2021 International Fire Code Significant Changes

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Welcome!

Housekeeping

• Technical issues
  • If you are having trouble with your audio, make sure your audio settings at the top are correct.

WebEx
1-866-229-3239
Ways to Interact

• Use the chat box to ask questions.
• Raise your hand.
• Use annotation tools to draw, type or point out something.
Identify key changes made in the 2021 IFC
Objective

Upon completion, you will be better able to:

• Identify the most significant differences between the 2018 IFC and the 2021 IFC
• Explain the differences between the current and previous edition
• Identify key changes in organization and code requirements
• Identify the applicability of design, plan review and inspection requirements
Marginal Markings within the codebook

Solid vertical lines indicate a technical change from the requirements of the 2018 edition.

Arrows indicate where a section, paragraph, item in a list, exception or table has been deleted.

A single asterisk [*] indicates that text or a table has been relocated elsewhere in the code.

A double asterisk [**] indicates that the section or table immediately following has been relocated here from a different section.
Course Icons

Addition  Deletion  Modification  Clarification
Organization of IFC

Part 1: Administration and Definitions (CH 1 & 2)
Part 2: General Safety Provisions (CH 3 & 4)
Part 3: Building and Equipment Design Features (CH 5-12)
Part 4: Special Occupancies and Operations (CH 20-40)
Part 5: Hazardous Materials (CH 50-67)
PART 1

ADMINISTRATION AND DEFINITIONS
Section 114
Unsafe Structures
3D PRINTER

A machine used in the additive manufacturing process for fabricating objects through the deposition of a material using a print head, nozzle or another printer technology.
ADDITIVE MANUFACTURING

A process of joining materials to make objects from 3D model data, usually layer upon layer, sometimes referred to as 3D printing. The code recognizes two types of additive manufacturing:

**Industrial additive manufacturing.** 3D printing operations that typically utilize combustible powders or metals, an inert gas supply, a combustible dust collection system, or that create a hazardous (classified) location area or zone outside of the equipment.

**Non-industrial additive manufacturing.** 3D printing operations that do create a hazardous (classified) location area outside of the equipment, and do not utilize an inert gas supply or a combustible dust collection system.
CRITICAL AREAS

Areas that are designated for the highest level of emergency responder radio coverage including but not limited to areas such as exit stairs, exit passageways, elevator lobbies, fire protection equipment room and control valve locations, fire command centers.
Chapter 2
Definitions

LIFE SAFETY SYSTEMS

Systems, devices and equipment that enhance or facilitate evacuation, smoke control, compartmentation and/or isolation.
Chapter 2
Definitions

SITE SAFETY PLAN

A plan developed to establish a fire prevention program at a construction site
PART 2

GENERAL SAFETY PROVISIONS
2021 IFC Chapter 3

GENERAL REQUIREMENTS
SECTION 320
ADDITIVE MANUFACTURING (3D Printing)

320.1 General.
  320.1.1 Scope.
  320.1.2 Installation, operation and maintenance.
  320.1.3 Production materials.
SECTION 320
ADDITIVE MANUFACTURING (3D Printing)

320.2 Non-industrial additive manufacturing.

320.2.1 Listing.
320.2.2 Occupancies.
SECTION 320
ADDITIVE MANUFACTURING (3D Printing)

320.3 Industrial additive manufacturing.

320.3.1 Permits required.
320.3.2 Listing.
320.3.3 Combustible dusts and metals.
320.3.4 Powder evaluation.
320.3.5 Combustible (non-metallic) dusts.
320.3.6 Combustible metals.
320.3.7 Ancillary equipment.
320.3.8 Hazardous materials.
320.3.9 Inert Gas.
320.3.10 Technical assistance.
320.3.11 Performance-based design alternative.
320.3.12 Occupancies.
SECTION 321
ARTIFICIAL COMBUSTIBLE VEGETATION

321.1 Artificial combustible vegetation on roofs and near buildings. Artificial combustible vegetation exceeding 6 feet (1829 mm) in height and permanently installed outdoors, within 5 feet (1524 mm) of a building or on the roof of a building, shall comply with Section 807.4.1. The placement of artificial combustible vegetation shall also comply with Sections 806.3 and 807.4.2.

• Exception: Artificial decorative vegetation located more than 30 feet (9144 mm) from the exterior wall of a building.
SECTION 405
EMERGENCY EVACUATION DRILLS

405.1 General. Emergency fire and evacuation drills complying with Sections 405.2 through 405.10 shall be conducted not less than annually where fire safety and evacuation plans are required by Section 403 or where required by the fire code official. Lockdown plan drills shall be conducted in accordance with the approved plan. Such drills shall not be substituted for fire and evacuation drills required by Section 405.3. Drills shall be designed in cooperation with the local authorities.
405.2 Occupant participation. Emergency fire and evacuation drills shall involve the actual evacuation of occupants to a selected assembly point and shall provide occupants with experience in exiting through required exits.

Exceptions:

1. In ambulatory care facilities and Group I-2 the movement of care recipients to a safe area or to the exterior of the building is not required.

2. In Group I-1, Condition 2 the assembly point for residents is permitted to be within an adjacent smoke compartment.

3. In Group R-4, actual exiting from emergency escape and rescue openings shall not be required. Opening the emergency escape and rescue opening and signaling for help shall be an acceptable alternative.

4. In Group I-3, Conditions 2 through 5 where a defend-in-place response is permitted, the assembly point for detainees is permitted to be within an adjacent smoke compartment.

5. In Group I-3, Conditions 2 through 5, movement of detainees is not required to an assembly point is not required where there are security concerns.
### SECTION 405
#### EMERGENCY EVACUATION DRILLS

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<td>Semiannually on each shift [^a]</td>
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SECTION 405
EMERGENCY EVACUATION DRILLS

Footnotes Table 405.3.1

a. In severe climates, the fire code official shall have the authority to modify the emergency evacuation drill frequency.

a. Emergency evacuation drills are required in Group B buildings having an occupant load of 500 or more persons or more than 100 persons above or below the lowest level of exit discharge.

c. Emergency evacuation drills are required in ambulatory care facilities in accordance with Section 403.3.

b. Emergency evacuation drills in Group R-2 college and university buildings shall be in accordance with Section 403.9.2.1. Other Group R-2 occupancies shall be in accordance with Section 403.9.2.2.

c. In Groups I-1 and R-4, see Section 403.7.1.5 and 403.9.3.5 for additional drills for staff.
PART 3

BUILDING AND EQUIPMENT DESIGN FEATURES
2021 IFC Chapter 5

FIRE SERVICE FEATURES
Section 501.3.1

501.3.1 Site safety plan. The owner or owner's authorized agent shall be responsible for the development, implementation and maintenance of an approved written site safety plan in accordance with Section 3308.
Section 508
Fire Command Center

Where required

508.1 General. Where required by other sections of this code and in all buildings classified as high-rise buildings by the International Building Code and in all F-1 and S-1 Occupancies with a building footprint of over 500,000 square feet, a fire command center for fire department operations shall be provided and shall comply with Sections 508.1.1 through 508.1.6 508.1.7.
Section 508
Fire Command Center

508.1.3 Size. The fire command center shall be not less than 0.015 percent of the total building area of the facility served or 200 square feet (19 m²) in area, whichever is greater, with a minimum dimension of 0.7 times the square root of the room area or 10 feet (3048 mm), whichever is greater.

Where a fire command center is required for Group F-1 and S-1 occupancies with a building footprint greater than 500,000 square feet in area the fire command center shall have a minimum size of 96 square feet (9 m²) with a minimum dimension of 8 feet (2348 mm) where approved by the fire code official.
Section 510  
Emergency Responder Communication

510.4.1 Emergency responder communication enhancement coverage system signal strength. The building shall be considered to have acceptable in-building 2 way emergency responder communications enhancement system communication coverage when signal strength measurements in 95 percent of all areas and 99 percent in areas designated as critical areas by the fire code official on each floor of the building meet the signal strength requirements in Sections 510.4.1.1 through 510.4.1.3.
2021 IFC Chapter 6

BUILDING SERVICES AND SYSTEMS
## 2021 IFC Chapter 6

### Reordering

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Section 601.1 Scope

601.1 Scope. The provisions of this chapter shall apply to the installation, operation and maintenance of the following building services and systems: fuel-fired appliances and heating systems, electrical systems and equipment, mechanical refrigeration systems, elevator recall and commercial kitchen equipment.

1. Electrical systems, equipment and wiring.
2. Information technology server rooms.
3. Elevator systems, emergency operation and recall.
5. Commercial cooking equipment and systems.
6. Commercial cooking oil storage.
7. Mechanical refrigeration systems.
8. Hyperbaric facilities.
9. Clothes dryer exhaust systems.
Section 601.2
Hazard Abatement

601.2 Hazard abatement. Operations or conditions deemed unsafe or hazardous by the fire code official shall be abated. Equipment, appliances, materials and systems that are modified or damaged and constitute an electrical shock or fire hazard shall not be used.

601.2.1 Correction of unsafe conditions. The fire code official shall be authorized to require the owner, the owner’s authorized agent, operator or occupant of a building or premises to abate or cause to be abated or corrected such unsafe operations or conditions either by repair, rehabilitation, demolition or other approved corrective action in compliance with this code.
603.1.2 Healthcare facilities. In Group I-2 facilities, ambulatory care facilities and outpatient clinics, the electrical systems and equipment shall be maintained and tested in accordance with NFPA 99.
Section 603.4

Electrical Working Space

604.3 603.4 Working space and clearances clearance. A working space of not less than 30 inches (762 mm) in width, 36 inches (914 mm) in depth and 78 inches (1981 mm) in height shall be provided in front of electrical service equipment. Where the electrical service equipment is wider than 30 inches (762 mm), the minimum working space shall be not less than the width of the equipment. Storage of materials shall not be located within the designated working space.

Exceptions (Deleted)
Section 603.5.1.1
Relocatable Power Taps Healthcare

603.5.1.1 Listing in Group I-2 occupancies and ambulatory care facilities. In Group I-2 occupancies and ambulatory care facilities, relocatable power taps shall be listed in accordance with 1363—2018 except under the following conditions:

1. In Group I-2, Condition 2 occupancies, relocatable power taps providing power to patient care-related electrical equipment in the patient care vicinity, as defined by NFPA 99, shall be listed in accordance with 1363A—2014 or 60601-1—2003.

2. In Group I-2, Condition 1 facilities, in care recipient rooms using line-operated patient care-related electrical equipment, relocatable power taps in the patient care vicinity, as defined by NFPA 99, shall be listed in accordance with 1363A—2014 or 60601-1—2003.

3. In ambulatory care facilities, relocatable power taps providing power to patient care-related electrical equipment in the patient care vicinity, as defined by NFPA 99, shall be listed in accordance with 1363A—2014 or 60601-1—2003.
Section 603.5.2
Relocatable Power taps & Current Taps

604.4.2 603.5.2 Application and use Power supply.

Relocatable power taps and current taps shall be directly connected to a permanently installed receptacle.

Exceptions:

1. Where approved for use in a Group A occupancy or in a meeting room in a Group B occupancy, not more than five relocatable power taps shall be permitted to be connected together or connected to an extension cord for temporary use to supply power to electronic equipment.

2. Current taps and relocatable power taps shall not be required to connect directly to a permanently installed receptacle outlet where used for 90 days or less for the purpose of testing the performance of such devices.
Section 604.5.4
Storage Elevator Lobbies

604.5.4 Storage within elevator lobbies. Where hoistway opening protection is required by Section 3006.2 of the International Building Code, elevator lobbies shall be maintained free of storage.
Section 604.5.5
Storage in Elevators

**604.5.5 Storage.** Storage is prohibited in elevator cars or elevator machine rooms.

**Exceptions:**

1. Blankets used for protection of elevator cab walls during construction or renovation.
2. Materials necessary for the operation and maintenance of the elevator equipment.
Section 605.4.2
Fuel Oil Quantity Limits

605.4.2.2 Quantity limits. One or more fuel oil storage tanks containing Class II or III combustible liquid shall be permitted in a building. The aggregate capacity of all tanks shall not exceed the following:

1. 660 gallons (2498 L) in unsprinklered buildings, where stored in a tank complying with UL 80, UL 142 or UL 2085.

2. 1,320 gallons (4996 L) in buildings equipped with an automatic sprinkler system in accordance with Section 903.3.1.1, where stored in a tank complying with UL 142. The tank shall be listed as a secondary containment tank, and the secondary containment shall be monitored visually or automatically.

3. 3,000 gallons (11,356 L) in buildings equipped with an automatic sprinkler system in accordance with Section 903.3.1.1, where stored in protected above-ground tanks complying with UL 2085 and Section 5704.2.9.7 and the room is protected by an automatic sprinkler system in accordance with Section 903.3.1.1 of this code. The tank shall be listed as a secondary containment tank, as required by UL 2085, and the secondary containment shall be monitored visually or automatically.
Section 608.1.2
Ammonia Standards

605.1.2 608.1.2 Ammonia refrigeration. Refrigeration systems using ammonia refrigerant and the buildings in which such systems are installed shall comply with IIAR 2 for system design and installation; IIAR 6 for inspection, testing and maintenance; and IIAR 7 for operating procedures. Decommissioning of ammonia refrigeration systems shall comply with IIAR 8, and engineering practices for existing ammonia refrigeration systems shall be in accordance with IIAR 9.
Section 610
Dryer Exhaust Systems

610.1 Clothes dryer exhaust duct systems. Clothes dryer exhaust duct systems shall be in accordance with Sections 610.1.1 and 610.1.2.

• 610.1.1 Installation. Clothes dryer exhaust duct systems shall be installed in accordance with the International Mechanical Code or the International Fuel Gas Code, and the manufacturer's installation instructions.

• 610.1.2 Maintenance. The lint trap, mechanical and heating components, and the exhaust duct system of a clothes dryer shall be maintained in accordance with the manufacturer's operating instructions to prevent the accumulation of lint or debris that prevents the exhaust of air and products of combustion.
2021 IFC Chapter 7

FIRE AND SMOKE PROTECTION FEATURES
Section 703.2
Repair of Penetrations

703.2 Repair of Penetrations. Where damaged, materials used to protect membrane- and through-penetrations shall be replaced or restored with materials or systems that meet or exceed the code requirements applicable at the time when the assembly was constructed, remodeled or altered.
Section 704.2
Repair of Joints and Voids

704.2 Repair of Joints and Voids. Where damaged, materials used to protect joints and voids shall be replaced or restored with materials or systems that meet or exceed the code requirements applicable at the time when the assembly was constructed, remodeled or altered.
Section 708
Spray & Intumescent Fire-Resistant Materials

708.1 Maintaining protection. Where required when the building was originally permitted and constructed, spray fire-resistant materials and intumescent fire-resistant materials shall be visually inspected to verify that the materials do not exhibit exposure to the substrate.
2021 IFC Chapter 8

INTERIOR FINISH, DECORATIVE MATERIALS AND FURNISHINGS
Section 806.1.4
Treatment Natural Cut Trees

806.1.4 Fire-retardant treatments for natural cut trees. Where fire-retardant treatments are applied to natural cut trees, the fire-retardant treatment shall be tested by an approved agency and shall comply with both Test Method 1 and Test Method 2 of ASTM E3082.
2021 IFC Chapter 9

FIRE PROTECTION AND LIFE SAFETY SYSTEMS
Sections 903.2.4.2 & 903.2.9.3
Protection of Distilleries and Bulk Storage

903.2.4.2 Group F-1 Distilled Spirits. An automatic sprinkler system shall be provided throughout a Group F-1 fire area used for the manufacture of distilled spirits.

903.2.9.3 Group S-1 Distilled spirits or wine. An automatic sprinkler system shall be provided throughout a Group S-1 fire area used for the bulk storage of distilled spirits or wine.
Sprinklers Upholstered Furniture
Group F-1

903.2.4 Group F-1. An automatic sprinkler system shall be provided throughout all buildings containing a Group F-1 occupancy where one of the following conditions exists:

1. A Group F-1 fire area exceeds 12,000 square feet (1115 m²).
2. A Group F-1 fire area is located more than three stories above grade plane.
3. The combined area of all Group F-1 fire areas on all floors, including any mezzanines, exceeds 24,000 square feet (2230 m²).
4. A Group F-1 occupancy used for the manufacture of upholstered furniture or mattresses exceeds 2,500 square feet (232 m²).

903.2.4.3 Group F-1 upholstered furniture or mattresses. An automatic sprinkler system shall be provided throughout a Group F-1 fire area that exceeds 2,500 square feet (232 m²) used for the manufacture of upholstered furniture or mattresses.
903.2.7 Group M. An automatic sprinkler system shall be provided throughout buildings containing a Group M occupancy where one of the following conditions exists:

1. A Group M fire area exceeds 12,000 square feet (1115 m²).

2. A Group M fire area is located more than three stories above grade plane.

3. The combined area of all Group M fire areas on all floors, including any mezzanines, exceeds 24,000 square feet (2230 m²).

4. A Group M occupancy used for the display and sale of upholstered furniture or mattresses exceeds 5,000 square feet (464 m²).

903.2.7.2 Group M upholstered furniture or mattresses. An automatic sprinkler system shall be provided throughout a Group M fire area where the area used for the display and sale of upholstered furniture or mattresses exceeds 5,000 square feet (464 m²).
903.2.9 Group S-1. An automatic sprinkler system shall be provided throughout all buildings containing a Group S-1 occupancy where one of the following conditions exists:

1. A Group S-1 fire area exceeds 12,000 square feet (1115 m²).
2. A Group S-1 fire area is located more than three stories above grade plane.
3. The combined area of all Group S-1 fire areas on all floors, including any mezzanines, exceeds 24,000 square feet (2230 m²).
4. A Group S-1 fire area used for the storage of commercial motor vehicles where the fire area exceeds 5,000 square feet (464 m²).
5. A Group S-1 occupancy used for the storage of upholstered furniture or mattresses exceeds 2,500 square feet (232 m²).

903.2.9.4 Group S-1 upholstered furniture and mattresses. An automatic sprinkler system shall be provided throughout a Group S-1 fire area where the area used for the storage of upholstered furniture or mattresses exceeds 2,500 square feet (232 m²).

Exception: Self-service storage facilities no greater than one story above grade plane where all storage spaces can be accessed directly from the exterior.
Section 903.2.10
Group S-2 Open Parking Garage

903.2.10 Group S-2 enclosed parking garages. An automatic sprinkler system shall be provided throughout buildings classified as enclosed parking garages in accordance with Section 406.6 where either where any of the following conditions exists:

1. Where the fire area of the enclosed parking garage in accordance with Section 406.6 of the International Building Code exceeds 12,000 square feet (1115 m²).

2. Where the enclosed parking garage in accordance with Section 406.6 of the International Building Code is located beneath other groups.

   Exception: Enclosed parking garages located beneath Group R-3 occupancies.

3. Where the fire area of the open parking garage in accordance with Section 406.5 of the International Building Code exceeds 48,000 square feet (4460 m²)
Section 903.3.1.2
NFPA 13R limitations

903.3.1.2 NFPA 13R sprinkler systems. Automatic sprinkler systems in Group R occupancies up to and including four stories in height in buildings not exceeding 60 feet (18 288 mm) in height above grade plane shall be permitted to be installed throughout in accordance with NFPA 13R where the Group R occupancy meets all of the following conditions:

1. Four stories or less above grade plane.
2. The floor level of the highest story is 30 feet (9114 mm) or less above the lowest level of fire department vehicle access.
3. The floor level of the lowest story is 30 feet (9114 mm) or less below the lowest level of fire department vehicle access.

The number of stories of Group R occupancies constructed in accordance with Sections 510.2 and 510.4 shall be measured from the horizontal assembly creating separate buildings grade plane.
Section 907.2.10
Self Storage Fire Alarm

907.2.10 Group S. A manual fire alarm system that activates the occupant notification system in accordance with Section 907.5 shall be installed in Group S public- and self-storage occupancies three stories or greater in height for interior corridors and interior common areas. Visible notification appliances are not required within storage units.

Exception: Manual fire alarm boxes are not required where the building is equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1, and the occupant notification appliances will activate throughout the notification zones upon sprinkler water flow.
Section 907.5.2.1.3
Low Frequency Signal

907.5.2.1.3 Audible signal frequency in Group R-1 and R-2 sleeping rooms. Audible signal frequency in Group R-1 and R-2 occupancies shall be in accordance with Sections 907.5.2.1.3.1 and 907.5.2.1.3.2.

907.5.2.1.3.1 Fire alarm system signal. In sleeping rooms of Group R-1 and R-2 occupancies, the audible alarm activated by a fire alarm system shall be a 520-Hz low-frequency signal complying with NFPA 72.

907.5.2.1.3.2 Smoke alarm signal in sleeping rooms. In sleeping rooms of Group R-1 and R-2 occupancies that are required by Section 907.2.8 or 907.2.9 to have a fire alarm system, the audible alarm signal activated by single- or multiple-station smoke alarms in the dwelling unit or sleeping unit shall be a 520-Hz signal complying NFPA 72.

Where a sleeping room smoke alarm is unable to produce a 520-Hz signal, the 520-Hz alarm signal shall be provided by a listed notification appliance or a smoke detector with an integral 520-Hz sounder.
2021 IFC Chapter 11

CONSTRUCTION REQUIREMENTS FOR EXISTING BUILDINGS
Section 1103.5.4
High-Rise Sprinkler Trigger

1103.5.4 High-rise buildings. Where Appendix M has not been adopted, existing high-rise buildings that do not have a previously approved fire sprinkler system shall be equipped with an automatic sprinkler system in accordance with Section 903.3.1.1 when any of the following conditions apply:

1. The high-rise building has an occupied floor located more than 120 feet above the lowest level of fire department vehicle access.

2. The high-rise building has occupied floors located more than 75 feet and not more than 120 feet above the lowest level of fire department vehicle access and the building does not have at least two interior exit stairways complying with Section 1104.10 that are separated from the building interior by fire assemblies having a fire-resistance rating of not less than 2-hours with opening protection in accordance with Table 716.1(2).

3. The high-rise building has occupied floors located more than 75 feet and not more than 120 feet above the lowest level of fire department vehicle access and the building does not have a fire alarm system that includes smoke detection in mechanical equipment, electrical, transformer, telephone equipment and similar rooms; corridors; elevator lobbies; and at doors penetrating interior exit stairway enclosures.

Building owners shall file a compliance schedule with the fire code official not later than 365 days after receipt of a written notice. The compliance schedule shall not exceed 12 years for completion of the automatic sprinkler system retrofit.
2021 IFC Chapter 12

ENERGY SYSTEMS
Section 1203.1.2
Fuel Line Protection

1203.1.2 Fuel line piping protection. Fuel lines supplying a generator set inside a building shall be separated from areas of the building other than the room the generator is located in by an approved method, or an one of the following methods:

1. A fire-resistant pipe-protection system that has been tested in accordance with UL 1489. The system shall be installed as tested and in accordance with the manufacturer's installation instructions, and shall have a rating of not less than 2 hours. Where the building is protected throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1, the required rating shall be reduced to 1 hour.

2. An assembly that has a fire-resistance rating of not less than 2 hours. Where the building is protected throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1, the required fire-resistance rating shall be reduced to 1 hour.

3. Other approved methods.
Section 1204
Portable Generators

1204.1 Portable generators.
1204.2 Listing.
1204.3 Operation and maintenance.
1204.4 Grounding.
1204.5 Operating locations.
1204.6 Cords and wiring.
1204.7 Connections to premise wiring.
1204.8 Refueling.
1204.9 Storage and repair.
1204.10 Fire extinguisher.
Section 1205.3.3
Smoke Ventilation

**1204.3.3 1205.3.3 Smoke ventilation.** The solar installation shall be designed to meet the following requirements:

1. Where nongravity-operated smoke and heat vents occur, a pathway not less than 4 feet (1219 mm) wide shall be provided bordering all sides.
2. Smoke ventilation options between array sections shall be one of the following: Where gravity-operated dropout smoke and heat vents occur, a pathway not less than 4 feet (1290 mm) wide on not less than one side.
   2.1 A pathway not less than 8 feet (2438 mm) wide.
   2.2 Where gravity-operated dropout smoke and heat vents occur, a pathway not less than 4 feet (1290 mm) wide on not less than one side.
3. Smoke ventilation options between array sections shall be one of the following:
   3.1 A pathway not less than 8 feet (2438 mm) wide.
   2.33.2 A pathway not less than 4 feet (1290 mm) wide bordering 4-foot by 8-foot (1290 mm by 2438 mm) venting cutouts every 20 feet (6096 mm) on alternating sides of the pathway.
Section 1206.14
Fuel Cell Vehicle Power

1206.14 Group R-3 and R-4 fuel cell vehicle energy storage system use. The temporary use of the dwelling unit owner or occupant's fuel cell-powered electric vehicle to power a Group R-3 or R-4 dwelling while parked in an attached or detached garage or outside shall comply with the vehicle manufacturer's instructions and NFPA 70.
Section 1207
Energy Storage Systems

• Substantial rewrite from Section 1206 in 2018 IFC
• Aligned with NFPA 855
• Differing applications more clearly addressed.
  • Within buildings – dedicated/nondedicated
  • Outdoor installations
  • Exterior wall installations
  • Roof top
  • Opening parking garage
  • Mobile ESS
• Commissioning, decommissioning, maintenance now included
• 50 kWh groups max separated by 3 ft remains
PART 4

SPECIAL OCCUPANCIES AND OPERATIONS
2021 IFC Chapter 22

COMBUSTIBLE DUST-PRODUCING OPERATIONS
2021 IFC Chapter 22
Rewrite

• More detail provided for dust explosion prevention and explosion screening
• More practical information for enforcement
• Stronger emphasis on maintenance and need for a maintenance program
• Emergency response plan required
• Training programs required for employees
• Standard list now includes
  • NFPA 68 - deflagration venting
  • NFPA 77 - static electricity
2021 IFC Chapter 33

FIRE SAFETY DURING CONSTRUCTION & DEMOLITION
Section 3303
Owners’s Responsibilities
• Moved from Section 3008
• Site safety plan now required
• Features of such plan prescribed
• Site safety director required to be provided by owner
• Daily fire safety inspection required with enforcement mechanism
• Training required for site safety directors
• Special requirements for Tall wood construction over 6 stories
Section 3303.1.1
Site Safety Plan

1. **Name and contact information of site safety director.**
2. **Documentation of the training of the site safety director and fire watch personnel.**
3. **Procedures for reporting emergencies.**
4. **Fire department vehicle access routes.**
5. **Location of fire protection equipment, including portable fire extinguishers, standpipes, fire department connections and fire hydrants.**
6. **Smoking and cooking policies, designated areas to be used where approved, and signage locations in accordance with Section 3305.8.**
Section 3303.1.1
Site Safety Plan

Cont.

7. Location and safety considerations for temporary heating equipment.
8. Hot work permit plan.
9. Plans for control of combustible waste material.
10. Locations and methods for storage and use of flammable and combustible liquids and other hazardous materials.
12. Changes that affect this plan.
13. Other site-specific information required by the fire code official.
Section 3303.3
Daily FS Inspection

1. Any contractors entering the site to perform hot work each day have been instructed in the hot work safety requirements in Chapter 35, and hot work is performed only in areas approved by the site safety director.

2. Temporary heating equipment is maintained away from combustible materials in accordance with the equipment manufacturer's instructions.

3. Combustible debris, rubbish and waste material is removed from the building in areas where work is not being performed.

4. Temporary wiring does not have exposed conductors.

5. Flammable liquids and other hazardous materials are stored in locations that have been approved by the site safety director when not involved in work that is being performed.
Section 3303.3
Daily FS Inspection

Cont.

6. **Fire apparatus access roads required by Section 3311 are maintained clear of obstructions that reduce the width of the usable roadway to less than 20 feet (6096 mm).**

7. **Fire hydrants are clearly visible from access roads and are not obstructed.**

8. **The location of fire department connections to standpipe and in-service sprinkler systems are clearly identifiable from the access road and such connections are not obstructed.**

9. **Standpipe systems are in service and continuous to the highest work floor, as specified in Section 3313.1.**

10. **Portable fire extinguishers are available in locations required by Sections 3315 and 3318.3.**
Section 3904.2
Systems and Equipment

3904.2 Systems and equipment. Systems or equipment used for the extraction of oils from plant material shall be listed.....performing the analysis comply with either Section 3904.2.1 or 3904.2.2.

3904.2.1 Listings. (UL 1389)

3904.2.2 Approvals. (Technical report)
2021 IFC Chapter 40
Storage of Distilled Spirits and Wines

• New Chapter for storage only

• Such storage not group H complying with this chapter

  **IBC 307.1.1 Uses other than Group H.** An occupancy that stores, uses or handles hazardous materials as described in one or more of the following items shall not be classified as Group H, but shall be classified as the occupancy that it most nearly resembles.

  1 through 17. No change to text...

  18. Distilling or brewing of beverages conforming to the requirements of the *International Fire Code*.

  19. The storage of beer, distilled spirits and wines in barrels and casks conforming to the requirements of the *International Fire Code*.

• Storage Group S-1

• Distilling process Chapter 50 and 57 Group F-1
2021 IFC Chapter 40
Storage of Distilled Spirits and Wines

4001 GENERAL
4002 DEFINITIONS
4003 PRECAUTIONS AGAINST FIRE
4004 STORAGE
4005 FIRE PROTECTION
4006 SIGNAGE
PART 5

HAZARDOUS MATERIALS
2021 IFC Chapter 50

HAZARDOUS MATERIALS
Section 5001.1
Scope

- Revised to align with Section 5701.2 dealing with non applicability.

- Exceptions 12-17 added to Section 5001.1

  12. Flammable liquids for Fuel dispensing, repair garages, airports and marinas – Chapter 23
  13. Fuel oil connected to oil-burning equipment – Section 603
  14. Aerosol products – Chapter 51
  15. Flammable & Combustible liquids with no fire point
  16. Flammable & combustible liquids flash point > 95in water miscible solution > 80 % does not sustain combustion
  17. Commercial cooking oil – Section 608 and NFPA 30
Section 5001.1
Scope

• Section 5701.2 added items 12 and 13

  12. Application and release of pesticides and agricultural products – in accordance with manufacturer's instructions
  13. Off side transport of hazardous materials
Section 5601.1.3

Scope

5601.1.3 Fireworks. The possession, manufacture, storage, sale, handling and use of fireworks are prohibited.

Exceptions:
1. Through 3 (No changes)
4. The possession, storage, sale, handling and use of specific types of Division 1.4G fireworks where allowed by applicable laws, ordinances and regulations, provided that such fireworks and facilities comply with the 2006 edition of NFPA 1124, CPSC 16 CFR Parts 1500 and 1507, and DOTn 49 CFR Parts 100–185, as applicable for consumer fireworks.
Section 5606.6
Commercial Reloading

5606.6.1 Electrical.
5606.6.2 Exhaust fans.
5606.6.3 Work stations.
5606.6.4 Personnel limits.
5606.6.5 Approved containers.
5606.6.6 Static controls.
5606.6.7 Waste disposal.
5606.6.8 Safety rules.
2021 IFC Chapter 57

FLAMMABLE AND COMBUSTIBLE LIQUIDS
Section 5707
On-Demand Mobile Fueling Operations

5707.1.1 Approval required. Mobile fueling operations shall not be conducted without first obtaining a permit and approval from the fire code official. Mobile fueling operations shall occur only at approved locations. The fire code official is authorized to approve individual locations or geographic areas where mobile fueling is allowed.
Section 5707
On-Demand Mobile Fueling Operations

Fueling vehicles placed in 3 tiers

- Tier 1 – NFPA 385, chassis mounted tanks ≤ 1600 gallons (was 1200)
- Tier 2 – Chassis mounted tanks ≤ 110 Gallons – aggregate 800 gallons (or DOTn weight capacity)
- Tier 3 – aggregate 60 gallons in metal safety cans listed to UL 30 each ≤ 5 gallons
Thank you for participating!
Question & Answer
Thank You

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