

Study Session

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2021 IFC Chapters 3 and 4 General Requirements, Emergency Planning and Preparedness

OBJECTIVE: To gain an understanding of the issues, requirements and procedures related to general precautions against fire, emergency planning and preparedness.

REFERENCE: Chapters 3 and 4, 2021 *International Fire Code*[®] (IFC[®])

KEY POINTS:

- What is the scope of Chapter 3 of the IFC, and how is its purpose best summarized?
- What are some of the key definitions related to general precautions against fire?
- How does the IFC deal with what might commonly be called trash? What are some of the specific requirements regarding types and amounts of materials?
- Where can additional information and details be found about the regulation of motion picture projection and the use and storage of cellulose nitrate film?
- How are bonfires and other types of open burning regulated in the IFC?
- What are some of the uses of open flame that are regulated, and where can details be found?
- What are the provisions regarding the storage, use and repair of forklifts?
- In what areas is smoking prohibited, and how is this enforced?
- Are there regulations for the maintenance of abandoned or vacant premises?
- How are indoor displays of highly combustible materials and vehicles or boats regulated?
- What are the requirements for indoor storage of combustible materials? Outdoor storage?
- Can idle wooden pallets be stored adjacent to the outside wall of a building?
- Are plastic pallets regulated the same as wooden pallets?
- What is the difference between industrial additive manufacturing and nonindustrial additive manufacturing?
- What are the requirements for a 3D printing operation?
- How does the code regulate landscaped roofs?

KEY POINTS:
(Cont'd)

- How are fire protection appliances protected from vehicle impact?
- Can gasoline-fueled equipment be used inside a building?
- Can liquid-fueled or gaseous-fueled vehicles be displayed inside a building?
- What is the maximum height of stored products inside a building? Outside buildings?
- What portions of a mobile food preparation vehicle (catering truck) are regulated by the IFC?
- Which types of activities are regulated by Chapter 4 of the IFC?
- Under what circumstances is the fire code official authorized to require a fire watch?
- Which occupancy groups are required to develop a fire safety and evacuation plan?
- Which facilities are required to provide employees with training in fire emergency procedures?
- What are some of the more specific emergency planning requirements for certain uses and occupancies?
- Which facilities are required to make an announcement regarding the location of exits?
- How often are emergency evacuation drills to be conducted in an assisted living facility?
- In an assisted living facility, who must participate in the evacuation drill?
- When emergency evacuation drills are practiced at a restaurant, who needs to participate?
- What is a lockdown plan, and how is it prepared and implemented?
- Which types of buildings require the preparation and maintenance of a lease plan?
- Which IFC provision prohibits the installation of booby traps in buildings?
- What are the training requirements for employees and staff at facilities that handle hazardous materials?
- When are crowd managers required and what are their responsibilities?

Code Text: *The provisions of this chapter shall govern the occupancy and maintenance of all structures and premises for precautions against fire and the spread of fire and general requirements of fire safety.*

Discussion and Commentary: There are a number of situations or activities that are widely known to either cause fires or exacerbate the spread of fires. As an example, the use of charcoal grills on balconies of apartment buildings constructed either partially or entirely of combustible materials has been the cause of countless fires that typically spread to the remainder of the building and threaten the occupants. The purpose of Chapter 3 is to identify common causes for the ignition and spread of fire, and to provide regulations to guard against this occurrence.

GENERAL REQUIREMENTS:

- PERMITS (required operational permits as listed in IFC Sec. 105.5)
- ASPHALT KETTLES (transport, fuel containers, attendant, etc.)
- COMBUSTIBLE WASTE MATERIAL (trash, weeds, under bleachers, oily rags, containers, dumpsters, etc.)
- IGNITION SOURCES (clearances to combustibles, hot ashes, flares, etc.)
- MOTION PICTURE PROJECTION ROOMS (See IFC Sec. 306, NFPA 40, IBC Sec. 409)
- OPEN BURNING, RECREATIONAL FIRES AND PORTABLE OUTDOOR FIREPLACES (permits, prohibitions, clearances, attendance)
- OPEN FLAMES (cooking, candles, lanterns, heaters, candelabra, etc.)
- POWERED INDUSTRIAL TRUCKS AND EQUIPMENT (forklifts, etc.)
- SMOKING (“No Smoking” areas, signs, ash trays, discarding materials)
- VACANT PREMISES (abandoned, vacant, empty tenant spaces, fire protection systems, removal of combustibles and hazardous materials, etc.)
- VEHICLE IMPACT PROTECTION
- FUELED EQUIPMENT (motorcycles, lawn care, portable cooking)
- INDOOR DISPLAYS (unobstructed exits, fueled vehicle requirements)
- GENERAL STORAGE (clearance to ceiling, stability, equipment rooms, outdoor storage, etc.)
- HAZARDS TO FIRE FIGHTERS (shafts, pits, rooftop obstructions, etc.)
- LANDSCAPED ROOFS (vegetation management, fire fighting, etc.)
- LAUNDRY CARTS (combustibility, sprinkler protection, etc.)
- MOBILE FOOD PREPARATION VEHICLES (fuel, cooking oil, safety devices, fire protection appliances, etc.)
- ADDITIVE MANUFACTURING (listing, combustible dusts, occupancy classification, etc.)
- ARTIFICIAL COMBUSTIBLE VEGETATION (combustibility, on rooftop, etc.)

NFPA Standard 550, *Guide to the Fire Safety Concepts Tree* published by the National Fire Protection Association, is a good source for additional information regarding the prevention of fire ignition and the management of fire impacts.

Code Text: *Capacity exceeding 5.33 cubic feet. Containers with a capacity exceeding 5.33 cubic feet (40 gallons) (0.15 m³) shall be provided with lids. Containers and lids shall be constructed of noncombustible materials or of combustible materials with a peak rate of heat release not exceeding 300 kW/m² where tested in accordance with ASTM E1354 at an incident heat flux of 50 kW/m² in the horizontal orientation. **Exceptions:** Wastebaskets complying with Section 808.*

Discussion and Commentary: Fires often occur in waste containers. The vast majority of contents in a waste container is combustible materials. Where trash containers are used inside buildings and the capacity of the container exceeds 40 gallons, the container must be provided with a lid. The container and the lid must be either noncombustible or manufactured from materials having a limited heat-release rate to ensure that the rate of fire development is controlled. Trash containers meeting the combustibility requirement will be stamped, typically on the bottom of the container.



The trash container on the right passed the ASTM E1354 fire test and did not contribute to the fire.

Code Text: *Clearance between ignition sources, such as luminaires, heaters, flame-producing devices and combustible materials, shall be maintained in an approved manner.*

Discussion and Commentary: This section can be applied to any number of situations where there are combustible materials near a source of ignition. If an open flame is present, an ignition source is available. A source of heat, such as a light fixture or luminaire, can also provide ignition. The section does not specify the minimum separation distance between the combustible materials and the source of heat. The separation required is based on the level of heat and the susceptibility of the exposed materials to ignite.



Various sources of heat are used in different environments, but they must all be separated from combustible materials.

Topic: Portable Outdoor Fireplaces

Category: General Requirements

Reference: IFC 307.4.3

Subject: Open Burning, Recreational Fires and
Portable Outdoor Fireplaces

Code Text: *Portable outdoor fireplaces. Portable outdoor fireplaces shall be used in accordance with the manufacturer's instructions and shall not be operated within 15 feet (3048 mm) of a structure or combustible material. **Exception:** Portable outdoor fireplaces used at one- and two-family dwellings.*

Discussion and Commentary: Outdoor fireplaces create a cozy gathering area. However, they still do create a hazard. As such, the IFC regulates the location of the portable outdoor fireplace at all facilities other than one- or two-family dwellings. The regulations are limited to portable appliances; permanent appliances are regulated by the IBC and *International Fuel Gas Code*[®] (IFGC[®]).



(Photograph courtesy of Getty Images.)

The fire hazard presented by outdoor fireplaces cannot be ignored. Portable outdoor fireplaces create a higher hazard because of the ease of relocating the appliance.