

In January of 2002, the State of Utah and West Valley City adopted the International Code Council's (ICC) new Building and Fire code sets. After extensive comparisons and thorough study by the Utah State Fire Prevention Board, it was found, the International Building Code (IBC) and International Fire Codes (IFC) were more conducive and better suited for the needs of our communities.

The following is an Quick overview of the new International Fire Code (IFC) that may help to answer those – where to find – questions to assist; Architects, Builders and Civilian members of the community who may use Code for reference, development and construction design.

MEANS OF EGRESS

A Occupancies

- Number of Exits required for occupant load. 1005.2.1
- Minimum number of Exits required for occupant load
 - 1-500 persons - 2 exits required
 - 501-1000 persons - 3 exits required
 - 1001 + person - 4 exits required
- Buildings with 1 Exit. 1005.2.2
- Exit doors shall swing in direction of exit travel serving an occupant load of 50 or more. 1003.3.1.2
- Egress doors shall be openable from the egress side without the use of key or special knowledge or effort. 1003.3.1.8
- All doors in Group A and E occupancies serving 100 or more shall not have a lock or latch unless it is panic hardware. 1003.3.1.9
 - Panic Hardware may be omitted from the mean/exterior door in buildings in Occupancy Group A having an occupant load of 300 or less in Groups B,F,M and S, and in churches when a key locking device is used and a sign adjacent to the door stating “THIS DOOR TO REMAIN UNLOCKED WHEN THE BUILDING IS OCCUPIED.”
The use of key operated locking device is revokable by the building or fire official for due cause.
- Exit paths shall be illuminated when the building or structure is occupied. 1003.2.11
- Exit path illumination shall be supplied from two sources of power where The exiting system requires 2 exits. (Storage batteries, unit equipment, onsite generators). 1003.2.11.2
- Exit signs are required above exit and exit access doors. 1003.2.10.1
- Access to exits shall be marked by readily usable exit signs where the exit or path of egress is not immediately visible. 1003.2.10.1
- Exit signs shall be internally or externally illuminated by two lamps or shall be of the self-luminous type. 1003.2.10.4
- Exit signs shall be illuminated at all times. In case of power loss the exit signs shall be connected to emergency power source. (Storage batteries, unit equipment, or on site generator). 1003.2.5.4
- Obstructions to exits shall not be placed in the required width and exits shall not be obstructed in any manner. 1003.3.2.5.4
- The required capacity of means of egress shall not be diminished along the path of egress travel.

Means of Egress, A Occupancies continued:

- Minimum clear aisle width shall be 48 inches (1118mm) where obstructions are placed on both sides of the aisle. 1003.2.8
1008.7.1(1)
- Minimum clear aisle width shall be 36 inches (914mm) where obstructions are placed on one side of the aisle only. 1008.7.1(2)
- Doorways shall not be less than 32 inches (813mm) in clear width. 1003.1.1
- Required corridors serving 50 or more shall not be less than 44 inches (1118mm) width. 1004.3.2.2
- Corridors shall be of one-hour construction per Table 1004.3.2.1
One-hour rating not required when building is sprinklered. 1004.3.2.1
- Exit access design requirements. 1004.2
- Where two exits or exit access doorways are required, from any portion of the exit Access, the exit doorways shall be placed a distance apart equal to not less than one-half of the length of the maximum overall diagonal dimension of the building or area to be served measured in a straight line between exit door or exit access doors. 1004.2.2.1
- Exit doors shall swing in direction of exit travel. 1003.9.2
- Thumb operated devices, deadbolts, hooks, etc. are not permitted. 1003.3.1.8.1
- Minimum corridor width of 36 inches for an occupant capacity of 50 or less, 44 inches for an occupant capacity of 51 to 99 and 72 inches for an occupant capacity of 100 or more. 1004.3.2.2

H-1, H-2, H-3 Occupancies

- Rooms or spaces having an occupant load exceeding 3 or a common path of egress travel exceeding 25 feet shall be provided with at least two exits or exit access doorways. 1004.2.1
- Minimum corridor width shall not be less than 44 inches except with serving an occupant load of 50 or less shall not be less than 36 inches in width. 1004.3.2.2
- Maximum travel to the nearest exit in a Group H-1 Occupancy shall be 75 feet, 100 feet for an H-2, and 150 feet for an H-3. 1004.2.4
- Obstructions to exits shall not be placed in the required width of an exit. Exits shall not be obstructed in any manner. 1011.3

H-4 Occupancies

- Rooms or spaces having an occupant load exceeding 10 or a common path of egress\ travel exceeding 75 feet shall be provided with at least two exits or exit access doorways. 1004.2.1
- The maximum travel to the nearest exit shall be 175 feet. 1004.2.4
- Each door in a means of egress from an occupancy of Group A or E having an occupant load of 100 or more and any occupancy of Group H-1, H-2, H-3, or H-5 shall not be provided with a latch or lock unless it is panic hardware or fire exit hardware. 1003.3.1.9

H-5 Occupancies

- Rooms or spaces having an occupant load exceeding 10 or a common path of egress travel exceeding 75 feet shall be provided with at least two exits or exit access doorways. 1004.2.1
- The maximum travel to the nearest exit shall be 75 feet. 1004.2.4

Means of Egress, H-5 Occupancies continued:

- Obstructions to exits shall not be placed in the required width of an exit, exits shall not be obstructed in any manner. 1003.2.5.4 & 1011
- Emergency lighting for egress illumination shall be provided in the event of power failure in rooms, spaces, and buildings where two or more means of egress are required, (storage batteries, unit equipment, on-site generator). 1003.2.11.2
- Doors to corridors from fabrication areas and H.P.M. Storage areas shall Have a 3/4 hour fire protection rating. IBC 415.9.5.6
- Minimum service corridor width shall not be less than 60 inches or 33 inches Wider than the widest cart or truck used in the corridor, whichever is greatest. IBC 415.9.4.5

I Occupancies

- Minimum corridor width shall not be less than 44 inches except when serving an occupant load of 50 or less shall not be less than 36 inches in width. For Group I-2 occupancies requiring bed movement in corridors shall be a minimum of 96 inches. In Group I-1, health for ambulatory patients receiving outpatient medical care which causes the patient to be not capable of self preservation, the minimum corridor width shall be 72 inches. 1004.3.2.2
- All exit doors (except in Group I, Division 3 occupancies) shall be openable from the inside without special knowledge or effort. 1003.3.1.8

M Occupancies

- Two exits or exit access doorways from any space shall be provided. 1004.2.1

R-1, R-2, R-4 Occupancies

- Obstructions to exits shall not be placed in the required means of egress except where projections are permitted. 1003.2.5.4
- Two exits or exit access doorways from any space shall be provided where Required by Table 1004.2.1 1004.2.1

S Occupancies

- Obstructions shall not be placed in the required exit width except Projections permitted. 1003.2.5.4 & 1011.3
- All exit doors shall be openable from the inside without any special knowledge or effort. 1003.3.1.8

ELECTRICAL

- Power taps shall be of the polarized or grounded type, equipped with overcurrent protection and shall be listed. 605.4.1
- Relocatable power taps shall be directly connected to a permanently installed receptacle. 605.4.2
- Relocatable power taps shall not extend through walls, ceilings, floors, under doors, or floor coverings, or be subject to both environmental and physical damage. 605.4.3
- Extension cords shall not be a substitute for permanent wiring. 605.5
- Extension cords and flexible cords shall not be affixed to structures, extended through walls, ceilings or floors, or under doors or floor coverings and shall not be subject to environmental or physical damage. 605.5
- Extension cords shall be plugged directly into: approved receptacles, power tap, or multiplug adaptors, and shall serve only one appliance. 605.5.1
- Extension cords shall only be used with portable appliances and, with exception to approved multiplug adaptors, shall serve only one portable appliance. 605.5
- Extension cords shall not contain splices deterioration or damage. 605.5.3
- Extension cords shall be grounded when serving grounded portable appliances. 605.5.4
- Open junction boxes and open wiring splices shall be provided. 605.8
- Electrical motors shall be protected against excessive accumulations of dirt, oil, waste, and debris. 605.8
- Temporary wiring for electrical power and lighting installations is allowed for a period of less than or equal to 90 days. 905.9
- Portable electric lamps shall not be used in spraying areas during spraying operations. 1504.5.4

HIGH PILE STORAGE

- High-Pile Storage: Minimum aisles widths in high-pile storage areas shall be maintained during manual restocking shall be maintained as follows:
 - 24 inches for aisles less than or equal to 48 inches
 - At least one half the width of aisles greater than 48 inches. 2305.4
- Minimum aisle width for mechanical stocking in high-pile storage areas shall be at least 44 inches.
- Aisles in high-pile storage areas when restocking is not occurring shall be kept clear Of storage, waste materials and debris.
- Pile dimension and height limitations for high-pile storage areas shall be maintained. 2305.5
- Flue spaces in high-piled storage areas shall be maintained. 2305.7

HOT WORK AREAS

- Hot work areas shall not contain combustibles or shall be provided with appropriate shielding. 2604.1.1
- Floors shall be kept clean in hot work areas. 2604.1.3

FIRE EXTINGUISHERS

- Portable fire extinguishers shall be installed in the following locations: 906.3
In Group A, B, E, F, H, I, M, R-1, R-2, R-4 and S Occupancies per Table 906.3(1)
 - At least one Class A Fire Extinguisher for each 3,000 square feet of floor area per extinguisher is 11,250 square feet. The maximum travel distance to an extinguisher is 75 feet.

Fire Extinguishers continued:

- For ordinary (Moderate) hazard at least one Class 2-A fire extinguisher for each 1,500 square feet. The minimum travel distance to an extinguisher is 75 feet.
- For extra (High) hazard at least one Class 4-A fire extinguisher with a minimum travel distance to an extinguisher is 75 feet.
- Within 30 feet of commercial cooking equipment. 906.1
In areas where flammable or combustible liquids are stored, used or dispensed. 906.3
For areas with flammable or combustible liquids per Table 906.3(2).
 - Light (Low) hazard, Class 5-B within 30 feet and Class 10-B within 50 feet.
 - Ordinary (Moderate) hazard, Class 40-B within 30 feet and Class 80-B within 50 feet.
 - Extra (High) hazard, Class 40-B within 30 feet and Class 80-B within 50 feet.
- On each floor of structures under construction. 1414.1
 - Not less than one approved portable fire extinguisher at each stairway on all floor levels where combustible materials have accumulated.
 - At every storage and construction shed.
 - The code official is authorized to require additional extinguishers where special hazards exist.
- Fire extinguishers shall be in conspicuous and readily available locations. 906.5
- Fire extinguishers shall not be obstructed. 906.6
- Hand-held portable fire extinguishers not housed in cabinets, shall be installed on hangers or brackets supplied. 906.7
- Height above floor. 906.9
 - Fire extinguishers shall be installed so that its top is no more than 5 feet above the floor if less than 40 pounds.
 - That the top of the fire extinguisher is no more than 3.5 feet above the floor if exceeding 40 pounds.
- For additional required portable fire extinguishers, see Table 906.1 906.1

Table 906.1
Additional Required Portable Fire Extinguishers

<i>Subject</i>	<i>Section</i>
Asphalt kettles	303.5
Open burning	307.4
Open flames	308.4
Powered industrial trucks	309.4
Aircraft motor vehicle fuel-dispensing stations	1105.6
Heliports and helistops	1107.7
Dry cleaning plants	1208.4
Buildings under construction or demolition	1414.1
Roofing operations	1416.3
Spray-finished operations	1504.6.4
Dip-tank operations	1505.5
Lumberyards/woodworking facilities	1904.2
Recycling facilities	1908.8
Organic-coating areas	2003.5
Industrial ovens	2106.3
Marine Service Stations	2209.6.4
Repair garages	2210.6
Rack storage	2306.10
Tents and membrane structures	2407.1
Tire rebuilding/storage	2508.2
Welding and other hot work	2604.2.6
Combustible fibers	2903.6
Fireworks	3308.11
Flammable and combustible liquids, general	3403.2.1
Indoor storage of flammable and combustible liquids	3403.3.7.5.2
Solvent distillation units	3405.4.9
Farms and construction sites-flammable and combustible liquids	3406.2.7
Tank vehicles for flammable and combustible liquids	3406.6.5
Flammable solids	3606.5.7
Liquid Petroleum Gas (LPG)	3808.2

FIRE RESISTIVE CONSTRUCTION

- Fire resistance ratings of fire resistance rated construction shall be maintained including: Walls, Fire stops, Shaft enclosures, Partitions, or Floors. 703.1
- Openings made in fire resistance rated construction for the passage of pipes, Electrical conduits, wires, ducts, air transfer openings shall be protected with approved methods of resisting the passage of smoke and fire. 703.2
- Fire doors and smoke barrier doors shall not be blocked or obstructed or otherwise made inoperable.
- Fusible links shall be replaced promptly whenever fused or damaged.
- Fire door assemblies shall not be modified.
- When hold open devices in fire doors are out of service the door shall remain in a closed position. 703.2.2
- Swinging fire doors shall close from the full open position and latch automatically. 703.2.3
- Hanging and displaying of saleable goods or other decorative materials from acoustical ceiling systems that are part of a fire resistance – rated floor/ceiling or roof/ceiling assembly is prohibited. 703.3
- Horizontal and vertical sliding and rolling fire doors shall be inspected and tested annually to check for proper operation and full closure. A written record shall be maintained and be available for review by the code official. 703.4

FURNISHING/DECORATIVE MATERIALS

- Explosive and highly flammable furnishings or decorations shall not be used. 803.1.1
- Fire retardant coatings shall be maintained. 803.1.2
- Furnishings or other objects shall not obstruct exits or access to exits. 803.1.3
- Exposed foam plastic materials and unprotected materials containing foam plastics used for decorative purposes, stage scenery or exhibit booths shall be in accordance with this section. 803.2.1
- Motion picture screens shall be either flame resistant in accordance with NFPA 701 or comply with class B interior finish. 803.2.2
- Curtains, draperies, hangings and other decorative materials suspended from walls or ceilings shall be flame resistant in accordance with NFPA 701. 805.1

HOUSEKEEPING

- Storage of combustible materials in buildings shall be maintained in a neat, orderly manner. 315.2
- Storage shall be maintained 2 feet or more below the ceiling in a non-sprinklered building and 18 inches below sprinkler head deflectors in sprinklered buildings. 315.2.1
- Attic, under-floor and concealed spaces used for storage of combustible materials shall be protected on the storage side as required for one-hour fire resistive construction. 315.2.4
- Combustible waste containers larger than 40 gallons shall have lids and must be made of metal or approved combustible materials. 304.3.2
- Dumpsters and containers with an individual capacity of 1.5 cubic yards or larger shall not be stored in buildings. 404.3.3
- Storage is not permitted in boiler rooms, mechanical rooms, electrical equipment rooms. 315.2.3
- Combustibles are to be kept sufficient distance from heating appliances. 305.1 & 315.2
- Electric motors, filters on heating equipment and grease hoods must be kept clean and maintained in a safe operating condition. 605.8
- Combustible materials shall not be stored in exits or exit enclosures. 315.2.2
- Materials susceptible to spontaneous ignition such as oily rags, shall be stored in listed disposal containers. 304.3.1

HAZARDOUS MATERIALS

Incapitables & Aerosols

- Incapitable hazardous materials shall be separated when stored materials are in containers having a capacity of more than 5 lbs. Or 5 gallons. 2703.9.8
- Retail displays of aerosol products of 500 pounds or greater of level 2 and 3 aerosol shall maintain aisle widths greater than or equal to 4 feet on three sides of the display. 2806.6

Flammable & Combustible liquids & solids

- Shelf storage of flammable and combustible liquids shall be orderly. 3404.3.3.5.3
- Quantities of flammable and combustible liquids shall not exceed amounts necessary for demonstration, treatment, laboratory work, maintenance purposes and operations of equipment, and shall not exceed maximum allowable quantities. 3404.3.4.2
- Flammable and combustibles liquids used for maintenance and the operation of equipment exceeding 10 gallons shall be stored in liquid storage cabinets. 3404.3.4.4
- Class 1 flammable liquids shall not be stored in basements. 3404.3.5.1
- Piles of portable tanks and containers of flammable and combustible liquids shall be stored no closer than 3 feet from the nearest beam, chord, girder or other obstruction and shall be 3 feet below sprinkler deflectors. 3404.3.5.3
- Cleaning with flammable and combustible liquids should be in accordance with this Section.
- Aisle widths between piles of flammable solids should be maintained as the height of the piles or 4-feet whichever is greater. 3604.1.2

Flammable Gases

- Except for cylinders not exceeding 250 cubic feet each used for maintenance purposes, Patient care or operation of equipment flammable gasses shall not be stored or used. 3503.1.1
- Unclassified detonatable and Class I organic peroxides shall be stored in Hazardous materials storage cabinets with no other materials. 3903.1.1.1

Explosives & Ammunition

- Cellulose nitrate plastics articles are not allowed to be placed on tables more than 3 feet wide and 10 feet long and the tables must be spaced 3 feet apart. 4203.1
- Space under tables containing cellulose nitrate plastics shall be kept free from storage of any kind and accumulation of paper. 4203.2
- Cellulose nitrate plastics shall not be exposed directly underneath lighting. 4203.4
- Waste cellulose nitrate plastics shall be kept under water in metal receptacles. 4204.1.7
- Class 3 and 4 unstable (reactive) materials shall be stored in hazardous materials storage cabinets with no other materials. 4303.1.2.1
- Combustible materials shall not be stored within 50 feet of magazines. 3304.7.4
- Magazine floors shall be kept clean, dry and free of grit, paper, empty packages and rubbish. 3304.8.1
- Small arms ammunition shall not be stored with Division 1.1, Division 1.2 or Division 1.3 explosives unless the facility is specifically suited. 3306.2
- Storage of small arms ammunition in residences shall comply with this section. 3306.4
- Explosives are prohibited in residences with the exception of the storage of smokeless propellant, black powder and small arms primers for personal use. 3301.2.1

LP-Gas & Toxics

- Toxic or highly toxic compressed gases shall not be stored in offices, retail sales or classrooms. 3704.1.1.3
- LP-Gas containers shall not be used in basements or in above grade under floor spaces. 3803.2.1.1
- Portable containers of LP-Gas as specified by NFPA 58 shall not be used in buildings Except as allowed by Section 3803.2.1.1 through 2803.2.1.7. 3903.1.1.3

Hazardous Materials, LP-Gas & Toxics continued:

- Highly toxic solids and liquids in storage shall be isolated from other hazardous materials either through the use of hazard materials cabinets or other construction methods. 3703.1.4.2

Oxidizers & Organic peroxides

- Unclassified detonatable and Class 1 organic peroxides shall be stored in hazardous materials storage cabinets with no other materials. 3903.1.1.1
- Unclassified detonatable and Class I organic peroxides shall not be stored or used in offices or retail spaces. 3904.1
- Storage of Class I or II organic peroxides shall be on the ground floor. 3904.1.9
- Organic peroxides shall be maintained at least 2 feet from uninsulated metal walls. 3904.1.8
- Organic peroxide containers in storage areas shall be closed. 3904.1.8
- Class II oxidizers shall not be stored in basements except when in stationary tanks. 4004.1.8
- Class III organic peroxides shall not be stored in basements. 3904.1.9
- Maximum of 200 lbs. Of solid or 20 gallons of liquid Class 3 oxidizers is allowed in Group 1 occupancies. 4003.1.1.2
- Class 3 and 4 oxidizers shall be stored on the ground floor only. 4004.1.8
- Any amount of unclassified detonatable and Class I organic peroxides, shall be stored in hazardous materials storage cabinets in classrooms. 3903.1.1.4
- Class 4 liquid and solid oxidizers shall not be stored or used in office, or retail sales areas. 4003.1.1.1.3
- Except for containers not exceeding 250 cubic feet each used for maintenance purposes, or operation of equipment oxidizing gases shall not be stored or used. 4003.1.1.3
- Class 4 liquid and solid oxidizers in classrooms shall be stored in hazardous materials storage cabinets with no other materials. 4003.1.1.1.1

Reactives

- Unstable (reactive) materials shall not be stored in basements. 4304.1.6
- Class 2 water reactive solids and liquids shall not be stored in basements. 4404.1.6
- Class 2 or 3 water-reactive solids and liquids shall not be stored with flammable liquids. 4404.1.6
- Class 3 and 4 unstable (reactive) materials shall be stored in hazardous materials storage cabinets with no other materials. 4303.1.2.1
- Class 3 and 4 unstable (reactive) materials shall not be stored or used in residential, offices, factories, and mercantile occupancies. 4303.1.2,3 & 4

Combustible Storage

- The buffing area of tire rebuilding facilities shall not be allowed to have an accumulation of rubber partials. 2503.3

PERMITS

Operational Permits

105.6

Aerosol products
Amusement buildings
Aviation facilities
Carnivals and fairs
Battery systems
Cellulose nitrate film
Combustible dust production operations
Combustible gases
(Permit amounts for compressed gases) Table 105.6.9
Covered mall buildings
Cryogenic fluids
(Permit for Cryogenics) Table 105.6.11
Cutting and welding
Dry cleaning plants
Exhibits and trade shows
Explosives
Fire hydrants and valves
Flammable and combustible liquids
Floor finishing
Fruit and crop ripening
Fumigation and thermal insecticidal fogging
Hazardous materials
HPM
High-piled storage
Hot work operations
Industrial ovens
Lumber yards and wood working plants
Liquid or gas fueled vehicles or equipment in assembly buildings.
LP Gas
Magnesium
Miscellaneous combustible storage
Open burning
Open flames and candles
Organic coatings
Places of assembly
Private fire hydrants
Pyrotechnic special effects material
Pyroxylin plastics
Refrigeration equipment
Repair garages and service stations
Spraying and dripping
Storage of scrap tires and tire products
Temporary membrane structures, tents, canopies
Tire rebuilding plants
Waste handling
Wood products.

Construction Permits

105.7

Automatic fire-extinguishing systems
Compressed gases
Fire alarm and detection systems and related equipment.
Fire pumps and related equipment]
Flammable and combustible liquids
Hazardous materials
Industrial ovens
LP Gas
Private fire hydrants
Spraying and dipping
Standpipe systems
Temporary membrane structures, tents, and canopies

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