2024 IFC Transition from the 2018 IFC
Based on the 2024 International Fire Code®
GOAL & OBJECTIVES

1) Participants should be able to identify significant changes from the 2018 IFC to the 2024 IFC.
2) Participants should be able to identify new chapters in the 2024 IFC.
3) Participants should be able to understand the intent of the changes.
4) Participants should be able to explain the application of the changes.

This course...

1) Participants should be able to identify significant changes from the 2018 IFC to the 2024 IFC.
2) Participants should be able to identify new chapters in the 2024 IFC.
3) Participants should be able to understand the intent of the changes.
4) Participants should be able to explain the application of the changes.
Why Does This Matter?

- Does 3D printing present a hazard?
- Is valet trash collection allowed by the IFC?
- What are the new/revised fire sprinkler requirements?
- What are the current requirements for lithium-ion and lithium metal batteries?
- How can a puzzle room (escape room) comply with the egress requirements?

COURSE OUTLINE

- Course will flow in the general format of the 2024 IFC
- Chapter 1 to Appendix O
- No revisions to Part VI – Referenced Standards
- Code sections and chapters without significant changes are not included

Part I
Administrative
Chapters 1 – 2
104 Duties & Powers of the Fire Code Official

- Section completely rewritten
- Same text in all I-Codes, so the codes are consistent when dealing with an alternate method that affects multiple codes
- Includes technical assistance and peer review
- Alternative methods clarified and guidance added for review and approval

104.2 Determination of Compliance

- Three paths to demonstrate compliance with the code:
  1. Comply with the specific requirements
  2. Submit a Request for use of an Alternative Method or Materials.
  3. Where specific code requirements cannot be met, the Fire Code Official (FCO) has the authority to modify code requirements.

104.2.3.4 Equivalency criteria

An alternative material, design or method of construction shall, for the purpose intended, be not less than the equivalent of that prescribed in this code with respect to all of the following, as applicable:

1. Quality
2. Strength
3. Effectiveness
4. Durability
5. Safety, other than fire safety
6. Fire safety

- Request for approval of an alternative method can be submitted for any code requirement
- Alternative must show equivalency in 6 characteristics
- Safety is listed separately from Fire Safety
### 104.4 Modifications

Where there are practical difficulties involved in carrying out the provisions of this code, the fire code official shall have the authority to grant modifications in accordance with Section 104.2.4.1 or 104.2.4.2.

- Modifications are different than alternative methods
- The FCO is authorized to modify the code requirements where there are practical difficulties in complying with the code
- §104.2.4.2 addresses modifications that are necessary during, or in preparation for, a natural disaster
  - Temporary; end date established
  - Pandemic: dining tables in the street

### 104.7 Official Records

- Whether approved or disapproved, written response is required for:
  - Plans
  - Request to use an alternative method
  - Request for modification
- Records retained for 5 years or for as long as the structure or activity remains in existence

### 202 Change of Occupancy

Either of the following shall be considered as a change of occupancy where this code requires a greater degree of safety, accessibility, structural strength, fire protection, means of egress, ventilation or sanitation than is existing in the current building or structure:

1. Any change in the occupancy classification of a building or structure.
2. Any change in the purpose of, or a change in the level of activity within, a building or structure.

- A change of occupancy occurs when a new use or activity requires a greater degree of safety features
- Either the occupancy classification is changed, OR
- The occupancy classification remains the same, but the new activity requires additional safety provisions
**202 Flammable Gas Definition**

A material which is a gas at 68°F or less at 14.7 psia subdivided as follows:

1. Category 1A. A gas that meets either of the following:
   - 1.1. A gas which is ignitable at 14.7 psia when in a mixture of 13% or less by volume with air; or
   - 1.2. A gas with a flammable range at 14.7 psia with air of not less than 12%, regardless of the lower limit, unless data shows compliance with Category 1B.

2. Category 1B. A gas which meets the flammability criteria for Category 1A, is not pyrophoric or chemically unstable, and meets one of the following:
   - 2.1. A lower flammability limit of more than 6% by volume of air; or
   - 2.2. A fundamental burning velocity of less than 3.9 inches/second.

The limits specified shall be determined at 14.7 psi and a temperature of 68°F in accordance with ASTM E681.

Where not otherwise specified, the term "flammable gas" includes both Category 1A and 1B.

- Flammable gas split into 2 categories
- Traditional flammable gas (CNG, hydrogen)
- Slow flame spread (difluoromethane, A2L refrigerants)
- Correlates with Global Harmonization System (GHS)

**202 Occupiable Roof**

An exterior space on a roof that is designed for human occupancy, other than maintenance or repair, and which is equipped with a means of egress system meeting the requirements of this code.

- Occupiable roof is **not** considered a floor
- Occupiable roof does **not** change the building height
- Occupiable roof must meet egress requirements applicable to the occupancy classification
- Occupiable roof must meet all egress and accessibility requirements
- Elevator required if the occupiable roof is above the 3rd floor above the LED

**203 Occupancy Classification**

- Occupancy classifications moved from definitions to §203
- Text duplicated out of IBC Ch 3
203.10 Storage of Alcoholic Beverages

- Storage of beverages with an alcohol content >20% is Group S-1
- Storage of beverages with an alcohol content ≤20% is Group S-2

Part II
General Safety Provisions
Chapters 3 – 4

304.1.1 Valet Trash

- Valet trash collection is an intermediary service that removes trash or recycling materials placed outside of dwelling units or sleeping units for final collection
  - Includes collection of recyclable materials
  - Valet trash collection is only allowed where specifically approved
  - No permit
  - Only guidance/requirements are in Appendix O
304.3 Trash Containers
- Requirements for containers for combustible rubbish are revised
- Containers >40 gallons must be of non-combustible materials or low heat release materials
  - Peak heat release ≤300 kW/m²
  - Exceptions
    - Dumpsters in sprinklered areas
    - Containers in dedicated storage buildings of Type I or IIA construction

304.3.6 Waste/Linen Containers – Group I
- Waste and linen containers in Groups I-1, I-2 and I-3 and ambulatory care facilities must be of noncombustible materials or low heat release materials
- Containers >32 gallons must be in waste or linen collection rooms
  - Incidental use
    - Waste or linen collection rooms >100 ft² must be of 1-HR construction or sprinklered

304.3.7 Waste Containers – Group R-2
- Waste containers ≥20 gallons in Group R-2 college and university dormitories must be of noncombustible materials or low heat release materials
- Portable waste containers >32 gallons must be in waste collection rooms
  - Incidental use
    - Waste or linen collection rooms >100 ft² must be of 1-HR construction or sprinklered
314.4 Indoor Vehicle Display

- Ignition batteries must be disconnected if required by FCO.
- Fuel tanks cannot exceed:
  - 5 gallons for Class I, II or III liquid fuel
  - ½ tank or 6.6 gallons for LPG
  - ½ tank or 630 ft³ for CNG
  - ½ tank or 2,000 ft³ for hydrogen

317.2 Vegetative and Landscaped Roofs

- IBC covers design and construction
  - New standard – ANSI/SPRI VF-1 External Fire Design for Vegetative Roofs
  - Separations and maximum areas did not change, but are now in standard
- IFC covers maintenance
  - Maintenance plan
  - Removal of dead material

319 Additive Manufacturing

- Industrial additive manufacturing
  - Utilize combustible powders or metals, an inert gas supply, a combustible dust collection system, or creates a hazardous (classified) location area or zone outside of the equipment
- Non-industrial additive manufacturing
  - 3D printing operations that do not create a hazardous (classified) location area outside of the equipment, and do not utilize an inert gas supply or a combustible dust collection system
319.2 Nonindustrial Additive Manufacturing

- No permit required
- Must be listed
- Self-contained unit
- ≤30 L of production material

319.3 Industrial Additive Manufacturing

- Operational permit required
- Listed to UL 2011
- Use of gases must comply with Ch 53
- FCO can require technical assistance and require an evaluation report
- Only allowed in manufacturing facilities (Group F)
- If the quantities of hazardous materials exceed the maximum allowable quantity per control area, the room or building will become Group H

320 Storage of Lithium Batteries

- Storage of lithium-ion and lithium metal batteries regulated
- Exceptions:
  1. New or refurbished batteries installed in equipment, devices or vehicles they are designed to power
  2. New or refurbished batteries packed for use with equipment, devices or vehicles they are designed to power
  3. Batteries in original retail packaging with a rating ≤300 watt-hours for lithium-ion or contain ≤25 grams of lithium metal for lithium metal batteries
320 Storage of Lithium Batteries

- Storage of lithium-ion and lithium metal batteries regulated
- Exceptions:
  4. Temporary storage of batteries or battery components during the battery manufacturing process prior to completion of final quality control checks
  5. Temporary storage of batteries during the vehicle manufacturing or repair process

320 Storage of Lithium Batteries

- Permit required for lithium battery storage ≥ 15 ft³
- Fire safety and evacuation plan required
- 3 storage configuration options
  - A single facility may use more than one storage configuration
  1. Containers
  2. Indoor storage room
  3. Outdoor storage room

322.4.1 Battery Storage in Containers

- Maximum of 15 ft³ of lithium-ion or lithium metal batteries can be stored in containers
- Containers shall be:
  - Open-top with a capacity of ≤ 7.5 ft³
  - Containers of noncombustible materials or approved for battery collection
  - Groups of containers ≤ 7.5 ft³
  - Groups of containers separated by ≥ 3' of open space, OR ≥ 10' of space that contains combustible materials
  - Containers shall be located ≥ 5' from exits or exit access doors
320.4.2.2 Indoor Battery Storage Areas

- In mixed-use buildings, the battery storage area shall be separated from the remainder by 2-HR fire barriers

2-HR fire barrier

2-HR separation NOT required IF:
1. Batteries are stored in approved prefabricated portable structure
2. Only new batteries and they are in packaging designed to contain a fire in the package

320.4.2.1 Technical Opinion and Report

- Technical opinion and report to evaluate the fire and explosion risks associated with the indoor storage of lithium-ion and lithium metal batteries and evaluate:
  - The potential for deflagration of flammable gases released during a thermal runaway event
  - The basis of design for sprinkler system or other approved fire suppression system
  - Sprinkler design shall be based on full-scale fire testing or another approved method of demonstrating sufficiency of the recommended design
320.4.2 Indoor Battery Storage Areas

- Indoor battery storage areas for lithium-ion or lithium metal batteries must be protected with:
  - Sprinklers or fire-extinguishing system
  - Design based on the technical opinion and report
  - Fire detection and alarm system
  - Detection shall be air-aspirating smoke detection or radiant energy-sensing fire detection
  - Explosion control when required in the technical opinion and report

320.4.2.6 Reduced Requirements for Indoor Storage

- Where the state of charge is demonstrated to be ≤30% for lithium-ion or lithium metal batteries, the following protection features are not required:
  - Technical opinion and report
  - Separation with 2-HR construction
  - Explosion control
  - Fire-extinguishing system and fire alarm system still required

320.4.3.1 Outdoor Battery Storage Areas

- Outdoor storage of lithium-ion or lithium metal batteries shall be:
  - ≥20’ from any building, lot line, public street, public alley, public way or means of egress
  - Separation can be reduced to 3’ if separated by a 2-HR fire-resistance rated assembly without openings or penetrations and extending ≥5’ above and to the sides of the battery storage area
  - Separation can be reduced to 3’ if batteries are contained in approved prefabricated portable structures providing a complete 2-HR fire-resistance rated enclosure
320.4.3.2 Outdoor Battery Storage Areas

- Outdoor storage shall be in piles \( \leq 900 \text{ ft}^2 \)
- Piles shall not exceed 10' in height
- Piles shall be separated by \( \geq 10' \) of open space

Shop

320.4.3.2 Outdoor Battery Storage Areas

- The size, separation or protection requirements for outdoor storage areas for lithium-ion and lithium metal batteries are not affected by a roof covering or weather protection as provided in IBC §414.6.1
- Outdoor storage areas shall be protected with a fire detection and alarm system with radiant energy-sensing detection
- Prefabricated portable structures for storage of batteries shall be treated as outdoor storage areas

321 Artificial Combustible Vegetation

- Regulates artificial combustible vegetation \( >6' \) in height and permanently installed outdoors \( \leq 5' \) of a building or on the roof of a building
  - Exception: Artificial decorative vegetation \( >30' \) from the exterior wall of a building
  - Flame retardant and tested to NFPA 701 or NFPA 289
322 Powered Micromobility Devices

- Micromobility devices powered by lithium-ion or lithium metal batteries are regulated
- Battery charging areas
  - Chargers must be listed and from original equipment manufacturer
  - Extension cords and power taps prohibited
  - Removed batteries shall not be stacked
  - Removed batteries separated ≥18" while charging
  - Fire alarm system required

Exceptions:
1. Devices for personal use in residential occupancies
2. Charging performed by the owner in any occupancy

Part III
Building and Equipment Design Features
Chapters 5 – 12

508.1 Fire Command Center

- Fire command center now required in Group F-1 and S-1 where the building footprint >500,000 ft²
- Fire command center must be a ≥96 ft² with the smallest dimension ≥8"
202 Definitions

Emergency Responder Communications Enhancement System (ERCES). An infrastructure solution installed within a building to enhance the communications capabilities for first responders that utilizes solutions such as a signal booster, voting receiver, base station or other technology capable of enhancing the radio frequency (RF) to ensure effective public safety communications.

- New definition
- Revised to include all methods of communications
- Same concept and system

510.4.1 Signal Strength

- ERCES provisions are expanded to include usable communications for all technologies available
- Required downlink signal strength for narrowband analog, digital or wideband LTE signals is a minimum Delivered Audio Quality (DAQ) of 3.0
  - Downlink signal is no longer required to meet -95 dBm
- Bit Error Rate (BER) or Signal-to-Interference-Plus-Noise Ratio (SINR) measurements can be used for analog or digital signals

DAQ 3.0 = speech is understandable with slight effort, with occasional repetition due to noise or distortion

510.4.2 Interference

- Equipment for ERCES must be listed to UL 2624
- Must be provided with oscillation detection
- Signal boosters and RF-emitting devices must have built-in oscillation detection and control capability
604.7 Storage in Elevator Spaces

- Storage is specifically prohibited in:
  - Elevator lobbies where hoistway opening protection is required
  - Elevator machine rooms
  - Elevator cars

Exceptions for:
1. Blankets for protection of elevator cab during construction
2. Materials necessary of operation and maintenance of elevator equipment

604.5.1 Fire Service Access Elevators

- Storage and furniture are prohibited in elevator lobbies for:
  - Fire service access elevators
  - Occupant evacuation elevators

605.4.2.2 Fuel Oil Storage Tanks

- Fuel oil storage tanks containing Class II or III combustible liquids are permitted, provided:

  - Quantity is not counted in the MAQ
608.1.1 CO₂ Mechanical Refrigeration

- Mechanical refrigeration systems regulated in the 2024 IFC are those with a refrigerant that is toxic, highly toxic, flammable or ammonia
- Mechanical refrigeration system with CO₂ refrigerant are now included in the IFC
- CO₂ systems must comply with IIAR CO₂ Safety Standard for Closed-Circuit Carbon Dioxide Refrigeration Systems

608.9 Ammonia Mechanical Refrigeration

- Provisions for ammonia mechanical refrigeration systems are removed from the IFC
- Now found in the referenced standards IIAR 2, IIAR 6, IIAR 7, IIAR 8 and IIAR 9
- Issues of refrigerant detection, labeling, ventilation, discharge, and treatment, if any, are contained in the standards

608.12 Storage of Refrigerants

- Many new refrigerants are classified as flammable gas
- Temporary storage of refrigerants during maintenance and repair of refrigeration systems is exempted from the general storage requirements
- Temporary storage is allowed where the refrigerant is removed from the system and will be reinstalled once the work is complete
701.6 Fire-resistance-rated Construction

- IFC includes requirements to maintain the fire-resistance rating of Type IVA and IVB construction

701.6 Fire-resistance-rated Construction

- IBC now includes
  - Type IVA construction
    - Exterior walls protected with 40-min fire resistance
    - Interior walls protected with 80-min fire resistance
  - Type IVB construction
    - Exterior walls protected with 40-min fire resistance
    - Interior walls protected with 80-min fire resistance
    - ≤40% of walls and ≤40% of ceilings can be exposed
  - Type IVC construction
    - No added fire-resistance

1 layer of ⅝" Type X gypsum wallboard = 40 minutes

705.2.7 Rolling Steel Fire Door Testing

- Rolling steel fire doors have unique requirements necessitating inspection and maintenance to be performed by trained personnel
- Annual testing is required
- Critical to reset the tension properly for rolling fire doors
  - Drop speed between 6"/second and 24"/second
- Records must be maintained
708.1 Sprayed Fire-Resistant Materials

- Intumescent fire-resistant materials and spray applied fire-resistant materials must be visually inspected and maintained
- §701.6 requires annual inspection

903.2 Sprinklers: Telecommunication Batteries

- Batteries for telecommunications equipment are no longer exempt from fire sprinkler requirements
- If §1207 requires fire sprinklers for the ESS system, then fire sprinklers must be installed, and the exception does not apply
- See §1207.5.5
  - Depends on type of battery and storage capacity

903.2.2, 903.2.7.3 Sprinklers: Lithium Batteries

- Fire sprinkler system required throughout fire areas of Group B for research and development or testing of lithium-ion or lithium metal batteries
- Fire sprinkler system required in the room or space of Group M if required by
  - §320 for collection, storage or display
  - Ch 32 for high-piled storage
903.2.4 Sprinklers: Lithium Batteries

- Fire sprinkler system required throughout the building:
  - Group F-1 for manufacturing of lithium-ion or lithium metal batteries
  - Group F-1 for manufacturing of vehicles powered by lithium-ion or lithium metal batteries
  - Group S-1:
    - Storage of vehicles powered by lithium-ion or lithium metal batteries with fire area >500 ft²
    - Repair of vehicles powered by lithium-ion or lithium metal batteries with fire area >500 ft²

903.2.4.2 Distilled Spirits

- Sprinkler system is required throughout the fire area of Group F-1 used for manufacture of distilled spirits

903.2.9.3 Distilled Spirits

- Sprinkler system is required throughout the fire area of Group S-1 used for bulk storage of distilled spirits or wine

Distilled spirits and wine with an alcohol content of ≤20% would be classified as Group S-2
903.2 Upholstered Furniture & Mattresses

- Manufacturing, storage and retail display of upholstered furniture and mattresses requires a sprinkler system if:
  - Group F-1: fire area used for manufacturing >2,500 ft²
  - Group M: fire area used for display and sale >5,000 ft²
  - Group S-1: fire area used for storage >2,500 ft²

Exception for 1-story self-service storage facilities with direct access to each unit from the exterior.

903.2.8.3 Sprinklers: Group R-4

- Fire sprinklers are required in all Group R
- Fire sprinklers are required in Group R-4 Condition 1 and Condition 2
- NFPA 13D allowed in Group R-3 and R-4 Condition 1
- NFPA 13D not allowed in Group R-3 and R-4 Condition 2
- NFPA 13
- NFPA 13R if ≤4 stories above grade plane AND the roof assembly <45' above the LLFDVA

903.2.10 Group S-2 Parking Garage

- Enclosed and open parking garages now have thresholds for the installation of a sprinkler system
- Enclosed parking garage with a fire area >12,000 ft²
- Enclosed parking garages located beneath other occupancies except Group R-3
- Open parking garage with a fire area >48,000 ft²
903.2.10.2 Mechanical-access Parking Garage

- Sprinkler system is required throughout buildings used as a mechanical-access parking garage.
- Engineered design is required for the sprinkler system.

Mechanical-access enclosed parking garage is an enclosed parking garage which employs parking machines, lifts, elevators or other mechanical devices for vehicle moving from and to street level and in which public occupancy in the garage is prohibited in all areas except the vehicle access bay.

903.3.1.1.1 Exempt Sprinkler Locations

- Exceptions 1 & 2 have been combined because there is little differentiation between them.
- Item 1 allows sprinklers to be omitted where the application of sprinkler water can create a serious life or fire hazard.
- NOTE: where sprinklers are omitted in accordance with §903.3.1.1.1, the building is still considered fully sprinklered.

903.3.1.1.3 Sprinklers: Lithium Batteries

- Fire sprinkler design criteria is not readily available to protect lithium-ion or lithium metal batteries.
- Densities change based on individual components, encasement and manufacturer.
- Sprinkler densities to be based on fire tests.
903.3.1.2 NFPA 13R Sprinkler Installations

- Maximum of 4 stories
  - Counted from grade plane
- Maximum height is:
  - Top floor ≤ 30' above LLFDVA for other than Group R-2
  - For Group R-2, roof assembly ≤ 45' above LLFDVA
    - Measured to top of parapet at exterior wall or rise of highest pitched roof

903.4 Sprinkler Alarms

- Local exterior alarm is required for sprinkler systems
  - Audible and visual
  - Not required for 1- and 2-family dwellings
- Electrical supervision required for valves, pumps, tanks, waterflow switches
  - Not required for 1- and 2-family dwellings
  - Not required for limited area sprinkler systems unless the building has a required fire alarm system
- Monitoring is required for sprinkler systems
  - Supervising station or constantly attended location

904.12 Hybrid Fire-extinguishing System

- Hybrid fire-extinguishing systems recognized by the code
  - Do not replace sprinkler system
  - As noted in §904.2.1, are not considered an alternative sprinklers with regard to code modifications
  - Installed in accordance with NFPA 770
  - Consist of water spray and inert gas
904.14.1 Manual Activation Device

- Manual activation device is required for fire-extinguishing systems protecting cooking appliances
- Located 42" to 48" above the floor
- Located 10' to 20' from cooking appliances
- New exception allows the FCO to accept other distances where 10' to 20' is not feasible
  - Must be in path of egress
  - Must be visible

905.5.1 Standpipes: Stages

- Standpipe connection no longer required on stages
- Standpipe connection no longer required on each tier of dressing rooms
- Standpipe connections still required:
  - On each side of the rear of the auditorium
  - On each side of the balcony

907.2.1 Fire Alarm: Group A-5

- Manual fire alarm system is required for all Group A with ≥300 occupants or ≥100 occupants above or below the LED
- System is not required for Group A-5 if:
  - >15,000 occupants
  - PA system with standby power is provided
  - Enclosed spaces ≤10% of the area and ≤1,000 ft²
  - All means of egress are open to the outside
### 907.2 Fire Alarm: Lithium Batteries

- Automatic fire alarm system with air-sampling detection or radiant-energy-sensing detection required throughout the **fire area** in:
  - Group B with research and development or testing of lithium-ion or lithium metal batteries
  - Group F with manufacturing of lithium-ion or lithium metal batteries
  - Group F with manufacturing of vehicles, ESS or equipment powered by lithium-ion or lithium metal batteries
  - Group S with storage of lithium-ion or lithium metal batteries where required by §320

### 907.2 Fire Alarm: Lithium Batteries

- Automatic fire alarm system with air-sampling detection or radiant-energy-sensing detection required throughout the **room or area** in:
  - Group M with storage of lithium-ion or lithium metal batteries where required by §320

### 907.2.10 Public-storage & Self-storage

- Manual fire alarm system required in Group S public- and self-storage facilities ≥3 stories
- Cover interior corridors and interior common areas

- Only 1 manual fire alarm box is required if the building is sprinklered.
- Visible notification not required in storage units.
907.2.11.3 Near Cooking Appliances

- Smoke alarms must be installed ≥10’ from cooking appliances
- Regardless of type smoke alarm
- Exception allows for reduction down to 6’ where necessary to comply with other sections specifying smoke alarm locations

907.5.2.1.3 Audible Alarm Signals

- If Group R-1, R-2 and I-1 is required to install a fire alarm system, the audible alarm signal in sleeping rooms must provide 520 Hz low-frequency signal
  - 6 times more effective in waking young, hearing-impaired and alcohol impaired individuals
  - Not available in smoke alarms

907.5.2.3.3.1 Expansion Capability in R-2

- Fire alarm systems in Group R-2 shall be designed for future visible notification by 1 of the following:
  - Replacement of audible appliances with audible/visible appliances
  - Extension of existing wiring from the unit smoke alarm locations to visible appliances
  - Fire alarm power supply and circuits shall provide ≥5% excess capacity with a single access point to such circuits shall be available on every story
907.6.6.1, 907.6.6.2 Monitoring

- Do It Yourself (DIY) fire alarm devices and Monitor It Yourself (MIY) capabilities are available
- Monitoring of fire alarm systems must be in accordance with NFPA 72
- Monitoring via MIY technology is only allowed where approved by the FCO

907.10 Smoke Alarm Maintenance

- Smoke alarms are required to be tested in accordance with manufacturer’s instructions
- Any smoke alarm shall be replaced when:
  - It fails the operability test
  - It exceeds 10 years after date of manufacture
  - It sounds the end-of-life signal
  - The manufacturing date cannot be determined

908.3 Emergency Alarm & Fire Alarm Interface

- Emergency alarm signal must be different from the fire alarm signal
- Emergency alarm signal is a local alarm with notification at the emergency control station
- Where interconnected to the FACU, it will produce supervisory notification
909.17 Smoke Control System Response

- Transition from normal ventilation to smoke control mode is not instantaneous
- A maximum time period of 90 seconds is stipulated for full transition to operating conditions and notification at the smoke control panel

Table 911.1 Explosion Control

| Class | Explosives | Division 1.1 | Division 1.2 | Division 1.4c | Division 1.5 | Division 1.6 | Dewaxing | Required | Not required | Required | Required
|-------|------------|--------------|--------------|--------------|-------------|-------------|---------|----------|-------------|----------|----------|
|       | Required   | Required     | Required     | Required     | Required    | Required    | Dewaxing | Required | Not required | Required | Required

h. Not required for Category 1B Flammable Gases having a burning velocity not exceeding 3.9 inches per second.
i. Does not apply to consumer fireworks, 1.4G.

912.5 FDC Signs

- Signs on FDCs are clarified
- Lettering ≥1" in height
- Type of systems supplied
- Identify buildings served, if more than 1
- Portion of building served, if not the entire building
- Pressure required if >150 PSI
913.2.2 Electric Circuits for Fire Pumps

- Protection of electric conductors serving fire pumps is already specified in the code
- Option of protection with ≥2” of concrete is added
- NFPA 20 also provides this option
- Protection not required inside separated pump room

914.3.1.2 Water Supply for Fire Pumps

- 2 water supply connections are required for fire pumps in buildings >420’ in height
- New requirement adds Type IVA and IVB buildings >120’ in height to this requirement

914.3.1.1 Standpipe/Sprinkler Riser in High-rise

- In buildings ≤420’ in height, standpipe and sprinkler systems can be supplied by a single riser or express riser within each vertical water supply zone
- Standpipe and sprinkler risers shall be located in interior exit stairways
914.3.1.1 Standpipe/Sprinkler Riser in High-rise

- In buildings >420’ in height, 2 risers shall supply standpipe and sprinkler water within each vertical water supply zone
- Each riser shall serve alternating floors
- Adjacent floors cannot be served by the same riser
- Standpipe and sprinkler risers shall be located in interior exit stairways that are remotely located

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914.7 Special amusement areas

Special amusement areas shall comply with Sections 914.7.1 and 914.7.2.

Exceptions:
1. Special amusement areas that are without walls or a roof and constructed to prevent the accumulation of smoke need not comply with this section.
2. Puzzle rooms provided with a means of egress that is unlocked, readily identifiable and always available are not required to comply with this section.

- Puzzle rooms fall under the definition of special amusement areas
- Puzzle rooms must comply with special amusement area requirements, unless the means of egress is always available and unlocked

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914.7.2 Fire Alarm: Special Amusement Area

- Fire alarm system required in special amusement areas
- Smoke detection throughout
- Emergency voice/alarm communications
- Constantly attended location required to:
  - Monitor alarm
  - Manually activate the EVAC
914.7.2 Fire Alarm: Special Amusement Area

- Activation of 1 smoke detector shall activate an audible and visual alarm in the constantly attended location.
- Activation of 2 smoke detectors, 1 smoke detector with alarm verification, sprinkler waterflow, or the manual device in the constantly attended location shall:
  - Activate prerecorded message
  - Stop conflicting sounds or visual distractions
  - Illuminate the means of egress

- Additionally, in Puzzle Rooms the egress doors shall unlock and open.

915.1 Carbon Monoxide Detection

- CO detection is required in all occupancies other than Groups F, S and U that are not normally occupied.
- Detection required if a CO source exists:
  - Buildings supplied by a CO-producing forced-air furnace
  - Buildings with attached private garages
  - Buildings that have a CO-producing vehicle used within the building
  - Buildings with a CO source

- CO source is a piece of equipment or permanently installed appliance, fireplace or process that produces or emits carbon monoxide gas.

915.2 CO Detection Locations

- Locations for CO detection are specified:
  - Sleeping units and dwelling units – outside of each sleeping area unless CO source in sleeping room
  - Group E requires a CO detection system
  - Rooms with fuel-burning forced air furnace require CO detection in the room
  - Occupiable rooms contiguous to attached private garages with opening to garage

- CO detection provided in air ducts and plenums shall not substitute for installation in required locations.
915.3 CO Detection and Fire Alarms

- CO alarms only allowed in sleeping units and dwelling units
- In new buildings with a required fire alarm system and required CO detection shall have CO detectors connected to the FACU
- In new buildings without a fire alarm system, install a CO detection system
  - Where approved by the FCD, CO alarms can be utilized

917.2 Mass Notification: Group E

- Mass notification risk analysis is required for:
  - New building at a multi-building college or university campus
  - New building containing a Group E with an occupant load of ≥500
- Analysis conducted in accordance with NFPA 72
- Mass notification provided is risk analysis determines it is needed

1004.5 Information Technology Equipment

- Information technology equipment (ITE) added to code
- ITE is server room, or server farm
  - Different than data entry centers

| Table 1004.5 (excerpts) Maximum Floor Area Allowances per Occupant |
|-----------------------------|-----------------------------|
| FUNCTION OF SPACE | OCCUPANT LOAD FACTOR* |
| Information technology equipment facilities | 0.10 per sqm |
Table 1006.3.4(1) Occupiable Roofs

<table>
<thead>
<tr>
<th>Story and Occupiable Roof</th>
<th>Occupancy</th>
<th>Minimum Number of Dwelling Units</th>
<th>Maximum Exit Access Travel Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basement, first, second or third story above grade plane and occupiable roofs over the first or second story above grade plane</td>
<td>R-2 (^a)</td>
<td>4 dwelling units</td>
<td>125 feet</td>
</tr>
</tbody>
</table>

- \(\text{R-2} \(^a\)\) Buildings classified as Group R-2 equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2 and provided with emergency escape and rescue openings in accordance with Section 1031.

- This table is used for R-2 occupancies consisting of dwelling units. For R-2 occupancies consisting of sleeping units, use Table 1006.3.4(2).

- This table is for occupied roofs accessed through and serving individual dwelling units in Group R-2 occupancies. For Group R-2 occupancies with occupied roofs that are not accessed through and serving individual units, use Table 1006.3.4(2).
### Table 1010.2.4 Locks & Latches

**Permitted Uses of Manual Bolt Locks, Automatic Flush Bolts and Constant Latching Bolts on the Inactive Leaf of a Pair of Doors**

<table>
<thead>
<tr>
<th>Application with a Pair of Doors with an Active Leaf and Inactive Leaf</th>
<th>The Pair of Doors are Required to Comply with IBC Section 716</th>
<th>Permitted Uses of Manual Bolt Locks, Automatic Flush Bolts and Constant Latching Bolts on the Inactive Leaf of a Pair of Doors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group I or II with occupant load less than 50</td>
<td>Yes</td>
<td>P</td>
</tr>
<tr>
<td>Group I or II without a minimum operable window</td>
<td>Yes</td>
<td>P</td>
</tr>
<tr>
<td>Group I, II or III where the inactive leaf is not required to meet egress capacity requirements</td>
<td>Yes</td>
<td>NP</td>
</tr>
<tr>
<td>Group D, E, F, or S with occupant load less than 50</td>
<td>Yes</td>
<td>NP</td>
</tr>
<tr>
<td>Group D, E, F, or S where the building is equipped with an automatic sprinkler system and the building is equipped with a smoke control system</td>
<td>Yes</td>
<td>NP</td>
</tr>
<tr>
<td>Group I, II or III where the building is equipped with a smoke control system</td>
<td>Yes</td>
<td>NP</td>
</tr>
<tr>
<td>Group I-2 patient care rooms and sleeping rooms where the inactive leaf is not needed to meet egress capacity requirements</td>
<td>Yes</td>
<td>NP</td>
</tr>
<tr>
<td>Any occupancy where panic hardware is not required, egress doors are used in pairs, and where both leaves are required to meet egress capacity requirements</td>
<td>Yes</td>
<td>NP</td>
</tr>
<tr>
<td>Storage or equipment rooms where the inactive leaf is not needed to meet egress capacity requirements</td>
<td>Yes</td>
<td>NP</td>
</tr>
</tbody>
</table>

Continued on next slide.

---

### 1010.2.4 #8 Locks and Latches

- Except in egress courts, where the egress path travels back into the building, key-operated deadbolts are allowed to be used as the locking device.

![Diagram showing key-operated deadbolt allowed in Group A-2 Restaurant](image)
1010.2.6 Stairway Doors

- Stairway doors can be locked from the side opposite egress provided the doors are:
  - Capable of being unlocked individually or simultaneously by a signal from the fire command center or location inside the main entrance
  - Automatically unlocked upon activation of fire alarm
  - Automatically unlocked upon failure of the locking system or loss of power

1010.2.9 Access Control Systems

- The code acknowledges access control systems
- Access control systems are allowed provided the egress side complies with one of the locking arrangements in Ch 10

1010.2.14 Elevator Lobby Access Doors

- Doors from an elevator lobby to the tenant space can be electrically locked provided:
  - The floor has at least 2 exits that do not required travel through the elevator lobby
  - The building is equipped throughout with a sprinkler system
  - The building is equipped throughout with a fire alarm system
  - Smoke detectors are provided in the elevator lobbies
  - 2-way communication system is located in the elevator lobby and connected to an approved constantly attended station which has the capability of unlocking the electric locks
  - Emergency lighting is provided in the elevator lobby
  - The locking devices are listed
1010.2.14 Elevator Lobby Access Doors

- Locked doors
- Smoke detector
- 2-way communication system
- Automatic sprinkler system throughout building
- Fire alarm system throughout building

1013.2 Low-level Exit Signs

- Low level exit signs are required in areas serving guest rooms in Group R-1
- Bottom of the sign located between 10" and 18" above the floor
- No longer required in Group R-1 if the building is sprinklered
  - NFPA 13 or 13R is acceptable

1032.2.2 Fire Escape Maintenance

- Requirements to maintain fire escapes has been in the code since 2000
- Located in Ch 11
- Relocated to maintenance of means of egress in §1032
- Examined every 5 years
- Evaluated for capability to carry live load of 100 lbs/ft²
1103.5.4 Sprinklers in Existing High-rise

- Sprinklers required in existing high-rise IF any of the following exist:
  1. Occupied floor >75' and ≤120' and building does not have ≥2 interior exit stairs complying with §1104.10 with 2-HR enclosure

  §1104.10
  • Tread rise ≤8¼”
  • Tread run ≥9”

  This section only applies IF Appendix M is NOT adopted

- Sprinklers required in existing high-rise IF any of the following exist:
  2. Occupied floor >75' and ≤120' and building does not have a fire alarm system with smoke detection in:
     • Electrical, mechanical, transformer, telephone rooms
     • Corridors
     • Elevator lobbies
     • Doors penetrating interior exit stairway enclosures

  This section only applies IF Appendix M is NOT adopted

- Sprinklers required in existing high-rise IF any of the following exist:
  3. Occupied floor >120' above LLFDVA

  This section only applies IF Appendix M is NOT adopted
1103.7.5.1 Fire Alarm in R-1 Hotel/Motel

- Manual fire alarm system required in existing R-1 hotel or motel when >1 story or >20 sleeping rooms

- Exceptions:
  1. Fire alarm system not required if only 1-story with >20 sleeping rooms AND each room has direct access to public way AND each sleeping room is separated by 1-HR
  2. Fire alarm system not required if ≤3 stories with ≤20 sleeping rooms AND is sprinklered with NFPA 13 or 13R
  3. Fire alarm system is required but only 1 manual fire alarm box IF sprinklered with NFPA 13 or 13R

1103.9 CO Detection in Existing Buildings

- CO detection required in existing buildings with a CO source
  - All occupancies
  - Detection can be CO alarms
  - Not required to be connected to fire alarm system

1107.1 Existing Energy Storage Systems

- Failure Modes and Effects Analysis (FMEA) shall be provided for existing ESS utilizing lithium-ion battery technology IF:
  - Capacity exceeds Table 1207.1.3, and
  - Installed prior to the local adoption of the 2018 IFC
  - Except for detached 1- and 2-family dwellings and townhouses
  - FMEA shall evaluate thermal runaway and early detection
1201.1, 1207.1 ESS Under Utility Control

- ESS systems must comply with Ch 12 and NFPA 855
- ESS managed by utility companies are specifically required to comply with Ch 12
  - Excludes capacitors and capacitor equipment for utilities and industrial facilities
  - Excludes mobile ESS at utility substations for ≤ 90 days during repair or maintenance

1205.2.3 Building-Integrated PV Systems

- Building-integrated photovoltaic systems must be listed to UL 3741
- Components must be designed so when FF cut and remove components for ventilation, they are not exposed to significant electrical charge
- The eaves, or edge of building, must be marked to identify areas to avoid ground ladder placement

Table 1207.1.3 ESS Threshold

<table>
<thead>
<tr>
<th>TECHNOLOGY</th>
<th>ENERGY CATEGORY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacitor ESS</td>
<td>3 kWh</td>
</tr>
<tr>
<td>Flow batteries</td>
<td>25 kWh</td>
</tr>
<tr>
<td>Lead acid batteries, all types</td>
<td>70 kWh</td>
</tr>
<tr>
<td>Lithium-ion batteries</td>
<td>20 kWh</td>
</tr>
<tr>
<td>Nickel cadmium (NiCd), nickel-zinc (Ni-Zn), and nickel-magnesium (Ni-Mg) batteries</td>
<td>70 kWh</td>
</tr>
<tr>
<td>Non-electrochemical ESS</td>
<td>10 kWh</td>
</tr>
<tr>
<td>Other battery technologies</td>
<td>10 kWh</td>
</tr>
<tr>
<td>Other electrochemical ESS technologies</td>
<td>3 kWh</td>
</tr>
<tr>
<td>Sodium nickel choride batteries</td>
<td>20 kWh</td>
</tr>
<tr>
<td>Vanadium-hydride (V-H) batteries</td>
<td>20 kWh</td>
</tr>
</tbody>
</table>

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Table 1207.5 Maximum Capacity for ESS

- Never becomes Group H
- MAQ per fire area

<table>
<thead>
<tr>
<th>TECHNOLOGY</th>
<th>MAXIMUM ALLOWABLE QUANTITIES a</th>
</tr>
</thead>
<tbody>
<tr>
<td>STORAGE BATTERIES</td>
<td></td>
</tr>
<tr>
<td>Flow batteries</td>
<td>600 kWh</td>
</tr>
<tr>
<td>Lead-acid, all types</td>
<td>Unlimited</td>
</tr>
<tr>
<td>Lithium-ion</td>
<td>600 kWh</td>
</tr>
<tr>
<td>Sodium nickel chloride</td>
<td>Unlimited</td>
</tr>
<tr>
<td>Nickel-cadmium (Ni-Cd), nickel metal hydride (Ni-MH) and nickel zinc (Ni-Zn)</td>
<td>Unlimited</td>
</tr>
<tr>
<td>Zinc manganese dioxide (Zn-MnO₂)</td>
<td>200 kWh</td>
</tr>
<tr>
<td>Other battery technologies</td>
<td>20 kWh</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TECHNOLOGY</th>
<th>CAPACITORS</th>
</tr>
</thead>
<tbody>
<tr>
<td>All types</td>
<td>20 kWh</td>
</tr>
</tbody>
</table>

Table 1207.6 Specific Requirements for ESS

- New ESS technologies added to §1207

<table>
<thead>
<tr>
<th>COMPLIANCE REQUIRED b</th>
<th>MAXIMUM ALLOWABLE QUANTITIES OF ELECTROCHEMICAL ESS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feature</td>
<td>Lead-acid, nickel metal hydride (Ni-MH) and nickel zinc (Ni-Zn)</td>
</tr>
<tr>
<td>Exhaust ventilation</td>
<td>Yes</td>
</tr>
<tr>
<td>Explosion control</td>
<td>Yes</td>
</tr>
<tr>
<td>Safety caps</td>
<td>Yes</td>
</tr>
<tr>
<td>Anti-dilution and neutralization</td>
<td>Yes</td>
</tr>
<tr>
<td>Thermal runaway</td>
<td>Yes</td>
</tr>
</tbody>
</table>

- Not required for batteries with jelled electrolytes

1207.5.5 Fire-extinguishing System for ESS

- Fire-extinguishing system design for ESS is based on the following:
  - Sprinklers for ESS ≤50 kWh – minimum design of 0.3 GPM/ft² over the room or 2,500 ft², whichever is smaller
  - Sprinklers for ESS >50 kWh – minimum design based on large-scale fire testing
  - Alternative fire-extinguishing system for ESS – based on large-scale fire testing

- New exceptions:
  - Lead-acid and nickel-cadmium ESS under utility control
  - Lead-acid ESS used for UPS comprising ≤10% of floor area
1207.11.1 ESS in Group R-3 or R-4

- ESS in Group R-3 or R-4 must comply with §1207.11, OR:
- Be listed and labeled “FOR USE IN RESIDENTIAL DWELLING UNITS” and comply with the listing and manufacturer’s instructions, OR
- Have a capacity <1 kWh

1207.11.3 ESS in Group R-3 or R-4

- ESS may be installed in the following locations:
  - Detached garages
  - Attached garages IF separated in accordance with IBC §406.3.2
  - Outdoors or on the exterior side of exterior walls IF ≥3' from doors and windows directly entering the dwelling unit
  - Enclosed utility closets, basements and storage spaces within dwelling units and sleeping units provided with finished or noncombustible walls and ceilings
  - Unfinished wood-framed construction shall be provided ≥5/8” Type X gypsum wallboard

1207.11.4 ESS in Group R-3 & R-4

- Individual ESS units ≤20 kWh

<table>
<thead>
<tr>
<th>ESS Location</th>
<th>Maximum-Aggregate Rating</th>
<th>Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Detached garages &amp; detached accessory structures</td>
<td>80 kWh</td>
<td>Separated from the dwelling unit and sleeping units per IBC</td>
</tr>
<tr>
<td>Attached garages</td>
<td>80 kWh</td>
<td></td>
</tr>
<tr>
<td>Utility closets, basements, storage or utility spaces within dwelling units and sleeping units</td>
<td>40 kWh</td>
<td></td>
</tr>
<tr>
<td>Outdoors on exterior walls</td>
<td>80 kWh</td>
<td>≥3’ from doors and windows</td>
</tr>
<tr>
<td>Outdoors on the ground</td>
<td>80 kWh</td>
<td>≥3’ from doors and windows</td>
</tr>
</tbody>
</table>
1207.11.7.1 ESS in Garages

- ESS installed in garages shall be protected from vehicle impact
- Potential vehicle impact occurs:
  - Within the normal driving path to the back wall
  - Garage vehicle opening width is the normal driving path
  - ≤48” above the driving surface on the back wall
  - On the back wall within 36” of the normal driving path
  - On a side wall within 24" of the back wall and within 36" of the normal driving path

1207.11.6 Fire Detection

- ESS installed Group R-3 and R-4 shall be provided with fire detection
- Rooms and areas within dwelling units, sleeping units, basements and attached garages shall be provided with a smoke alarm in accordance with §907.2.11
- Hardwired with battery backup and interconnected with smoke alarms in the dwelling or sleeping unit
- A listed heat alarm shall be installed where smoke alarms cannot be installed because of their listing restrictions
Part IV
Special Occupancies and Operations
Chapters 20 – 41

Ch 22 Combustible Dust
- Chapter is revised
- Explosion prevention
- Dust collection
- Control of ignition sources
- Housekeeping
- Emergency response plan
- Employee training
- Dust Hazard Analysis

2203 Dust Explosion Prevention
- Identification of hazard – critical depth layer

<table>
<thead>
<tr>
<th>Type of Dust</th>
<th>Critical Depth Layer (inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wood Flour</td>
<td>1/8</td>
</tr>
<tr>
<td>All Other Dusts</td>
<td>1/32</td>
</tr>
</tbody>
</table>
- Other depths can be used if evaluated under specific criteria in NFPA 654
- Housekeeping is critical
2308.2 CNG Vehicle Fueling

- Vehicle Fueling Appliance (VFA)
  - Listed to CSA/ANSI NGV 5.2
  - Fueling rate ≥10 cfm/min
- Residential Fueling Appliance (RFA)
  - Listed to CSA/ANSI NGV 5.1
  - Fueling rate ≥5 cfm/min

2404.2 Enclosures for Spray Operations

- Portable or inflatable enclosures shall not be used for spray operations
  - Spray operations at marinas, dry docks and construction areas are allowed if they comply with NFPA 33
  - Membrane enclosures can be used if they comply with NFPA 33

NFPA 33, Ch 18 Membrane Enclosures

- Membrane enclosures are limited in use to 180 days
- Membrane must be noncombustible, or pass NFPA 701 Test Method 2, or meets specific criteria when tested to NFPA 286, or be classified as a welding curtain by FM 4950
- Membrane enclosures are permitted in buildings protected with sprinkler systems
- Control ignition sources inside enclosure – Class I Division 1
2404.5.3.6 Size of Spray Booths

- Individual spray booths are no longer limited to 1,500 ft²
- Now limited to the smaller of:
  - 10% of the floor area of the building
  - Basic allowable area for Group H-2
- A single booth can be 500 ft²
  - Even when it exceeds 10%

2404.5.3.6 Size of Spray Booths

<table>
<thead>
<tr>
<th>Occupancy Classification</th>
<th>See FOOTNOTES</th>
<th>TYPE I</th>
<th>TYPE II</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group F-1</td>
<td></td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>Type IIB construction</td>
<td></td>
<td>21,000</td>
<td>16,500</td>
</tr>
<tr>
<td>1-story</td>
<td></td>
<td>11,000</td>
<td></td>
</tr>
<tr>
<td>Sprinklered</td>
<td></td>
<td></td>
<td>7,000</td>
</tr>
<tr>
<td>SM</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Limited finishing workstations added as an option for spray finishing operations
- Must comply with NFPA 33 and:
  - Protected by fire-extinguishing system
  - Provided with mechanical ventilation
  - Limited to use of 1 gallon in 8-hour period
  - Control ignition sources – Class I Div 1 inside enclosure
  - Enclosure noncombustible or meets NFPA 701, NFPA 286 or FM 4950

Group F-1
Type IIB construction
1-story
Sprinklered
50,000 ft²
Spray Booth
5,000 ft²
2808.3 Basic Size of Piles or Stacks

- Storage piles associated with:
  - Storage & processing of wood chips, hogged material, fines & compost
  - Solid biomass feedstock
  - Raw products at yard waste, agro-industrial facilities & recycling facilities
- Size of piles can be increased based on fire protection plan:
  - Contact information for after-hours personnel
  - Storage yard areas and material-handling equipment selection, pile design and arrangement
  - Access roads around the piles or stacks and access roads to the top of piles
  - Evaluation and control of spontaneous heating
  - Routine yard inspections
  - Facilities and equipment needed:
    - Water supply
    - Heavy equipment
    - De-inventory plan

2808.3 Basic Size of Piles or Stacks

- Size of piles:
  - 25'
  - 80'
  - 37.5'
  - 150'
- Size of stacks:
  - 37.5'

3103.8.1 Water-filled vessels

- Temporary tents and membrane structures must be adequately anchored
- Stakes into the ground are the default method of choice
- Water-filled barrels have been used in cases where the structure sits on concrete
- Water-filled barrels are only permitted where the FCO approves their use and then only if in accordance with tent manufacturer’s load specifications
3106 Inflatable Amusement Devices

- Inflatable amusement devices are made of flexible fabric or other combustible materials that is inflated by ≥1 air blowers and typically designed for recreational activities that allow occupants to bounce, climb, slide, negotiate an obstacle course or participate in interactive play
- Anchored or secured
- Control of electrical wiring and equipment

Provided with permanently affixed label:
- Material must have limited flame propagation and meets NFPA 701 Test Method 2
- Designed to ASTM F2374
- Manufacturer’s name

Table 3203.8 Commodity Classification

- Correlates with NFPA 13
- Lithium-ion batteries added
- Listed as high-hazard commodity
- Can be classified as high-piled storage >6'

<table>
<thead>
<tr>
<th>Product Category</th>
<th>Product</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Batteries</td>
<td>Category III</td>
<td>High-hazard</td>
</tr>
<tr>
<td>Drivers</td>
<td>Category III</td>
<td>High-hazard</td>
</tr>
<tr>
<td>Drivers</td>
<td>Category II</td>
<td>High-hazard</td>
</tr>
<tr>
<td>Drivers</td>
<td>Category IV</td>
<td>High-hazard</td>
</tr>
<tr>
<td>Drivers</td>
<td>Category V</td>
<td>High-hazard</td>
</tr>
<tr>
<td>Lithium-ion cells</td>
<td>Category II</td>
<td>High-hazard</td>
</tr>
<tr>
<td>Lithium-ion cells</td>
<td>Category IV</td>
<td>High-hazard</td>
</tr>
<tr>
<td>Lithium-ion cells</td>
<td>Category V</td>
<td>High-hazard</td>
</tr>
<tr>
<td>Lithium-ion cells</td>
<td>Category VI</td>
<td>High-hazard</td>
</tr>
</tbody>
</table>
3205.5 Maintenance of Aisle Width

- Retail displays are allowed to encroach into the required aisle width IF:
  - Sprinklers have K-factor of 25.2 and comply with NFPA 13 §26.3.1
  - Height ≤ 48" ±
  - Clear aisle ≥ 48" ±

2 hydraulic design points:
1. 0.60 gpm/ft² over 2,000 ft²
2. 0.70 gpm/ft² from 4 sprinklers
Plus 500 gpm hose stream

3208.3 Flue Spaces

- Flue spaces are critical in high-piled storage
- Flues allow heat to rise to activate sprinklers
- Flues allow sprinkler water to reach the fire below
- Minimum flue space dimensions are required
- The code is clarified that the rack uprights can be within the flue space and are not treated as an obstruction
- Flue space is measured from edge of commodity to edge of adjacent commodity

3209.4 Automated Rack Storage Shutdown

- Automated rack storage systems are required to be provided with shutdown IF high-piled storage area >500 ft²
  - Manual shutdown switch
  - Automatic shutdown activated by either of the following:
    - Sprinkler water flow
    - Activation of fire detection system
Ch 33
Fire Safety During Construction

3303 General
3302 Definitions
3303 Administrative Safety Controls
3304 Protection of Combustible Materials
3305 Ignition Source Controls
3306 Fire Protection Systems and Devices
3307 Fire Department Site Access and Water Supply
3308 Motorized Construction Equipment
3309 Hazardous Materials
3310 Additional Safeguards for Occupied Buildings
3311 Additional Safeguards for Type I & II Construction
3312 Additional Safeguards for Type IV Construction

3303.3 Daily Fire Safety Inspection

- Daily inspection of building and site where construction is occurring
  - Contractors entering to perform hot work have been instructed in the hot work safety requirements
  - Temporary heating equipment is properly used
  - Combustible debris, rubbish and waste material is removed
  - Flammable liquids and other hazardous materials are stored in locations approved by the site safety director
  - Vehicle access shall be provided by either temporary or permanent roads, capable of supporting vehicle loading under all weather conditions
    - Approved vehicle access for fire fighting shall be provided to all construction or demolition sites
    - Vehicle access shall be provided to within 100' of FDC

3303.3.1 Daily Fire Safety Inspection

- Owner is responsible for daily fire safety inspection
- Failure to properly conduct, document and maintain daily inspection records and documentation
  - Is an unlawful act
  - Shall result in the issuance of a notice of violation
  - On the 3rd offense, FCO is authorized to issue a stop work order
  - Work cannot resume until assurances of future compliance have been presented and approved by the FCO
3303.5.1 Fire Watch – New Construction

- Fire safety plan is required
- Fire watch provided for new construction IF:
  - >40' above lowest adjacent grade,
  - New multi-story construction >50,000 ft² per story,
  - Required by fire safety plan, or
  - Required by FCO

3303.5.1 Fire Watch

- If fire watch is required, it must be provided:
  - During nonworking hours
  - When construction >40' above lowest adjacent grade
- Fire watch personnel
  - Must be trained
  - Keep written log
- Fire watch for hot work is still required

3307 Water Supply During Construction

- Water supply required when combustible building materials arrive on site
  - Minimum 500 GPM
  - Fire hydrant ≤500’ of the combustible materials
- Water supply required when standpipe is available
  - Minimum 500 GPM
  - Fire hydrant ≤100’ of FDC
3307 Water Supply During Construction

- Minimum fire flow of 500 GPM is increased for Type III, IV or V buildings before vertical construction commences
  - Full fire flow if building ≤30’ of property line that can be built on
  - 50% of full fire flow if building >30’ and ≤60’ of property line that can be built on
  - Minimum of 500 GPM is acceptable during construction if building >60’ of property line that can be built on

3312.1 Mass Timber Construction

- When Type IVA or IVB construction reaches 6 stories, the 2021 IFC requires a single layer of noncombustible protection to be installed on all exposed wood surfaces up to 4 stories below the top floor under construction
  - In other words, never more than 4 stories of unprotected wood during the construction
- 2024 IFC exempts the floor from this requirement

Chapter 39
Processing And Extraction Facilities

- 3901 Scope
- 3902 Definitions
- 3903 Processing and extraction
- 3904 Systems and equipment
- 3905 Safety systems
3901 Plant Cultivation

- Ch 39 includes all facilities conducting plant processing and solvent-based extraction
  - Includes cultivation, pre-extraction and post-extraction operations
  - Greenhouses are excluded provided they do not utilize carbon dioxide enrichment

3901.4 Lighting

- Lighting is used extensively in cultivation
- Lighting must be listed to UL 8800 Standard for Horticultural Lighting Equipment and Systems
- Lighting creates vast amounts of heat and electrical systems must be properly designed to safely handle the electrical loads

3901.5 CO₂ Enrichment

- CO₂ operations are regulated in the 2021 IFC, but only if CO₂ is stored on-site
  - Stored as compressed gas or liquefied gas
  - Quantities >100 lbs require permit and must meet requirements
- CO₂ generation is now added to the code and a permit is required
  - CO₂ is created on-site, often using a propane burner
  - CO₂ is not stored
3903.7 Means of Egress

- Exit doors and exit access doors from extraction rooms must swing in the direction of travel
- Panic hardware is not required, but door swing is required

3905.3.1 Ventilation: Flammable

- Continuous mechanical ventilation is required for extraction processes using flammable/combustible liquids or flammable gas as the extraction medium
  - 5 CFM per ft², OR
  - Based on engineered system to maintain the concentration ≤25% of the LEL
- Electrical equipment shall be interlocked so it is only operational while ventilation system is operational

3905.3.2 Ventilation: CO₂

- Continuous mechanical ventilation is required for extraction processes using asphyxiant or irritant gas as the extraction medium
  - ≥1 CFM per ft²
- Gas detection system can be provided in lieu of continuous ventilation
- Electrical equipment shall be interlocked so it is only operational while ventilation system is operational
3905.3.3 Ventilation: Post-extraction

- Continuous mechanical ventilation is required for post-extraction processes using flammable liquids or combustible liquids heated above their flashpoint
  - ≥2 CFM per ft²
- Gas detection system can be provided in lieu of continuous ventilation
- Electrical equipment shall be interlocked so it is only operational while ventilation system is operational

Ch 40 Storage of Distilled Spirits & Wines

- New chapter for storage of distilled spirits and wines
  - Not classified as Group H
- Ch 50 & 57 do not apply to storage when in compliance with Ch 40
  - §4003.1 Spill control
  - §4003.2 Ventilation
  - §4003.3 Control of ignition sources
  - §4003.4 Lightning protection is suggested
4005 Protection of Distilled Spirits

- Sprinkler systems to protect alcoholic beverages with alcohol content ≤20% are in accordance with NFPA 13
- Fire sprinkler criteria for >20% is in the IFC:
  - Palletized storage of distilled spirits in wooden barrels
  - Rack storage of distilled spirits in wooden barrels
  - Storage in metal containers must comply with Ch 57

---

4005 Protection of Distilled Spirits

- §4005.1 Palletized storage of distilled spirits in wooden barrels
  - Maximum 7 pallets high
- §4005.1.4.6 small facility requirements
- §4005.2 Rack storage of distilled spirits in wooden barrels
  - Barrels on side
  - Barrels on end

---

Chapter 41
Temporary Heating & Cooking Operations

4101 General
4102 Portable electrical heating appliances
4103 Portable fuel-fired heating appliances
4104 Portable fuel-fired cooking appliances
4105 Portable electrical cooking appliances
4106 Mobile food preparation vehicles
Cooking that produces sparks or grease-laden vapors shall not be performed within 10 feet of a tent or membrane structure except where the following conditions are met:
1. Cooking devices shall be isolated from the public.
2. Cooking devices shall be maintained and used according to the manufacturer’s instructions.

Exception: Designated cooking tents with an automatic sprinkler system installed in accordance with Section 903.3.1.1.

- Cooking with liquid-fuels, gaseous-fuels and solid-fuels shall be separated ≥10' from tents and membrane structures
- Cooking in tents provided with a sprinkler system are allowed to have the public present

Groups of Cooking Tents

- Supply tent ≤100 ft²
- No separation required
- ≥12 separation required

Mobile Food Preparation Vehicles

- Permit is required
- Must comply with code and NFPA 96
  - Many requirements in the 2021 IFC are now to be found in NFPA 96
  - Exhaust hood is required over cooking
  - Specific requirements for manual activation device for fire-extinguishing system override the general requirements in 904.12.
Part V
Hazardous Materials
Chapters 50 – 67

Table 5003.1.1(5) Haz Mat Exemptions

<table>
<thead>
<tr>
<th>Material Classification</th>
<th>Exemption/ Application</th>
<th>Exemption</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammable and combustible liquids and gases</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fuel</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flammable or gaseous fuels that are in vehicles or motorized equipment not limited</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quantity of liquid fuels in piping systems and fixed appliances regulated by IFGC is not limited</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The quantity of fuel in piping systems not fixed appliances regulated by IFGC is not limited</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flammable or gaseous fuels that are in vehicles or motorized equipment not limited</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The quantity of liquid fuels in piping systems not fixed appliances regulated by IFGC is not limited</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The quantity of fuel in piping systems not fixed appliances regulated by IFGC is not limited</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hand sanitizer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The quantity of alcohol-based hand rubs (ABHR) classified as Class I or II liquids in dispensers installed in accordance with Sections 5705.5 and 5705.5.1 is not limited. The location of the ABHR dispensers shall be provided in the construction documents</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 5003.8.2 Detached Building

<table>
<thead>
<tr>
<th>Material</th>
<th>Class</th>
<th>Solid and Liquids (tons)</th>
<th>Gases cubic feet</th>
<th>Exemption</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explosives</td>
<td>Division 1.2</td>
<td>Maximum Allowable Quantity</td>
<td>Not required</td>
<td></td>
</tr>
<tr>
<td>Division 1.2</td>
<td>Maximum Allowable Quantity</td>
<td>Not required</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Division 1.4</td>
<td>Maximum Allowable Quantity</td>
<td>Required</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Division 1.5</td>
<td>Maximum Allowable Quantity</td>
<td>Not required</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Division 1.6</td>
<td>Maximum Allowable Quantity</td>
<td>Not required</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

e. Does not apply to consumer fireworks, 1.4G.
5003.8.3.3 Number of Control Areas

For the purposes of determining the number of control areas, each portion of a building separated by ≥ 1 fire walls shall be considered a separate building.

Control Area

<table>
<thead>
<tr>
<th>Building 1</th>
<th>Building 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>3-HR fire wall</td>
<td>1-HR fire barriers</td>
</tr>
</tbody>
</table>

Table 5003.11.1 Haz Mat in Group M and S

<table>
<thead>
<tr>
<th>Condition</th>
<th>Maximum Allowable Quantity per Control Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Physical Hazard Materials—Nonflammable Solids, Nonflammable and Noncombustible Liquids</td>
<td></td>
</tr>
<tr>
<td>1. Oxidizers</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Not Allowed</td>
</tr>
<tr>
<td>3</td>
<td>1,350</td>
</tr>
<tr>
<td>2</td>
<td>3,350</td>
</tr>
<tr>
<td>1</td>
<td>16,000</td>
</tr>
</tbody>
</table>

Table 5003.11.2 Flammable Gas Category 1B

<table>
<thead>
<tr>
<th>Condition</th>
<th>Maximum Allowable Quantity per Control Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Physical Hazard Materials—Low Burning Velocity</td>
<td></td>
</tr>
<tr>
<td>1. Category 1B</td>
<td></td>
</tr>
<tr>
<td>10,000 lbs.</td>
<td>20,000 lbs.</td>
</tr>
</tbody>
</table>
5003.11.2.1 Flammable Gas 1B Storage

- Storage
  - Separate ≥20' from flammable liquids
  - Separate ≥10' from flammable liquids if secondary containment or diking is provided
  - Edge of secondary containment or diking ≥10' from Category 1B flammable gas
  - Shelf storage ≥6' in height

- Fire protection
  - Rack storage, palletized storage or solid piles ≥6' in height shall be sprinklered
  - Sprinklers designed for Extra Hazard Group 1
  - Shelf storage shall be on metal shelves
  - Combustible commodities shall not be stored above

5003.12 Outdoor Control Areas

- §5003.12 is specified as "general requirements"
- §5004.14, §5005.3.3 & §5005.4.3 are revised to state outdoor storage must comply with outdoor control area requirements, except where material specific requirements are found in the code or referenced standard
5003.12 Outdoor Control Areas

- Outdoor control area for flammable gas

5003.12 Outdoor Control Areas

- Outdoor control area for gaseous H₂ – NFPA 2

5003.13 Rooftop Storage of Haz Mat

- Storage on roofs or on top of canopies is considered rooftop storage
- Rooftop storage quantities shall **NOT** be included in the MAQ for the building
- Rooftop storage does **NOT** create another story
- Quantity in rooftop storage shall not exceed the MAQ for the story below
5003.13 Rooftop Storage of Haz Mat

- MAQ for the rooftop is the same as 3rd story
- Weather protection per IBC Section 414.6.1

5104 Plastic Aerosol 3 Products

- Aerosol products in plastic containers:
  - Plastic aerosol 1: Propellant is ≤4% flammable liquefied gas emulsified with product, or is nonflammable, or has no fire point. Product contains ≤20% ethanol or IPA.
  - Plastic aerosol 3: Propellant is ≤10% flammable propellant. Product contains ≤50% water-miscible alcohols.
  - Plastic aerosol X: Exceeds criteria above. Plastic aerosol X products are prohibited.
Table 5104.3.1 General Storage Warehouse

- Plastic aerosol 3 treated included with Aerosol Level 3

<table>
<thead>
<tr>
<th>TABLE 5104.3.1 NONSEGREGATED STORAGE OF LEVEL 2 AND 3 AEROSOL AND PLASTIC AEROSOL 3 PRODUCTS IN GENERAL PURPOSE WAREHOUSES</th>
</tr>
</thead>
<tbody>
<tr>
<td>AEROSOL LEVEL</td>
</tr>
<tr>
<td>Protected in accordance with Section 5104.3.1</td>
</tr>
<tr>
<td>Unprotected</td>
</tr>
<tr>
<td>Level 2</td>
</tr>
<tr>
<td>Level 3</td>
</tr>
<tr>
<td>Combination 2 and 3</td>
</tr>
</tbody>
</table>

a. Approved automatic sprinkler system protection and storage arrangements shall comply with NFPA 308.
b. Sprinkler system protection shall extend 20 feet beyond the storage area containing the aerosol products.
c. Storage quantities indicated are the maximum permitted in any 50,000-square-foot area.

d. Storage quantities indicated are the maximum permitted in any 50,000-square-foot area.

Table 5106.2.1 Aerosols in Retail

<table>
<thead>
<tr>
<th>TABLE 5106.2.1 MAXIMUM QUANTITIES OF LEVEL 2 AND 3 AEROSOL PRODUCTS, AEROSOL COOKING SPRAY PRODUCTS AND PLASTIC AEROSOL 3 PRODUCTS IN RETAIL DISPLAY AREAS</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAXIMUM NET WEIGHT PER FLOOR (pounds)</td>
</tr>
<tr>
<td>Protected in accordance with Section 5106.2.1</td>
</tr>
<tr>
<td>Unprotected</td>
</tr>
<tr>
<td>Basement</td>
</tr>
<tr>
<td>Ground</td>
</tr>
<tr>
<td>Upper</td>
</tr>
</tbody>
</table>

a. The total quantity shall not exceed 1,000 pounds net weight in any one 100-square-foot retail display area.
b. Per 25,000-square-foot retail display area.
c. Minimum Ordinary Hazard Group 2 wet-pipe automatic sprinkler system throughout the retail sales occupancy.

d. The total quantity shall not exceed 1,000 pounds net weight in any one 100-square-foot retail display area.

5601.1.3 Consumer Use Fireworks

- Where allowed, the storage, use and handling of Division 1.4G fireworks shall comply with 2006 NFPA 1124
  - Display height ≤ 6’
  - Display height along wall ≤ 12’
  - Vertical flame breaks provided every 16’ horizontally
  - ≥ 50% of floor area shall be aisles
NFPA 1124 Consumer Use Fireworks

- Dead-end aisles are prohibited
- Exit access travel distance ≤75'
- Sprinklers required if new building >6,000 ft²
- Sprinklers required if existing building >7,500 ft²
- Smoke/heat vents required in new permanent buildings with ceiling height <10' and exit access travel distance >25'
- Temporary stands >800 ft² must meet all requirements of a permanent structure

5705.5 Alcohol-based Hand Rub Dispensers

- Quantities of alcohol-based hand rub dispensers in storage and use are not included when calculating the MAQ
- Location and method of flammable liquid storage must still be approved
- The following restrictions in the 2021 IFC are removed
  - Corridor ≥6' in width for placement in the corridor
  - Sprinklers required for placement in a carpeted room
5705.5 Alcohol-based Hand Rub Dispensers

- No longer required to be wall-mounted
- Must be separated ≥ 3' from heating devices, open flame and ignition sources
- Must be separated ≥ 3' from, and cannot obstruct, the means of egress

Motor Vehicle Fueling Operations

- Fixed fueling facilities (Ch 23)
- Dispensing on Farms and Construction Sites (§5706.2)
- Mobile Fuel Dispensing (§5706.5.4)
- Fleet Fueling (§5706.5.4.5)
- On-demand Mobile Fueling (§5707)
- Hydrogen Mobile Fueling (§5809 – new)
- Marine Fueling (§2310.4)

5706.5.4.5 Fleet Fueling

- Fleet fueling is allowed where approved by the FCO at the following facilities
  - Commercial
  - Industrial
  - Governmental
  - Manufacturing
- Class I flammable liquid fuel (gasoline) is now included in this operation
5809 Hydrogen On-demand Mobile Fueling

- On-demand mobile fueling of gaseous hydrogen is added to the code
- FCO must approve the operation
- Permit is required
- Fueling from tank vehicle or trailer is allowed

5809 Hydrogen On-demand Mobile Fueling

- Hydrogen fueling vehicle or fueling trailer must comply with NFPA 2
- Containers or tanks must be mounted on vehicles
- Fire safety and emergency response plan is required
- Operator must be trained
- Nighttime fueling only allowed if adequately illuminated and approved by FCO

5809 Hydrogen On-demand Mobile Fueling

- FCO can approve the individual sites where H₂ mobile fueling is allowed, or geographical areas where H₂ mobile fueling is allowed
- Prohibited in buildings, covered parking structures, on public streets
- Separation ≥25' to sources of ignition
- Fuel hose ≥15'
- Fueling vehicle and vehicle being fueled must be bonded
  - Can be accomplished by the fuel hose
E102.1.7.2 Oxidizer Classifications

- The Globally Harmonized System (GHS) is an internationally agreed upon standard for classification of hazardous materials.
- The IFC has not made a full transition to the GHS system.
- Many Safety Data Sheets (SDS) have made the transition.
- This revision provides a cross reference to assist the FCO when evaluating oxidizers.

<table>
<thead>
<tr>
<th>GHS Hazard Classification</th>
<th>IFC Hazard Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>H271, Category 1</td>
<td>Oxidizer, Class 4</td>
</tr>
<tr>
<td>H271, Category 2</td>
<td>Oxidizer, Class 3</td>
</tr>
<tr>
<td>H271, Category 3</td>
<td>Oxidizer, Class 2</td>
</tr>
<tr>
<td>H272, Category 1</td>
<td>Oxidizer, Class 1</td>
</tr>
<tr>
<td>H272, Category 2</td>
<td></td>
</tr>
<tr>
<td>H272, Category 3</td>
<td></td>
</tr>
</tbody>
</table>
E104 GHS Definitions

- The definitions from GHS are added to further assist in the transition to the GHS nomenclature
- Many definitions are similar, but few have an exact match
- Table E104.2 provides a comparison and describes similarities and differences

Table E104.2 IFC vs. GHS Definitions

<table>
<thead>
<tr>
<th>IFC CLASSIFICATION</th>
<th>IFC DEFINITION</th>
<th>GHS 2017 (REV 7) CLASSIFICATION</th>
<th>GHS DEFINITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Combustible Liquid</td>
<td>A liquid having a closed cup flash point of not more than $93^\circ C$.</td>
<td>Class 3</td>
<td>Flammable liquid and vapor: Flash point $\geq 23^\circ C$ and $\leq 60^\circ C$.</td>
</tr>
<tr>
<td>Combustible Liquid</td>
<td>A liquid having a closed cup flash point of above $100^\circ F (38^\circ C)$. Combustible liquids shall be subdivided as follows:</td>
<td>Class 1</td>
<td>Extremely flammable liquid and vapor. Flash point $&lt; 23^\circ C$ and initial boiling point $\leq 35^\circ C$.</td>
</tr>
<tr>
<td>Flammable Liquid</td>
<td>LIquids having a flash point below $73^\circ F (23^\circ C)$ and having a boiling point below $100^\circ F (38^\circ C)$.</td>
<td>Class 1</td>
<td>Highly flammable liquid and vapor. Flash point $&lt; 23^\circ C$ and initial boiling point $&gt; 35^\circ C$.</td>
</tr>
<tr>
<td>Flammable Liquid</td>
<td>LIquids having a flash point below $73^\circ F (23^\circ C)$ and having a boiling point of above $100^\circ F (38^\circ C)$.</td>
<td>Class 2</td>
<td>Flammable liquid and vapor. Flash point $&gt; 23^\circ C$ and initial boiling point $&lt; 35^\circ C$.</td>
</tr>
</tbody>
</table>
| Flammable Liquid | LIquids having a flash point of or above $73^\circ F (23^\circ C)$ and below $100^\circ F (38^\circ C)$. | Class 3 | Flammable liquid and vapor. Flash point $> 23^\circ C$ and $\leq 60^\circ C$.

Appendix O

Valet Trash Collection and Recycling
Collection in Group R-2 Occupancies

- 0101 Scope
- 0102 Containers
- 0102.1 General
- 0102.2 Integrity
- 0102.3 Height
- 0102.4 Capacity and limit
- 0102.5 Construction materials
- 0103.1 Container Location
- 0103.2 Minimum means of egress width
- 0103.3 Stairways
- 0104.1 Time limits
- 0104.2 Collection rules
- 0104.3 Suspension of service
Appendix O Valet Trash Collection

- §304.1.1 states that valet trash collection is only permitted where specifically approved by the FCO.
- Where the FCO determines that valet trash collection is to occur, Appendix O provides criteria and requirements for that operation.

Valet trash collection is an intermediary service that removes trash or recycling materials placed outside of dwelling units or sleeping units for final collection.

O102 Containers

- Containers must be liquid-tight and have a lid.
- Material must be noncombustible or have a peak heat release \( \leq 300 \text{ kW/m}^2 \).
- Container size:
  - \( \leq 30'' \) in height
  - \( \leq 2 \) cubic feet (15 gallons)

O103 Container Location

- Only 1 container can be placed for collection at any time.
- Lids shall be in the fully closed position when available for collection.
- Container cannot obstruct the minimum required egress width.
- Container cannot be placed on stairs or stair landings, or in an interior exit stairway.
O104 Additional Requirements

- Filled containers shall not be placed outside the dwelling unit for more than 6 hours in a 24-hour period.
- Empty containers shall not remain outside the dwelling unit for more than 12 hours in a 24-hour period.
- Written rules shall be established that the property manager will enforce regarding service rules, hours and penalties.

Discussion

Key Points

1) Over 200 individual code change proposals were approved for the 2021 IFC, and another 200+ for the 2024 IFC.
2) This presentation covered those revisions with a larger, or more significant impact.
3) Please refer to the code for complete code language.
4) The code keeps pace with technology as best it can; however, you will likely be using this code for 3 or more years. During that time, new technologies will be developed. Alternative methods in Ch 1 allows the FCO to review and approve other methods of providing fire and life safety.