



Life Safety Code Considerations

As the City of Monmouth moves forward with redevelopment in the Downtown and other areas of the Community the following are key life safety code considerations of interest to potential developers.

1. The City has adopted the International Codes (Building, Fire, One- and Two-Family Dwelling Code and companion codes like Plumbing, Electrical or other referenced in the Building Code). The adoption includes the automatic update that is published on a three-year cycle (2009, 2012, 2015, 2018.....)
2. The City has adopted some additional codes and regulations in the Municipal Code related to developments. For example, there is a Fire Limit area in the Downtown that may have special provisions scattered throughout the Municipal Code. One of the original prohibitions of the Fire Limits excluded the use of open flames in this area.
3. The Building Code identifies occupancies that determine the code requirements for the property. Occupancies include Assembly, Business, Educational, Factory, High-Hazard, Institutional, Mercantile, Residential, Storage, Utility and Miscellaneous. Some occupancies have several categories including Assembly, Factory, High-Hazard, Institutional, Residential and Storage.
4. Bringing the occupancy up to current code happens when the occupancy classification changes like taking a former Mercantile occupancy like Touch of Country and turning it into an Assembly -3, Dance Hall. Bringing the occupancy up to current code is supposed to happen when there is a change in the division of the same occupancy. For example, if After Dark wants to include a restaurant or put in a theater that changes the division class within the occupancy. These changes would change the use from Assembly-3 to an Assembly-2 or Assembly-1.

Occupancies:

Assembly Group A - intended for 50 or more persons

Assembly, A-1 - usually spaces with fixed seating and used for motion picture theaters, symphony and concert halls, and theaters.

Assembly, A-2 - usually intended for food and/or drink consumption including banquet halls, bars, restaurants and night clubs

Assembly, A-3 - usually intended for worship, recreation or amusement

Assembly, A-4 - usually intended for indoor sporting events

Assembly, A-5 – usually intended for participation or viewing of outdoor activities

Business Group B – Banks, barber shops, out-patient clinic, civic administration, education occupancies above the 12th grade, laboratories, post office, telephone exchanges.

Educational Group E – 6 or more people gathered at any one time for educational purposes through the 12th grade; accessory rooms on churches with an occupant load less than 100 are classified as A-3; and day care with more than 5 children over the age of 2 ½ yrs.

Factory Industrial Group F – used for assembling, disassembling, fabricating, finishing, manufacturing, packaging, repair or processing operations that are not classified as hazardous or storage.

F-1 is moderate hazard (see list in code book)

F-2 is low hazard (beverages, brick, masonry, ceramic, foundries, glass products, gypsum, ice and metal products).

High Hazard Group H – usually places that produce or store products that constitute a physical or health hazard.

H-1, explosives

H-2, deflagration hazard or a hazard from accelerated burning (oxidizers, flammable gases, dusts)

H-3, structures containing materials that readily support combustion or pose a physical hazard

H-4, health hazards including corrosives, toxic materials

H-5, semiconductor fabrication facilities

Institutional Group I – people are cared for, detained, or restricted

I-1, housing more than 16 persons on a 24-hr basis due to age or mental disability live in a supervised environment

I-2, for more than 5 persons on a 24-hr. basis including surgical, psychiatric, nursing or custodial care

I-3, for more than 5 persons under restraint or security

I-4, day care for less than 24-hours (child or adult)

Mercantile Group M – used for the display and sale of merchandise and involves stocks of goods, wares, or merchandise incidental to such purposes and accessible to the public.

Residential Group R – building or portion thereof used for sleeping purposes.

R-1, occupants are transient in nature including hotels, motels and transient boarding houses

R-2, containing sleeping units or more than 2 dwelling units where occupants are primarily permanent

R-3, not R-1, R-2, R-4 or I and do not contain more than two dwelling units.

R-4, residential care/assisted living of more than 5 but less than 16 occupants excluding staff

Storage Group S – use of the building or portion thereof for storage

S-1, moderate hazard storage including aircraft hanger, baskets, bags, cloth, paper, furniture, grains, etc.

S-2, low hazard storage including beverages, cement in bags, dairy, empty cans, food products, meats,

Utility and Miscellaneous Group U – not classified in any occupancy above, agricultural buildings, barns, carports, fences more than 6 feet high, grain silos, retaining walls, stables, tanks, towers.

Occupancies requiring fire sprinkler systems: (Square footage may not be the only factor. Other factors can include occupancy load, fire separation, level of exit discharge, operation conducted in the building or storage.)

A-1 12,000 square feet or occupant load of 300 or more or other than the level of exit discharge

A-2 5,000 square feet, or occupant load of 100 or more or other than the level of exit discharge

A-3 12,000 square feet or occupant load of 300 or more or other than the level of exit discharge

A-4 12,000 square feet or occupant load of 300 or more or other than the level of exit discharge

A-5 Concession stands, retail areas, press boxes and other accessory areas greater than 1,000 sq ft.

E 20,000 square feet or any level below the level of exit discharge

F-1 12,000 square feet or areas more than 3 stories above grade or combined areas > 24,000 sq ft.

F-1 2,500 square feet for woodworking occupancies

H All Group H Occupancies

M 12,000 square feet or areas more than 3 stories above grade or combined areas > 24,000 sq ft.

M In mercantile occupancies where storage of merchandise is in high-piled or rack array.

R All structures with a Residential Group area

S-1 12,000 square feet or areas more than 3 stories above grade or combined areas > 24,000 sq ft.

S-1 Repair garages, 2 or more stories, w/basement and repair area > 10,000 sq. ft.

S-1 One-story repair garage greater than 12,000 square feet

S-1 Repair garages in basements

S-1 Structures where bulk tire storage exceeds 20,000 cubic feet.

S-2 Enclosed parking garages

S-2 Commercial parking garages for commercial trucks and buses > 5,000 sq. ft.

All All stories and basements > 1,500 square feet with no openings.

The sprinkler system standard is NFPA 13. In residential occupancies up to 4 stories in height an NFPA 13R system can be used. Limited area sprinkler systems serving fewer than 20 sprinkler heads on a single connection may be hooked to a domestic water supply when a wet automatic standpipe is not available.

A sprinkler system must have a fire department connection 2- 2 1/2 "connections and must be monitored (normally flow switches) and alarmed (to the fire alarm system if required or an indoor and outside water motor gong).

Commercial cooking systems must have and automatic fire-extinguishing system and hood. The exhaust hoods must comply with the International Mechanical Code.

Fire Alarm and Detection System Requirements:

Detection systems may require smoke detectors, heat detectors or manual pull stations based on occupancy type and intended use of spaces.

A - occupant load 300 or more with no sprinkler system.

B - occupant load > 500 or >100 other than the level of exit discharge with no sprinkler system

E - occupant load >50

F - 2 or more stories in height w/occupant load > 500 other than the level of exit discharge w/o sprklr.

H - in Group H-5 and occupancies used to manufacture organic coatings.

I - many requirements for institutional

M - occupant load > 500 or >100 other than the level of exit discharge and without a sprinkler system.

R - See 2009 Code.

Fire Extinguishers:

In new and existing Group A, B, E, F, H, I, M, R-1, R-2, R-4 and S occupancies. Number and type are dependent on whether the building has a sprinkler system with quick-response heads. Some occupancies may have special hazard areas like laboratories, computer rooms and generator rooms requiring a special type of fire extinguisher.

Means of Egress:

Exit - That portion of a means of egress system which is separated from other interior spaces of a building or structure by fire-resistance-rated construction and opening protectives as required to provide a protected path of egress travel between the exit access and the exit discharge. Exits include exterior exit doors at the level of exit discharge, vertical exit enclosures, exit passageways, exterior exit stairways, exterior exit ramps and horizontal exits.

Exit Access - that portion of a means of egress system that leads from any occupied portion of a building or structure to an exit.

Exit Discharge - that portion of a means of egress system between the termination of the exit and a public way.

In determining means of egress requirements, the number of occupants allowed by the type and square footage of the occupancy will be a determining factor in the width and number of exits, exitways and exit access.

Occupant loads are to be posted and determined by floor area in square foot per occupant.

Minimum egress width shall not be less than the total occupant load served by the means of egress multiplied by 0.3 inches per occupant for stairways and by 0.2 inches per occupant for other egress components.

In buildings with multiple means of egress the size shall be based so that the loss of one means of egress will not reduce the available capacity by less than 50%.

Panic and fire exit hardware – doors serving a Group H and doors serving rooms or spaces with an occupant load of 50 or more in a Group A or E occupancy shall not be provided with a latch or lock unless it is panic hardware or fire exit hardware.

Stairways shall be at least 44 inches wide. Stairways serving an occupant load of less than 50 can be not less than 36 inches.

Exit Signs:

Here is where exit signs are not required – in rooms or areas that require only one exit or exit access; use Group U; and individual sleeping units or dwelling units in Group R-1, R-2 or R-3; dayrooms, sleeping rooms or dormitories in Group I-3.

Exit signs shall be internally or externally illuminated.

Spaces that can have one exit or one exit access doorway – A, B, E, F, M, U, if the maximum occupant load is 49 or less; H-1, H-2, H-3 if the maximum occupant load is 3 or less; H-4, H-5, I-1, I-3, I-4, R if the maximum occupant load is 10 or less and S if the maximum occupant load is 29 or less. Exception: an E that is a daycare can have one exit if the maximum occupant load is 10 or less.

If the occupant load is 501–1,000 this space requires three or more exits or exit access doorways. If the occupant load is over 1,000 then four exits or exit access doorways are required from the space.

Exit Access Travel Distance:

A, E, F-1, M, R, S-1 is 200 ft without sprinklers and 250 feet with sprinklers
B is 200 feet without sprinklers and 300 feet with sprinklers
F-2, S-2 and U is 300 feet without sprinklers and 400 feet with sprinklers

I-1 sprinklers required and travel distance is 250 feet
H-1 sprinklers required and travel distance is 75 feet
H-2 sprinklers required and travel distance is 100 feet
H-3 sprinklers required and travel distance is 150 feet

H-4 sprinklers required and travel distance is 175 feet
H-5 sprinklers required and travel distance is 200 feet
I-2, I-3, I-4 sprinklers required and travel distance is 200 feet

Stories with one exit:

First story or basement

A, B, E, F, M, U, S – 49 occupants and 75 feet travel distance
H-2, H-3 – 3 occupants and 25 feet travel distance
H-4, H-5, I, R – 10 occupants and 75 feet travel distance
S – 29 occupants and 100 feet travel distance

Second story

B, F, M, S – 29 occupants and 75 feet travel distance
R-2 – 4 dwelling units and 50 feet travel distance

Third story

R-2 – 4 dwelling units and 50 feet travel distance

Emergency Lighting:

Required to light the means of egress including the exit discharge at all times
Illumination level shall not be less than 1 foot-candle (11 lux) at the floor level
Emergency power for the emergency lighting shall provide power for 90 minutes and shall consist of storage batteries, unit equipment or an on-site generator.

Exceptions:

Group U
Aisle accessways in Group A
Dwelling units and sleeping units in Groups R-1, R-2 and R-3
Sleeping units of Group I

Fire Limits:

Described in Municipal Code 150.135

Corner of North A St. and West Boston Ave south to West Archer west to North B St. south to West Second Ave. east to South A St. south to West Third Ave. east to South First St. north to East Second Ave, east to South Second St. north to East Boston Ave, west back to the point beginning at the corner of North A St. and West Boston Ave.

In the Fire Limits, Electrical Restrictions – Flexible, metallic-covered cable commonly known as BX or nonmetallic-covered cable commonly known as Romex will not be permitted for any class work within the commercial fire limit district of the city of in any assembly, business, educational, industrial, institutional or mercantile occupancy building outside of the commercial fire limit district but within the city limits.

Separation between Occupancies: (includes exits, windows, exit access, walls, floors/ceilings)

Normally the fire separation between occupancies in a mixed use building is as follows:

H-1 and H-2, 4 hour fire barrier

F-1, H-3 and S-1, 3 hour fire barrier

A, B, E, F-2, H-4, H-5, I, M, R, S-2, 2 hour fire barrier

U, 1 hour fire barrier

Separation of mixed occupancies – See section 302.3.2

Except for Group H and I-2 areas, where the building is equipped throughout with an automatic fire sprinkler system the fire-resistance ratings shall be reduced by 1 hour but to not less than 1 hour and to not less than the required floor construction according to the type of construction.