



# LIFE SAFETY CODE REVIEW

## APPLICABLE BUILDING CODES:

- A. FLORIDA BUILDING CODE, BUILDING, 2014 EDITION
- B. FLORIDA BUILDING CODE, EXISTING BUILDING, 2014 EDITION
- B. FLORIDA BUILDING CODE, MECHANICAL, 2014 EDITION
- C. FLORIDA BUILDING CODE, FUEL GAS, 2014 EDITION
- D. FLORIDA BUILDING CODE, PLUMBING, 2014 EDITION
- E. FLORIDA BUILDING CODE, ACCESSIBILITY, 2014 EDITION
- F. FIRE PREVENTION CODE, 2014 EDITION
- G. NFPA 1, UNIFORM FIRE CODE, FLORIDA EDITION, 2014 EDITION
- H. NFPA 101, LIFE SAFETY CODE, FLORIDA EDITION, 2014 EDITION
- I. NATIONAL ELECTRIC CODE: NFPA-70



## USE AND OCCUPANCY CLASSIFICATIONS:

Openings in exterior walls in adjacent stories shall be separated vertically to protect against fire spread on the exterior of the buildings where the openings are within 5 feet (1524 mm) of each other horizontally and the opening in the lower story is not a protected opening with a fire protection rating of not less than 3/4 hour. Such openings shall be separated vertically at least 3 feet (914 mm) by spandrel girders, exterior walls or other similar assemblies that have a fire-resistance rating of at least 1 hour or by flame barriers that extend horizontally at least 30 inches (762 mm) beyond the exterior wall. Flame barriers shall also have a fire-resistance rating of at least 1 hour. The unexposed surface temperature limitations specified in ASTM E 119 or UL 263 shall not apply to the flame barriers or vertical separation unless otherwise required by the provisions of this code.

### EXCEPTIONS:

1. This section shall not apply to buildings that are three stories or less above grade plane.
2. This section shall not apply to buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2
3. Open parking garages

### A. CLASSIFICATION: SECTION 304 BUSINESS GROUP B

#### 1. SPECIAL DETAILED REQUIREMENTS BASED ON USE AND OCCUPANCY (FBC, CHAPTER 4)

##### A. THIS SECTION DOES NOT APPLY TO THIS OCCUPANCY.

### B. CLASSIFICATION: SECTION 303 ASSEMBLY GROUP A-2; PUBLIC FOOD SERVICE ESTABLISHMENTS

#### 2. SPECIAL DETAIL REQUIREMENT BASED ON USE AND OCCUPANCY (FBC, CHAPTER 4)

##### I. WATER PLUMBING AND WAISTE:

Grease interceptors shall be designed and installed in accordance with the Florida Building Code, Plumbing.

##### II. PUBLIC BATHROOMS:

Food service establishment shall be provided with adequate and conveniently located bathroom facilities for its employees and guests in accordance with provisions of the Florida Building Code, Plumbing. Public access to toilet facilities shall not be permitted through food preparation, storage, or ware washing areas. Bathroom fixtures shall be of readily cleanable sanitary design. Public bathrooms shall be completely enclosed and shall have light-fitting, self-closing doors or, in public lodging establishments or bathrooms located outside a public food service, have entrances and exits constructed in such a manner as to ensure privacy of occupants.

##### III. VERMIN CONTROL:

Effective control measures shall be taken to protect against the entrance into the establishment, and the breeding or presence on the premises of rodents, flies, roaches and other vermin. All buildings shall be effectively rodentproofed. All windows used for ventilation must be screened, except when effective means of vermin control are used. Screening material shall not be less than 16 mesh to the inch or equivalent, lightweight and free of breaks.

##### IV. FIRE SAFETY:

All fire safety, protection and prevention equipment must be installed, approved, maintained and used in accordance with Chapter 509, Florida Statutes, Chapter 69A-55, Uniform Fire Safety Standards for Public Food Service Establishments, FAC, and the Uniform Fire Safety Standards as adopted by the State Fire Marshal.

##### V. ELECTRICAL WIRING:

To prevent fire or injury, defective electrical wiring shall be replaced and wiring shall be kept in good repair. Only a wall switch or approved pull cord shall be permitted in bathrooms. Electrical wiring shall be in accordance with the provisions of Florida Building Code, Building, Chapter 27.

##### VI. GAS APPLIANCES:

All appliances, including water heaters using gas, shall be properly vented in accordance with the Florida Building Code, Fuel Gas. All appliances shall have a nationally recognized testing laboratory seal such as AGA or UL seal. Heating appliances shall be properly sized in Btu input for room air space. Proper sizing of heating appliances shall be determined in accordance with the provisions of the Florida Building Code, Fuel Gas.

##### VII. SANITATION AND SAFETY REQUIREMENTS:

All bathrooms shall be of easy and convenient access to both patrons and employees and shall be located on the same floor of the premises served. For the purpose of this section, the same floor includes any intermediate levels between the floor and ceiling of any room or space not to exceed a vertical height of 6 feet (2438 mm). Public food service establishments whose occupancy is incidental to another occupancy may utilize public restrooms provided on the same floor. The travel distance may vary where adequate directional signs are provided and the number of fixtures is deemed satisfactory by the applicable plumbing authority. Each public food service establishment shall maintain a minimum of one public bathroom for each sex, properly designed, except as provided herein. (NA)

## VERTICAL SEPARATION:

Openings in exterior walls in adjacent stories shall be separated vertically to protect against fire spread on the exterior of the buildings where the openings are within 5 feet (1524 mm) of each other horizontally and the opening in the lower story is not a protected opening with a fire protection rating of not less than 3/4 hour. Such openings shall be separated vertically at least 3 feet (914 mm) by spandrel girders, exterior walls or other similar assemblies that have a fire-resistance rating of at least 1 hour or by flame barriers that extend horizontally at least 30 inches (762 mm) beyond the exterior wall. Flame barriers shall also have a fire-resistance rating of at least 1 hour. The unexposed surface temperature limitations specified in ASTM E 119 or UL 263 shall not apply to the flame barriers or vertical separation unless otherwise required by the provisions of this code.

### EXCEPTIONS:

1. This section shall not apply to buildings that are three stories or less above grade plane.
2. This section shall not apply to buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2
3. Open parking garages.

## FIRE WALLS:

Each portion of a building separated by one or more fire walls that comply with the provisions of this section shall be considered a separate building. The extent and location of such fire walls shall provide a complete separation. Where a fire wall also separates occupancies that are required to be separated by a fire barrier wall, the most restrictive requirements of each separation shall apply.

### A. PARTY WALLS:

Any wall located on a lot line between adjacent buildings, which is used or adapted for joint service between the two buildings, shall be constructed as a fire wall in accordance with Section 706 without openings and shall create separate buildings.

### B. STRUCTURAL STABILITY:

Fire walls shall have sufficient structural stability under fire conditions to allow collapse of construction on either side without collapse of the wall for the duration of time indicated by the required fire-resistance rating.

### C. MATERIALS:

Fire walls shall be of any approved noncombustible materials.

### D. FIRE WALL FIRE-RESISTANCE RATINGS:

GROUP	FIRE-RESISTANCE RATING (HOURS)
A, B, D, E, H-4, I, R-1, R-2, U	3 <sup>a</sup>
F-1, H-3 <sup>b</sup> , H-5, M, S-1	3
H-1, H-2	4 <sup>b</sup>
F-2, S-2, R-3, R-4	2

- a. In Type II or V construction, walls shall be permitted to have a 2-hour fire-resistance rating.
- b. For Group H-1, H-2 or H-3 buildings, also see Sections 415.4 and 415.5.

## HORIZONTAL CONTINUITY:

Fire walls shall be continuous from exterior wall to exterior wall and shall extend at least 18 inches (457 mm) beyond the exterior surface of exterior walls.

### EXCEPTIONS:

1. Fire walls shall be permitted to terminate at the interior surface of combustible exterior sheathing or siding provided the exterior wall has a fire-resistance rating of at least 1 hour for a horizontal distance of at least 4 feet (1220 mm) on both sides of the fire wall. Openings within such exterior walls shall be protected by opening protectives having a fire protection rating of not less than 3/4 hour.
2. Fire walls shall be permitted to terminate at the interior surface of noncombustible exterior sheathing, exterior siding or other noncombustible exterior finishes provided the sheathing, siding, or other exterior noncombustible finish extends a horizontal distance of at least 4 feet (1220 mm) on both sides of the fire wall.
3. Fire walls shall be permitted to terminate at the interior surface of noncombustible exterior sheathing where the building on each side of the fire wall is protected by an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2.

### EXTERIOR WALLS:

Where the fire wall intersects exterior walls, the fire-resistance rating and opening protection of the exterior walls shall comply with one of the following:

1. The exterior walls on both sides of the fire wall shall have a 1-hour fire-resistance rating with 3/4-hour protection where opening protection is required by Section 705.8. The fire-resistance rating of the exterior wall shall extend a minimum of 4 feet (1220 mm) on each side of the intersection of the fire wall to exterior wall. Exterior wall intersections at fire walls that form an angle equal to or greater than 180 degrees (3.14 rad) do not need exterior wall protection.
2. Buildings or spaces on both sides of the intersecting fire wall shall assume to have an imaginary lot line at the fire wall and extending beyond the exterior of the fire wall. The location of the assumed line in relation to the exterior walls and the fire wall shall be such that the exterior wall and opening protection meet the requirements set forth in Sections 705.5 and 705.8. Such protection is not required for exterior walls terminating at fire walls that form an angle equal to or greater than 180 degrees (3.14 rad).

## SHAFT ENCLOSURES:

Openings through a floor/ceiling assembly shall be protected by a shaft enclosure complying with this section.

### MATERIALS:

The shaft enclosure shall be of materials permitted by the building type of construction.

### FIRE-RESISTANCE RATING:

Shaft enclosures shall have a fire-resistance rating of not less than 2 hours where connecting four stories or more, and not less than 1 hour where connecting less than four stories. The number of stories connected by the shaft enclosure shall include any basements but not any mezzanines. Shaft enclosures shall have a fire-resistance rating not less than the floor assembly penetrated, but need not exceed 2 hours. Shaft enclosures shall meet the requirements of Section 703.2.1

### CONTINUITY:

Shaft enclosures shall be constructed as fire barriers in accordance with Section 707 or horizontal assemblies constructed in accordance with Section 712, or both, and shall have continuity in accordance with Section 707.5 for fire barriers or Section 712.4 for horizontal assemblies as applicable.

### EXTERIOR WALLS:

Where exterior walls serve as a part of a required shaft enclosure, such walls shall comply with the requirements of Section 705 for exterior walls and the fire-resistance-rated enclosure requirements shall not apply.

### DUCTS AND AIR TRANSFER OPENINGS:

Penetrations of a shaft enclosure by ducts and air transfer openings shall comply with Section 716.

## FIRE DOOR AND SHUTTER FIRE PROTECTION RATINGS:

Approved fire door and fire shutter assemblies shall be constructed of any material or assembly of component materials that conforms to the test requirements of Section 715.4.1, 715.4.2 or 715.4.3 and the fire protection rating indicated in Table 715.4. Fire door frames with transom lights, sidelights or both shall be permitted in accordance with Section 715.4.5. Fire door assemblies and shutters shall be installed in accordance with the provisions of this section and NFPA 80.

### EXCEPTIONS:

1. Labeled protective assemblies that conform to the requirements of this section or UL 10A, UL 14B and UL 14C for fire-rated fire door assemblies in an approved manner.
2. Floor fire door assemblies in accordance with Section 712.8

TYPE OF ASSEMBLY	REQUIRED ASSEMBLY RATING (HOURS)	MINIMUM FIRE DOOR AND FIRE SHUTTER ASSEMBLY RATING (HOURS)
Fire walls and fire barriers having a required fire-resistance rating greater than 1 hour	4 2 1 1/2	3 <sup>a</sup> 1 1/2 1 1/2
<b>Fire barriers having a required fire-resistance rating of 1 hour:</b>		
Shaft, exit enclosure and exit passageway walls	1	1
Other fire barriers	1	3/4
<b>Fire Partitions:</b>		
Corridor Walls	1	1/3 <sup>b</sup>
Other Fire Partitions	0.5 1 0.5	1/3 <sup>b</sup> 3/4 1/3
<b>Exterior Walls</b>	3 2 1	1 1/2 1 1/2 3/4
Smoke Barriers	1	1/3 <sup>b</sup>

- a. Two doors, each with a fire protection rating of 1 1/2 hours, installed on opposite sides of the same opening in a fire wall, shall be deemed equivalent in fire protection rating to one 3-hour fire door.
- b. For testing requirements, see Section 715.4.3

Fire-resistance-rated glazing tested as part of a fire-resistance-rated wall assembly in accordance with ASTM E 119 or UL 263 and labeled in accordance with Section 703.5 shall be permitted in fire doors and fire window assemblies in accordance with their listings and shall not otherwise be required to comply with this section.

### ALTERNATE METHODS

The application of any of the alternative methods listed in this section shall be based on the fire exposure and acceptance criteria specified in NFPA 252, NFPA 257 or UL 9. The required fire resistance of an opening protective shall be permitted to be established by any of the following methods or procedures:

1. Designs documented in approved sources.
2. Calculations performed in an approved manner.
3. Engineering analysis based on a comparison of opening protective designs having fire protection ratings as determined by the test procedures set forth in NFPA 252, NFPA 257 or UL 9.
4. Alternative protection methods as allowed by Section 104.11.

### FIRE-PROTECTION -RATED GLAZING:

Glazing in fire window assemblies shall be fire-protection rated in accordance with this section and Table 715.5. Glazing in fire door assemblies shall comply with Section 715.4.7. Fire-protection-rated glazing shall be tested in accordance with and shall meet the acceptance criteria of NFPA 257 or UL 9. Fire-protection-rated glazing shall also comply with NFPA 80. Openings in nonfire-resistance-rated exterior wall assemblies that require protection in accordance with Section 705.3, 705.6, 705.8.5 or 705.8.6 shall have a fire-protection rating of not less than 3/4 hour.

TYPE OF ASSEMBLY	REQUIRED ASSEMBLY RATING (HOURS)	MINIMUM FIRE WINDOW ASSEMBLY RATING (HOURS)
INTERIOR WALLS	FIRE WALLS	ALL
	FIRE BARRIERS	>1
	SMOKE BARRIERS	1
	FIRE PARTITIONS	1
EXTERIOR WALLS		>1
		1
PARTY WALLS	ALL	NP

## WALL AND CEILING FINISHES:

Interior wall and ceiling finish materials shall be classified for fire performance and smoke development in accordance with Section 803.1.1 or 803.1.2, except as shown in Sections 803.2 through 803.13. Materials tested in accordance with Section 803.1.2 shall not be required to be tested in accordance with Section 803.1.1.

### INTERIOR WALL AND CEILING FINISH MATERIALS:

Interior wall and ceiling finish materials shall be classified in accordance with ASTM E 84 or UL 723. Such interior finish materials shall be grouped in the following classes in accordance with their flame spread and smoke-developed indices.

- Class A: Flame spread index 0-25; smoke-developed index 0-450.
- Class B: Flame spread index 26-75; smoke-developed index 0-450.
- Class C: Flame spread index 76-200; smoke-developed index 0-450.

GROUP	SPRINKLERED			NONSPRINKLERED		
	EXIT ENCLOSURES AND EXIT PASSAGEWAYS <sup>a,2</sup>	CORRIDORS	ROOMS AND ENCLOSED SPACES <sup>1</sup>	EXIT ENCLOSURES AND EXIT PASSAGEWAYS <sup>a,2</sup>	CORRIDORS	ROOMS AND ENCLOSED SPACES <sup>1</sup>
A, B, A-2	B	B	C	A	A <sup>1</sup>	E
A-2, A-4, A-5	B	B	C	A	A <sup>1</sup>	C
B, D, E, M, A-1	B	C	C	A	B	C
R-4	B	C	C	A	B	B
F	C	C	C	B	C	C
H	B	B	C <sup>1</sup>	A	Ad	B
I-1	B	C	C	A	B	B
I-2	B	B	B <sup>1</sup>	A	Ad	B
I-3	A	A	C	A	Ad	B
R-2	C	C	C	B	B	C
R-3	C	C	C	C	C	C
S	C	C	C	B	B	C
U	NO RESTRICTIONS			NO RESTRICTIONS		

- a. Class C interior finish materials shall be permitted for wallscotting or paneling of not more than 1,000 square feet of applied surface area in the grade lobby where applied directly to a noncombustible base or over furring strips applied to a noncombustible base and fireblocked as required by Section 803.11.1.
- b. In exit enclosures of buildings less than three stories above grade plane of other than Group I-3, Class B interior finish for nonsprinklered buildings and Class C interior finish for sprinklered buildings shall be permitted.
- c. Requirements for rooms and enclosed spaces shall be based upon spaces enclosed by partitions. Where a fire-resistance rating is required for structural elements, the enclosing partitions shall extend from the floor to the ceiling. Partitions that do not comply with this shall be considered enclosing spaces and the rooms or spaces on both sides shall be considered one. In determining the applicable requirements for rooms and enclosed spaces, the specific occupancy thereof shall be the governing factor regardless of the group classification of the building or structure.
- d. Lobby areas in Group A-1, A-2 and A-3 occupancies shall not be less than Class B materials.
- e. Class C interior finish materials shall be permitted in places of assembly with an occupant load of 300 persons or less.
- f. For places of religious worship, wood used for ornamental purposes, trusses, paneling or chancel furnishing shall be permitted.
- g. Class B material is required where the building exceeds two stories.
- h. Class C interior finish materials shall be permitted in administrative spaces.
- i. Class C interior finish materials shall be permitted in rooms with a capacity of four persons or less.
- j. Class B materials shall be permitted as wallscotting extending not more than 48 inches above the finished floor in corridors.
- k. Finish materials as provided for in other sections of this code.
- l. Applies when the exit enclosures, exit passageways, corridors or rooms and enclosed spaces are protected by an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2

## AUTOMATIC SPRINKLER SYSTEMS:

Alternative automatic fire-extinguishing systems complying with Section 904 shall be permitted in lieu of automatic sprinkler protection where recognized by the applicable standard and approved by the fire code official.

Approved automatic sprinkler systems in new buildings and structures shall be provided in the locations described in Sections 903.2.1 through 903.2.12

### GROUP A-2: (EXEMPT FROM SPRINKLER PER 1, 2, AND 3 BELOW)

An automatic sprinkler system shall be provided for Group A-2 occupancies where one of the following conditions exists:

1. The fire area exceeds 5,000 square feet (464.5 m<sup>2</sup>).
2. The fire area has an occupant load of 100 or more; or
3. The fire area is located on a floor other than a level of exit discharge serving such occupancies.

### GROUP B: (EXEMPT, NOT REQUIRED BY FBC 2010)

## PORTABLE FIRE EXTINGUISHERS:

Portable fire extinguishers shall be installed in the following locations:

1. In new and existing Group A, B, E, F, H, I, M, R-1, R-2, R-4 and S occupancies
- (EXEMPTION: In new and existing Group A, B and F occupancies equipped throughout with quick response sprinklers, portable fire extinguishers shall be required only in locations specified in Items 2 through 6)
2. Within 30 feet (914 mm) of commercial cooking equipment
  3. In areas where flammable or combustible liquids are stored, used or dispensed
  4. On each floor of structures under construction, except Group R-3 occupancies, in accordance with the Florida Fire Prevention Code.
  5. Where required by the Florida Fire Prevention Code.
  6. Special-hazard areas, including but not limited to laboratories, computer rooms and generator rooms, where required by the fire code official.

	LIGHT (LOW) HAZARD OCCUPANCY	ORDINARY (MODERATE) HAZARD OCCUPANCY	EXTRA (HIGH) HAZARD OCCUPANCY
MINIMUM RATED SINGLE EXTINGUISHER	2-A <sup>a</sup>	2-A	4-A <sup>b</sup>
MAXIMUM FLOOR AREA PER UNIT OF A FEET	3,000 SQUARE FEET	1,500 SQUARE FEET	1,000 SQUARE FEET
MAXIMUM FLOOR AREA FOR EXTINGUISHER <sup>a</sup> FEET	11,250 SQUARE FEET	11,250 SQUARE FEET	11,250 SQUARE FEET
MAXIMUM TRAVEL DISTANCE TO EXTINGUISHER	75 FEET	75 FEET	75 FEET

## MEANS OF EGRESS:

The means of egress shall have a ceiling height of not less than 7 feet 6 inches (2286 mm)

### FLOOR SURFACE:

Walking surfaces of the means of egress shall have a slip-resistant surface and be securely attached

### ELEVATION CHANGE:

Where changes in elevation of less than 12 inches (305 mm) exist in the means of egress, sloped surfaces shall be used. Where the slope is greater than one unit vertical in 20 units horizontal (5-percent slope), ramps complying with Section 1010 shall be used. Where the difference in elevation is 6 inches (152 mm) or less, the ramp shall be equipped with either handrails or floor finish materials that contrast with adjacent floor finish materials.

### MEANS OF EGRESS CONTINUITY:

The path of egress travel along a means of egress shall not be interrupted by any building element other than a means of egress component as specified in this chapter. Obstructions shall not be placed in the required width of a means of egress except projections permitted by this chapter. The required capacity of a means of egress system shall not be diminished along the path of egress travel.

## EGRESS WIDTH:

### MINIMUM REQUIRED EGRESS WIDTH:

The means of egress width shall not be less than required by this section. The total width of means of egress in inches (mm) shall not be less than the total occupant load served by the means of egress multiplied by 0.3 inch (7.62 mm) per occupant for stairways and by 0.2 inch (5.08 mm) per occupant for other egress components. The width shall not be less than specified elsewhere in this code. Multiple means of egress shall be sized such that the loss of any one means of egress shall not reduce the available capacity to less than 50 percent of the required capacity. The maximum capacity required from any story of a building shall be maintained to the termination of the means of egress.

### EXIT SIGNS:

Exits shall be marked by an approved sign readily visible from any direction of exit access. Every exit sign shall be suitably illuminated by a reliable light source. Externally and internally illuminated signs shall be visible in both normal and emergency lighting.

EXCEPTION: Main exterior exit doors that obviously and clearly are identifiable as exits.

New sign placement shall be such that no point in an exit access corridor is in excess of the rated viewing distance or 100 feet (30 m) whichever is less, from the nearest sign. Every required sign shall be located and of such size, distinctive color and design as to be readily visible and shall provide contrast with interior finish or other signs. No equipment that impairs visibility of an exit sign shall be permitted, nor shall there be any brightly illuminated sign or object in or near the line of vision of the required exit sign of such a character as to detract attention from the exit sign. Floor proximity signs, where required, shall be in accordance with Section 1006.3.8.2 or 1006.3.8.3.

Externally illuminated signs shall have the word "EXIT" or other appropriate wording in plainly legible letters not less than 6 inches (152 mm) high with the principal strokes of letters not less than 3/4 inch (19 mm) wide. The word "EXIT" shall have letters of a width not less than 2 inches (51 mm), except the letter "I," and the minimum spacing between letters shall be not less than 3/8 inches (10 mm). Signs larger than the minimum established in this paragraph shall have letter widths, strokes and spacing in proportion to their height. Externally illuminated signs shall be illuminated by not less than 5 footcandles (50 lux) at the illuminated surface and shall have a contrast ratio of not less than 0.5.

## OCCUPANT LOAD:

### DESIGN OCCUPANT LOAD:

In determining means of egress requirements, the number of occupants for whom means of egress facilities shall be provided shall be determined in accordance with this section. Where occupants from accessory areas egress through a primary space, the calculated occupant load for the primary space shall include the total occupant load of the primary space plus the number of occupants egressing through it from the accessory area.

### AREA'S WITHOUT FIXED SEATING:

The number of occupants shall be computed at the rate of one occupant per unit of area as prescribed in Table 1004.1.1. For areas without fixed seating, the occupant load shall not be less than that number determined by dividing the floor area under consideration by the occupant per unit of area factor assigned to the occupancy as set forth in Table 1004.1.1. Where an intended use is not listed in Table 1004.1.1, the building official shall establish a use based on a listed use that most nearly resembles the intended use.

### MAXIMUM FLOOR AREA ALLOWANCES PER OCCUPANT:

FUNCTION OF SPACE	FLOOR AREA IN SQ. FT. PER OCCUPANT
ASSEMBLY WITH FIXED SEATS	SEE SECTION 1004.7