuisance.

**304.3 Containers.** Rubbish and other combustible waste stored pending removal in a building or structure or upon a premises shall be stored in accordance with this section, and any other applicable law, rule or regulation.

**304.3.1 Spontaneous ignition.** Rubbish and other combustible waste susceptible to spontaneous ignition, such as oily rags, shall be stored in a listed disposal container. Contents of such containers shall be removed and disposed of daily.

**304.3.2 Capacity exceeding 40 gallons.** Dumpsters and other containers with a capacity exceeding 40 gallons (0.15 m<sup>3</sup>) shall be provided with lids. Such containers and their lids shall be constructed of noncombustible materials or of materials having a peak rate of heat release not exceeding 300 kW/m<sup>2</sup> when tested in accordance with ASTM E 1354 at an incident heat flux of 50 kW/m<sup>2</sup> in the horizontal orientation, and listed and labeled as such.

**304.3.3 Capacity exceeding 200 gallons.** Dumpsters and other containers with an individual capacity exceeding 200 gallons (0.76 m<sup>3</sup>) shall not be stored indoors, and shall not be stored outdoors within 5 feet (1524 mm) of combustible walls, openings or combustible roof eave lines.

#### Exceptions:

1. Dumpsters or containers in areas protected throughout by a sprinkler system.
2. Storage in a building or structure of Type I or Type IIA construction or other construction with an equivalent fire rating, where such building or structure is located not less than 10 feet (3048 mm) from other buildings or structures and

used exclusively for container or dumpster storage.

**304.3.4 Wastebaskets in Group I-2 and I-3 occupancies.** Wastebaskets and other waste containers, including their lids, used in Group I-2 and I-3 occupancies shall be constructed of noncombustible materials or of materials having a peak rate of heat release not exceeding 300 kW/m<sup>2</sup> when tested in accordance with ASTM E 1354 at an incident heat flux of 50 kW/m<sup>2</sup> in the horizontal orientation. Metal wastebaskets and other metal waste containers with a capacity of 20 gallons (76 L) or more shall be listed in accordance with UL 1315 and shall be provided with a noncombustible lid.

**304.4 Outdoor storage.** Outdoor storage of combustible waste at a transfer station, recycling facility, or other lawful outdoor combustible waste storage facility, shall comply with the requirements of FC 315.

### SECTION FC 305 IGNITION SOURCES

**305.1 Clearance from ignition sources.** Clearance between ignition sources, such as luminaires, heaters and open-flame devices, and combustible materials shall be maintained in an approved manner.

**305.2 Hot ashes and spontaneous ignition sources.** Hot ashes, cinders, smoldering coals or greasy or oily materials subject to spontaneous ignition shall not be deposited in a combustible container, or within 10 feet (3048 mm) of other combustible material, including combustible walls and partitions and combustible waste, or within 2 feet (610 mm) of openings to buildings or structures.

**Exception:** The minimum required separation distance to other combustible materials shall be 2 feet (610 mm) where the material is deposited in a covered, noncombustible container placed on a noncombustible floor, ground surface or stand.

**305.3 Open-flame warning devices.** It shall be unlawful to use an open-flame device on roadways as a warning signal or for any other purposes.

**Exception:** The use of fuses at the scene of an emergency or as required by standard railroad operating procedures.

**305.4 Deliberate or negligent burning.** It shall be unlawful to deliberately or through negligence set fire to or cause the burning of combustible material or combustible waste in such a manner as to endanger the safety of persons or property.

### SECTION FC 306 MOTION PICTURE FILM AND SCREENS

**306.1 Motion picture projection rooms.** Electric arc, xenon or other light source projection equipment which develops hazardous gases, dust or radiation and the projection of ribbon-type cellulose nitrate film, regardless of the light source used in projection, shall be operated within a motion picture projection room complying with the requirements of Chapter 4 of the Building Code.

**306.2 Cellulose nitrate film storage, handling and use.** Cellulose nitrate film shall be stored, handled and used in accordance with NFPA 40 and subject to the approval of the commissioner.

**306.2.1 Supervision.** The handling and use of cellulose nitrate film, including motion picture projection, shall be under the personal supervision of a person holding a certificate of fitness. The storage of cellulose nitrate film shall be under the general supervision of a person holding a certificate of fitness.

**306.3 Motion picture screens.** The screens upon which motion pictures are projected shall be of noncombustible construction as set forth in Chapter 6 of the Building Code, or shall meet the flame propagation performance criteria of NFPA 701, or shall comply with the requirements for a Class A interior finish in accordance with Chapter 8 of the Building Code. Screens installed prior to the effective date of this code shall comply with the applicable Building Code requirements. The construction supporting such motion picture screens shall be of noncombustible construction as set forth in Chapter 6 of the Building Code, and shall comply with the load bearing requirements of the Building Code.

## SECTION FC 307 OPEN FIRES

**307.1 General.** Kindling, building, maintaining or using an open fire is prohibited.

### Exceptions:

1. Portable outdoor barbecues as authorized by FC 307.5.
2. Outdoor noncommercial barbecue fires in equipment provided by and located in city parks where such open fires are allowed by the Department of Parks and Recreation.
3. In connection with training of fire brigades or similar purposes by persons or entities where such training is required by law, rule or regulation.
4. Approved open fires used for special effects in connection with television, motion picture, theatrical and other entertainment productions.
5. Coke-fueled salamanders at a construction site in accordance with FC 307.6 and the rules.
6. Lighting of charcoal for hookah use on the premises of non-tobacco hookah establishments in accordance with FC 310 and the rules.
7. Residential fire pits as authorized by FC 307.7.

**307.2 Authorization.** Open fires allowed pursuant to FC 307.1 may only be kindled, built, maintained or used with the prior written authorization of the agencies with regulatory jurisdiction, property owner and other required approvals, and only when such open fires are maintained in compliance with all conditions of such authorization or approval. The commissioner may prohibit the kindling, building, maintaining or use of open fire or order the extinguishment of any open fire allowed by this section, upon a determination that

such open fire will create an undue hazard because of conditions in the surrounding environment.

**307.3 Reserved.**

**307.4 Attendance.** Open fires shall be constantly attended until the fire is extinguished. A minimum of one portable fire extinguisher complying with the requirements of FC 906 with a minimum 4-A rating or other approved on-site fire-extinguishing equipment, such as a garden hose connected to an approved water supply, shall be available for immediate use.

**307.5 Portable outdoor barbecues.** Charcoal, electric, and LPG and piped natural gas-fueled portable outdoor barbecues may be operated and maintained in compliance with the requirements of this section.

**307.5.1 General.** Portable outdoor barbecues burning charcoal, powered by electricity, or fueled by LPG containers or piped natural gas may be stored and used on any residential premises in compliance with the requirements of this section and the rules. Portable outdoor barbecues burning charcoal, powered by electricity, or fueled by piped natural gas may be stored and used on any other premises in compliance with the requirements of this section and the rules, except as may be restricted by the Zoning Resolution or the Department by rule or order. Stationary outdoor grills and other outdoor cooking equipment shall be installed in accordance with the Building and Mechanical Codes, and operated and maintained in accordance with this section.

**307.5.2 Grate area.** The total grate area of a portable outdoor barbecue shall not exceed 10 square feet (0.929 m<sup>2</sup>).

**307.5.3 Clearance distances.** Portable outdoor barbecues shall not be stored or used within 10 feet (3048 mm) of any combustible waste, combustible material, or any combustible building surface, including combustible roofs and decks. To the maximum extent feasible, windows, doors and other building openings within 10 feet (3048 mm) of a barbecue in use shall be kept closed. An entrance door shall be closed immediately after entering or exiting the building while the barbecue is in use.

**307.5.4 Fire extinguishing equipment.** A garden-type hose attached to a water supply, or a minimum of one portable fire extinguisher complying with the requirements of FC 906 with a minimum 4-A rating, shall be provided for any portable outdoor barbecue, and shall be readily accessible whenever the portable outdoor barbecue is in use. A portable fire extinguisher complying with the requirements of FC 906 and with a Class K rating shall be provided for any portable outdoor barbecue used for commercial cooking purposes, and shall be readily accessible whenever such barbecue is in use.

**307.5.5 Natural gas piping.** The natural gas piping supplying portable outdoor barbecues designed to use piped natural gas shall be designed and installed in accordance with the Fuel Gas Code.

**307.5.6 LPG containers.** Portable outdoor barbecues fueled by LPG containers shall additionally comply with the requirements of FC 307.5.6.1 and 307.5.6.2.

## GENERAL PRECAUTIONS AGAINST FIRE

**307.5.6.1 Group R-2 occupancies.** Only portable outdoor barbecues designed for use with LPG containers with a capacity of 16.4 ounces (0.465 kg) may be stored or used on the premises of a Group R-2 occupancy. Indoor storage of 16.4-ounce (0.465 kg) LPG containers for this or any other purpose is limited to a maximum of four such containers per dwelling unit.

**307.5.6.2 Group R-3 occupancies.** Portable outdoor barbecues designed for use with LPG containers with a capacity of 20 pounds (9.08 kg) or LPG containers with a capacity of 16.4 ounces (0.465 kg) may be stored or used on the premises of a Group R-3 occupancy. Twenty-pound LPG containers shall not be stored or used indoors, or on any rooftop or balcony. A maximum of two 20-pound LPG containers may be used to fuel a portable outdoor barbecue. Indoor storage of 16.4-ounce (0.465 kg) LPG containers for this or any other purpose is limited to a maximum of four such containers per dwelling unit.

**307.5.7 Cleaning.** Portable outdoor barbecues shall be periodically cleaned by removing grease or fat accumulations from grills and in trays below the grill.

**307.6 Coke-fueled salamanders.** Coke and coke-fueled salamanders may be stored, handled and used for construction-related curing and drying at construction sites in accordance with this section and the rules.

**307.6.1 Supervision.** The handling and use of coke and coke-fueled salamanders at construction sites, including the extinguishment of the coke, shall be under the personal supervision of a certificate of fitness holder. A certificate of fitness holder may not supervise the handling or use of more than fifty coke-fueled salamanders, or the handling or use of coke or coke-fueled salamanders that are located on more than one floor. The storage of coke and coke-fueled salamanders at construction sites shall be under the general supervision of a certificate of fitness holder.

**307.7 Residential fire pits.** Residential fire pits may be stored and used to maintain an open fire in compliance with the requirements of this section and the rules on the premises of a detached Group R-3 occupancy in any R1, R2, or R3 residential zoning district.

**307.7.1 Safe operations.** Residential fire pits must be operated in accordance with manufacturer instructions for such residential fire pit, and shall be constantly attended while a fire is lit.

**307.7.2 Clearance distances.** Residential fire pits shall not be stored or used within 10 feet (3048 mm) of any combustible waste, combustible material, or any combustible building surface. To the extent feasible, windows, doors and other building openings within 25 feet (7620 mm) of a residential fire pit in use shall be kept closed. An entrance door shall be closed immediately after entering or exiting the building while a residential fire pit is in use.

**307.7.3 Design and operation.** The department may establish by rule standards for the design, installation,

operation and maintenance for residential fire pits, provided that such rules are consistent with provisions established by this section.

**307.7.4 Hazardous environmental conditions.** The department may prohibit use of residential fire pits in any location upon determination that such activity creates an undue fire hazard because of conditions in the surrounding environment, including during wind conditions or red flag weather.

## SECTION FC 308 OPEN FLAMES

**308.1 General.** This section governs the use of open flames in all buildings, structures and premises.

**308.2 Use of open flames.** Open flames may be lighted, maintained and used only as allowed in this section. Stationary appliances, including cooking, space heating and water heating appliances, are not open-flame devices subject to this section and shall be designed and installed in accordance with the construction codes. Portable fueled devices, equipment and systems, including LPG-fueled cookstoves and torches, shall be operated in accordance with FC 313.

**308.3 Prohibitions.** It shall be unlawful to:

1. cause or allow an open flame to be lit or maintained in any room or other area of a building, structure, premises, marine vessel, watercraft or other place in which a hazardous material is stored, handled or used, or where conditions exist that could cause ignition of flammable vapors or combustible material.
2. use or maintain in any area in which smoking is prohibited, as set forth in FC 310 or elsewhere in this code, a lighted match or other flame which has not been approved for use by the department in such areas.
3. place or discard, or cause to be placed or discarded, an open flame, lighted match or other flaming substance or object on any surface or article where it can cause the ignition of combustible material or combustible waste, or otherwise cause an unwanted fire.
4. store or use candles, incense or similar open-flame producing items in Group R-1 college and university dormitories.
5. use or maintain an open flame or open-flame device in or on a building, structure or premises as a signal or marker, except that fusees may be used on roadways to alert motorists to stopped vehicles or other emergency condition.
6. light and release or allow to become airborne any lantern, balloon, or other item or craft containing or fueled by a flame or other heat-producing material, except for balloon operations authorized by FC Chapter 20 and other operations authorized by the department.

**308.4 General safety precautions.** Open flames and open-flame devices are ignition sources that can readily ignite combustible materials. When their use is allowed by this sec-

tion, all safety precautions appropriate to the circumstances shall be observed, including the following requirements:

1. Candles and other unenclosed open flames shall be constantly attended while lit.
2. Open flames and open-flame devices, including lighted candles, shall be protected from accidental contact by appropriate placement, and secured from tipping or other movement by a suitable candleholder or other device.
3. Open flames and open-flame devices, including lighted candles, except open-flame devices designed to be surface mounted, shall be placed on a noncombustible surface.
4. Open flames and open-flame devices, including lighted candles, shall be kept at least 3 feet (914 mm) from any combustible material or combustible waste.
5. Open flames and open-flame devices, including lighted candles, shall not be placed or kept in any corridor, stairwell or exit.
6. Open flame food warming devices shall be placed on non-combustible surfaces and constantly attended while lit. LPG-fueled open flame food warming devices shall not be used for food warming except where authorized by the department by issuance of an open flame permit.

**308.5 Use of open flames in assembly occupancies and places of public gathering.** Open flames may be lighted, maintained and used in Group A occupancies and public gathering places only as allowed in FC 308.5.1 through 308.5.4 and the rules.

**308.5.1 Prohibitions.** It shall be unlawful to light, maintain or use an open flame in a Group A occupancy or other building or structure used for a public gathering.

**Exceptions:**

1. Open flames are allowed in the following locations when used for the following purposes, provided that safety precautions are taken to prevent ignition of combustible material and otherwise ensure the safety of occupants in accordance with FC 308.4, other applicable provisions of this code and the rules, and the terms and conditions of the permit or other approval:
  - 1.1. Use of candles and open-flame devices in accordance with FC 308.5.2.
  - 1.2. The preparation of flaming foods or beverages in accordance with FC 308.5.3.
  - 1.3. Special effects in connection with a theatrical performance or other event for which a special effect permit has been granted in accordance with FC 308.5.4.
  - 1.4. Open-flame devices for food warming in accordance with the rules.
  - 1.5. Open-flame devices for demonstrations in exhibitions or trade shows in accordance with the rules.

1.6. Where necessary for ceremonial or religious purposes.

2. Natural gas light fixtures installed in compliance with the requirements of the Building Code and the Plumbing Code, and approved precautions are taken to prevent ignition of combustible materials.

**308.5.2 Open-flame decorative devices.** Open-flame decorative devices, including wall-mounted candles, torch sconces, insect-repellant candles in glass jars or metal cans, tabletop candles and oil lamps, free standing torch holders and candelabras, shall comply with the following requirements:

1. Use of Class I and Class II liquids, including alcohol, and LPG in open flame decorative devices, is prohibited.
2. Liquid- or solid-fueled lighting devices containing more than 8 ounces (237 ml) of fuel must self-extinguish and not leak fuel at a rate of more than 0.25 teaspoon per minute (1.26 ml per minute) if tipped over.
3. The device or holder shall be constructed to prevent the spillage of liquid fuel or wax at the rate of more than 0.25 teaspoon per minute (1.26 ml per minute) when the device or holder is not in an upright position.
4. The device or holder shall be designed so that it will return to the upright position after being tilted to an angle of 45 degrees from vertical.
 

**Exception:** Devices that self-extinguish if tipped over and do not spill fuel or wax at the rate of more than 0.25 teaspoon per minute (1.26 ml per minute) if tipped over.
5. The flame shall be enclosed except where openings on the side are not more than 0.375 inch (9.5 mm) diameter or where openings are on the top and the distance to the top is such that a piece of tissue paper placed on the top will not ignite in 10 seconds.
6. Enclosures shall be made of noncombustible materials and securely attached to the open-flame device.

**Exception:** An enclosure is not required to be attached to any open-flame decorative device that will self-extinguish if the device is tipped over.

7. Fuel canisters shall be safely sealed for storage.
8. Storage and handling of combustible liquids shall be in accordance with FC Chapter 57.
9. Shades, where used, shall be made of noncombustible materials and securely attached to the open-flame device holder or enclosure.
10. Candelabras with flame-lighted candles shall be securely fastened in place to prevent overturning, and shall be located away from occupants using

## GENERAL PRECAUTIONS AGAINST FIRE

the area and away from possible contact with drapes, curtains or other combustibles.

11. Open-flame devices shall not be placed in any aisle, standing area, corridor or component of the means of egress.

**308.5.3 Flaming food and beverage preparation.** The preparation and serving of flaming foods and beverages in Group A occupancies and public gathering places shall be in accordance with FC 308.5.3.1 through 308.5.3.4.

**308.5.3.1 Dispensing of liquid.** Alcohol or other flammable or combustible liquid used in the preparation of flaming food and beverages shall be stored in a container with a capacity not exceeding 1 quart (946.5 ml) and dispensed from such container using a controlled-pouring device limiting the flow to a 1-ounce (29.6 ml) serving. The container shall have a secure cap or lid or one designed to prevent spillage when not in use.

**308.5.3.2 Ignition and serving of flaming food.** Flaming food shall be ignited and served as follows:

1. Flaming food shall be ignited on a noncombustible surface or, if the surface is combustible, it shall be protected by a noncombustible mat that covers the entire top surface of the table.
2. The flames generated for flaming food shall not exceed 6 inches (152.4 mm) above the serving dish. Any pouring, ladling or spooning of liquids is restricted to a maximum height of 8 inches (203 mm) above the receiving receptacle.
3. Flaming food shall not be ignited on or above the table at which the patrons to whom the food is to be served are seated. Flaming food shall be ignited on a nearby serving table or cart at least 3 feet (914 mm) from patrons, or lighted in the kitchen and transported to the table on a serving cart.
4. The flames generated by flaming food shall be extinguished before the food is placed on the table before the patron.
5. The person preparing the flaming foods shall have a wet cloth towel immediately available for use in smothering the flames in the event of an emergency. In addition to portable fire extinguishers required by FC 906, a portable fire extinguisher with a minimum 2-A:10B rating shall be kept at or near the location where flaming food or beverage is ignited.

**308.5.3.3 Ignition and serving of flaming beverages.** Ignition and serving of flaming beverages at patron tables shall be conducted in the same manner as flaming food, as set forth in FC 308.5.3.2. Flaming beverages shall not be ignited and served on bars and counters at which the public is seated unless a safe perimeter of at least 3 feet (914 mm) from any patrons can be established and maintained while the beverage is lighted and flaming.

**308.5.3.4 Staff training.** Any staff serving flaming food or beverages shall be trained and knowledgeable in the safe ignition and handling of such food or beverages.

**308.5.4 Special effects.** Use of open flames as a special effect is allowed in conjunction with theatrical performances and in other places of assembly or public gathering only when authorized by the department. When approved, open flames shall be used in accordance with FC Chapter 56 and NFPA 160.

**308.6 Alcohol-fueled decorative open-flame devices.** Alcohol-fueled decorative open-flame devices shall be designed, installed, operated and maintained in accordance with FC 308.6.1 through 308.6.5.

**308.6.1. Prohibitions.** It shall be unlawful to install or use a stationary or portable alcohol-fueled open-flame device in Group A, E and I occupancies, and public gathering spaces. It shall be unlawful to use portable alcohol-fueled open-flame devices in Group R occupancies.

**308.6.2 Design.** Stationary and portable alcohol-fueled open-flame devices installed or used in New York City shall be designed in accordance with the following requirements:

1. The device shall be constructed of metal, fire-resistant glass and/or other noncombustible material of sufficient thickness as to be capable of withstanding the heat generated by the open flames.
2. The device shall be constructed to provide protection from the flames at the maximum flame height the device is capable of generating.
3. The open flame shall be generated in a controlled manner through the use of a wick, valve or other approved method. A device that generates a flame in an uncontrolled manner is an open fire prohibited by FC 307.1.
4. The device shall have a means of manually extinguishing the flame, either by a shutoff valve, a means of manually closing the device that cuts off the supply of oxygen to the flame thereby extinguishing the flame, or other approved method. The method by which the flame is extinguished shall not require use of a battery-powered device.
5. The device shall use solid fuel or be fueled through a pump or other means of liquid fuel transfer from a container to the device without spillage. Only the type of fuel specified for the device shall be used.
6. The fuel capacity of the device shall not exceed 64 fluid ounces (1888 ml) or the equivalent in solid fuel, except as authorized by the department.
7. The device shall be listed by a nationally recognized testing laboratory.

**308.6.3 Installation.** All stationary and portable alcohol-fueled open-flame devices shall be installed or placed in

accordance with listing requirements, manufacturer's instructions and the following fire safety requirements:

1. The device shall be installed or placed at a location protected from movement and air drafts, and at least 3 feet (914 mm) from combustible surfaces and materials, including upholstered furniture, draperies, and wood surfaces.
2. The device shall be installed or placed in a room of sufficient size and ventilation to avoid dangerous accumulations of carbon monoxide or carbon dioxide, taking into consideration the capacity of the device's alcohol reservoir and rate of burning. In no event shall a device be installed or used in a room smaller than that recommended by the manufacturer's instructions.
3. Devices designed for stationary installation shall be securely affixed to the floor, wall or ceiling or in furniture to prevent movement. No devices shall be installed in or on a wall or ceiling, or in a wooden cabinet or other furniture of combustible construction, unless it is of a type for which a certificate of approval has been issued by the department.

**308.6.4 Safety precautions.** Alcohol-fueled decorative devices shall be used in accordance with manufacturer's instructions and the following safety precautions:

1. A lighted device shall not be left unattended. Flames shall be extinguished when the person responsible for attending to the operation of the device leaves the room or goes to sleep. The shut-off switch or device closure shall be used to ensure that the alcohol flames, which are not always readily visible, are extinguished.
2. A device shall not be fueled or moved when it is lighted or when it is not lighted but still hot.
3. A smoke alarm and a carbon monoxide alarm, or detectors, shall be installed in any room in which an alcohol-fueled decorative device is installed or used.
4. A portable fire extinguisher for household use shall be kept readily available in any room in which an alcohol-fueled decorative open-flame device is installed or used.

**308.6.5 Storage of fuel.** Alcohol stored for use in alcohol-fueled decorative open-flame devices shall be stored in a tightly sealed container in a cool location, away from heat and ignition sources. Such fuel storage is limited to 1 gallon (3.8 L).

## SECTION FC 309 POWERED INDUSTRIAL TRUCKS, EQUIPMENT AND MOBILITY DEVICES

**309.1 General.** Powered industrial trucks, powered industrial equipment and powered mobility devices shall be designed, operated and maintained in accordance with this section.

**309.2 Powered industrial trucks.** Powered industrial trucks fueled by flammable or combustible liquids or flammable gases shall be designed and operated in accordance with FC 309.2.1 through 309.2.5.

**309.2.1 Hazardous locations.** Powered industrial trucks that are operated in areas designated as hazardous (classified) locations in accordance with the Electrical Code shall be listed and labeled for use in such environments in accordance with NFPA 505. Entry by equipment that is not listed or approved as suitable for the specific classified location may be allowed for the purpose of maintenance or other necessary business operation where the owner has established an entry authorization procedure and has verified that the entry area is clear of hazardous environment and will remain so for the duration of the entry.

**309.2.2 Powered industrial trucks using flammable gas fuel.** Powered industrial trucks that use LPG or other flammable gas as fuel shall be limited to one fuel container with a capacity not greater than 40 pounds (18.16 kg) or 340 SCF (9.63 m<sup>3</sup>) of flammable gas, whichever is less, except that powered industrial trucks used to resurface ice that are designed to operate with more than one such container shall be limited to operating with two such containers. Liquefied gas containers installed in a horizontal position shall be of such a design that the pressure relief valve will discharge vapor properly. Powered industrial trucks that use LPG or other flammable gas as fuel shall not be parked near open flames or other heat or ignition sources, or near open pits, underground entrances, elevator shafts, or similar areas. Such powered industrial trucks shall be stored and used in locations with adequate ventilation. It shall be unlawful to store or use such powered industrial trucks in a basement, cellar or other areas below grade.

**309.2.3 Fueling.** Powered industrial trucks using a flammable or combustible liquid or flammable gas fuel shall be fueled in compliance with the requirements of FC 309.2.3.1 through 309.2.3.4.

**309.2.3.1 Location.** All fueling, including container replacement, shall be conducted outdoors or in areas specifically approved for that purpose, and in accordance with this code and the rules.

**309.2.3.2 Liquid fuels.** Fixed liquid fuel-dispensing equipment for powered industrial trucks shall be designed, installed, operated and maintained in accordance with FC Chapter 23. Emergency refueling of powered industrial trucks using portable containers shall be in accordance with FC Chapters 23 and 57. The engine of a powered industrial truck shall be shut off and the operator shall not be on or inside the truck during refueling.

**309.2.3.3 Container replacement.** Outdoor connecting and disconnecting of fuel gas containers shall be conducted away from open pits, underground entrances, or other areas below grade, and away from all open flames or other heat or ignition sources. Fueling of powered industrial trucks shall be in accordance

## GENERAL PRECAUTIONS AGAINST FIRE

with FC Chapter 61, if LPG-powered, and FC Chapters 23 and 58, if CNG-powered, and the rules.

**309.2.3.4 Hydrogen fueling.** Filling of containers for powered industrial trucks with hydrogen, including metal hydride hydrogen storage system containers, shall be conducted in accordance with FC 2309.

**309.2.4 Repairs.** Repairs to fuel systems or electrical systems, and repairs utilizing open flame or welding, shall be done in an indoor or outdoor location approved for that purpose.

**309.2.5 Storage.** When not in use, powered industrial trucks shall be stored in approved designated storage areas. Each storage area shall be provided with a portable fire extinguisher complying with the requirements of FC 906 having a minimum 4-A:20-B:C rating.

**309.3 Battery-powered industrial trucks, industrial equipment and mobility devices.** Powered industrial trucks, powered industrial equipment and powered mobility devices using a storage battery shall be designed in accordance with FC 309.3.1, and shall be charged and stored in a storage, charging and/or repair facility, including any storage or charging area in Group B, R-2 or M occupancy, that is designed, installed, operated and maintained in accordance with the construction codes, Electrical Code and FC 309.3.2 through 309.3.4.

### Exceptions:

1. Storage and charging in a Group R-3 occupancy or in a dwelling unit in a Group R-2 occupancy of not more than 5 powered mobility devices using a storage battery, provided that such devices are for personal use.
2. Charging of a single powered mobility device by and in the presence of its owner or user.

**309.3.1 Battery chargers.** Powered industrial trucks, powered industrial equipment and powered mobility devices using a storage battery shall be charged in accordance with the manufacturer's instructions and the applicable listing standard using the original equipment manufacturer-supplied charging equipment, or other charging equipment suitable for the purpose, that is designed in accordance with applicable federal, New York State and/or New York City laws, rules or regulations, and listed:

1. pursuant to UL Standard 1564 or other approved listing of an approved testing laboratory; or
2. for use with the truck, item of equipment or device in accordance with UL Standard 2272, UL Standard 2849 or other approved listing of an approved testing laboratory.

**309.3.2 Battery inspection.** A storage battery shall be inspected for cracks, punctures, leaking contents or other damage prior to charging or re-charging if the battery was dropped, involved in a collision or otherwise subjected to a potential mechanism of damage. Damaged batteries shall not be re-used. Damaged batteries and batteries at the end

of their useable life shall be promptly removed from the premises and lawfully disposed of.

**309.3.3 Battery charging areas.** Powered industrial trucks, powered industrial equipment and powered mobility devices using a storage battery shall be charged in a suitable indoor room or area or outdoor location that:

1. has sufficient natural or mechanical ventilation in accordance with the Mechanical Code to prevent the accumulation of any flammable or other gases that may be discharged during normal charging operations;
2. has an adequate electrical supply and a sufficient number of electrical receptacles to allow the charging equipment for each truck, item of equipment or device to be directly connected to a receptacle. Extension cords and power strips shall not be used. A minimum of 3 feet (914 mm) shall be maintained between each truck, item of equipment or device during charging operations;
3. has an adequate electrical supply and a sufficient number of electrical receptacles to allow the charging equipment for battery packs and other removable storage batteries to be directly connected to a receptacle. Extension cords and power strips shall not be used. Battery packs and other removable storage batteries shall not be stacked or charged in an enclosed cabinet (unless the cabinet is specially designed and approved by the department for such purpose). Except as otherwise approved by the department, a minimum distance of 2 feet (610 mm) shall be maintained between each battery pack or other removable storage battery during charging operations, provided that the aggregate energy capacity of battery packs or other removable storage batteries that can be charged in a single fire area does not exceed 20 kWh. A minimum distance of 3 feet (914 mm) shall be maintained if the aggregate energy capacity exceeds 20 kWh. The aggregate energy capacity of battery packs or other removable batteries that can be charged in a single fire area shall not exceed 50 kWh;
4. is not used for the storage of combustable materials, combustable waste or hazardous materials;
5. is separated by a fire barrier with a minimum one-hour fire-resistance rating from areas in which repairs or other servicing is conducted on the storage battery or other electrical components of the truck, item of equipment or mobility device;
6. where six or more trucks, items of industrial equipment or devices using a storage battery are being charged at a single indoor location, is dedicated for battery charging and secured from unauthorized entry; separated by a fire barrier which encloses the entire space with a minimum one-hour fire-resistance rating; and protected by a fire sprinkler system and one or more smoke detectors or smoke alarms. If the building or occupancy is equipped with a fire