

# CHAPTER 8

## ALTERATIONS—LEVEL 2

**User note:**

**About this chapter:** Like Chapter 7, the purpose of this chapter is to provide detailed requirements and provisions to identify the required improvements in the existing building elements, building spaces and building structural system when a building is being altered. This chapter is distinguished from Chapters 7 and 9 by involving space reconfiguration that could be up to and including 50 percent of the area of the building. In contrast, Level 1 alterations (Chapter 7) do not involve space reconfiguration, and Level 3 alterations (Chapter 9) involve extensive space reconfiguration that exceeds 50 percent of the building area. Depending on the nature of alteration work, its location within the building, and whether it encompasses one or more tenants, improvements and upgrades could be required for the open floor penetrations, sprinkler system or the installation of additional means of egress such as stairs or fire escapes.

### SECTION 801 GENERAL

**801.1 Scope.** Level 2 alterations as described in Section 603 shall comply with the requirements of this chapter.

**Exception:** Buildings in which the reconfiguration is exclusively the result of compliance with the accessibility requirements of Section 306.7.1 shall be permitted to comply with Chapter 7.

**801.2 Alteration Level 1 compliance.** In addition to the requirements of this chapter, all work shall comply with the requirements of Chapter 7.

**[S] (~~801.3 System installations.~~** Requirements related to *work area* are not applicable where the Level 2 alterations are limited solely to one or more of the following:

- ~~1. Mechanical systems, electrical systems, fire protection systems and abatement of hazardous materials.~~
- ~~2. Windows, hardware, operating controls, electrical outlets and signs.~~
- ~~3. Alterations undertaken for the primary purpose of increasing the accessibility of a facility.)~~

**[S] 801.4 Compliance.** New construction elements, components, systems and spaces shall comply with the requirements of the *International Building Code*.

**Exceptions:**

1. Where windows are added they are not required to comply with the light and ventilation requirements of the *International Building Code*.
- ~~(2. Newly installed electrical equipment shall comply with the requirements of Section 806.~~
- 3) 2. The length of dead-end corridors in newly constructed spaces shall only be required to comply with the provisions of Section 804.7.
- ~~(4)~~ 3. The minimum ceiling height of the newly created habitable and occupiable spaces and corridors shall be 7 feet (2134 mm).
- ~~(5)~~ 4. Where provided in below-grade transportation stations, existing and new escalators shall be permitted to have a clear width of no less than 32 inches (815 mm).
- ~~(6)~~ 5. New structural members and connections shall be permitted to comply with alternative design criteria in accordance with Section 302.
6. Automatic sprinkler systems are required when new dwelling units are added to buildings according to Items 6.1 through 6.6 below. This exception is permitted to be used to add one unit after October 29, 1990.
  - 6.1. One unit is permitted to be added to a residential or commercial building without an automatic sprinkler system unless sprinklers are otherwise required by this section. If more than one unit is added, the new units shall be equipped with a sprinkler system.
  - 6.2. In buildings that do not comply with the provisions of this code for number of stories, allowable area, height or type of construction before the unit is added, an automatic sprinkler system shall be provided in the new unit. The addition of the new unit shall not be allowed if it increases the nonconformity.
  - 6.3. In buildings undergoing substantial alteration, an automatic sprinkler system shall be installed where required by this code for new construction.
  - 6.4. One unit is permitted to be added to an existing duplex without an automatic sprinkler system where both of the following conditions are met:

- 6.4.1. The project is considered a *substantial alteration* only because of the change in occupancy; and
- 6.4.2. The building complies with the requirements for building height and number of stories for a Group R-2 occupancy.
- 6.5. Where one unit is added to an existing duplex, sprinklers are required in the new unit and not in the existing units where all of the following conditions are met:
  - 6.5.1. The existing duplex does not comply with the requirements for building height and story count for a Group R-2 occupancy;
  - 6.5.2. The project is considered a *substantial alteration* only because of the change in occupancy;
  - 6.5.3. The new unit is constructed as an addition to the duplex;
  - 6.5.4. The new unit is separated from the existing duplex by a fire wall; and
  - 6.5.5. The addition by itself complies with the requirements for a Group R-2 occupancy.
- 6.6. A sprinkler system is not required when a Group U occupancy that is accessory to a Group R-3 occupancy is converted to a dwelling unit.
- 7. Ceilings in basements are permitted to project to within 6 feet 8 inches (2032 mm) of the finished floor, and beams, girders, ducts or other obstructions are permitted to project to within 6 feet 4 inches (1931 mm) of the finished floor.
- 8. Ceiling height in buildings in existence prior to October 17, 1979, shall be permitted to comply with rules promulgated by the *code official*.

## SECTION 802 BUILDING ELEMENTS AND MATERIALS

**802.1 Scope.** The requirements of this section are limited to *work areas* in which Level 2 *alterations* are being performed and shall apply beyond the *work area* where specified.

**802.2 Vertical openings.** Existing vertical openings shall comply with the provisions of Sections 802.2.1, 802.2.2 and 802.2.3.

**[S] 802.2.1 Existing vertical openings.** Existing interior vertical openings connecting two or more floors shall be enclosed with *approved* assemblies having a fire-resistance rating of not less than 1 hour with *approved* opening protectives.

**Exceptions:**

1. Where vertical opening enclosure is not required by the *International Building Code* or the *International Fire Code*.
2. Interior vertical openings other than stairways may be blocked at the floor and ceiling of the *work area* by installation of not less than 2 inches (51 mm) of solid wood or equivalent construction.
3. The enclosure shall not be required where:
  - 3.1. Connecting the main floor and mezzanines; or
  - 3.2. All of the following conditions are met:
    - 3.2.1. The communicating area has a low-hazard occupancy or has a moderate-hazard occupancy that is protected throughout by an automatic sprinkler system.
    - 3.2.2. The lowest or next-to-the-lowest level is a street floor.
    - 3.2.3. The entire area is open and unobstructed in a manner such that it is reasonable to assume that a fire in any part of the interconnected spaces will be readily obvious to all of the occupants.
    - 3.2.4. Exit capacity is sufficient to provide egress simultaneously for all occupants of all levels by considering all areas to be a single floor area for the determination of required exit capacity.
    - 3.2.5. Each floor level, considered separately, has not less than one-half of its individual required exit capacity provided by an exit or exits leading directly out of that level without having to traverse another communicating floor level or be exposed to the smoke or fire spreading from another communicating floor level.
4. In Group A occupancies, a minimum 30-minute enclosure shall be provided to protect all vertical openings not exceeding three stories.
5. In Group B occupancies, a minimum 30-minute enclosure shall be provided to protect all vertical openings not exceeding three stories. This enclosure, or the enclosure specified in Section 802.2.1, shall not be required in the following locations:
  - 5.1. Buildings not exceeding 3,000 square feet (279 m<sup>2</sup>) per floor.

- 5.2. Buildings protected throughout by an *approved* automatic fire sprinkler system.
6. In Group E occupancies, the enclosure shall not be required for vertical openings not exceeding three stories where the building is protected throughout by an *approved* automatic fire sprinkler system.
7. In Group F occupancies, the enclosure shall not be required in the following locations:
- 7.1. Vertical openings not exceeding three stories.
  - 7.2. Special-purpose occupancies where necessary for manufacturing operations and direct access is provided to not fewer than one protected stairway.
  - 7.3. Buildings protected throughout by an *approved* automatic sprinkler system.
8. In Group H occupancies, the enclosure shall not be required for vertical openings not exceeding three stories where necessary for manufacturing operations and every floor level has direct access to not fewer than two remote enclosed stairways or other *approved* exits.
9. In Group M occupancies, a minimum 30-minute enclosure shall be provided to protect all vertical openings not exceeding three stories. This enclosure, or the enclosure specified in Section 802.2.1, shall not be required in the following locations:
- 9.1. Openings connecting only two floor levels.
  - 9.2. Occupancies protected throughout by an *approved* automatic sprinkler system.
10. In Group R-1 occupancies, the enclosure shall not be required for vertical openings not exceeding three stories in ~~((the following locations: 10.1. Buildings))~~ buildings protected throughout by an *approved* automatic sprinkler system.
- ~~((10.2. Buildings with less than 25 dwelling units or sleeping units where every sleeping room above the second floor is provided with direct access to a fire escape or other *approved* second exit by means of an *approved* exterior door or window having a sill height of not greater than 44 inches (1118 mm) and where both of the following conditions are met:~~
- ~~10.2.1. Any exit access corridor exceeding 8 feet (2438 mm) in length that serves two means of egress, one of which is an unprotected vertical opening, shall have not fewer than one of the means of egress separated from the vertical opening by a 1-hour fire barrier.~~
  - ~~10.2.2. The building is protected throughout by an automatic fire alarm system, installed and supervised in accordance with the *International Building Code*.)~~
11. In Group R-2 occupancies, a minimum 30-minute enclosure shall be provided to protect all vertical openings not exceeding three stories. This enclosure, or the enclosure specified in Section 802.2.1, shall not be required in the following locations:
- 11.1. Vertical openings not exceeding two stories with not more than four dwelling units per floor.
  - 11.2. Buildings protected throughout by an *approved* automatic sprinkler system.
- ~~((11.3. Buildings with not more than four dwelling units per floor where every sleeping room above the second floor is provided with direct access to a fire escape or other *approved* second exit by means of an *approved* exterior door or window having a sill height of not greater than 44 inches (1118 mm) and the building is protected throughout by an automatic fire alarm system complying with Section 803.4.~~
- ~~12. One and two family dwellings.~~
- ~~13))~~ 12. Group S occupancies where connecting not more than two floor levels or where connecting not more than three floor levels and the structure is equipped throughout with an *approved* automatic sprinkler system.
- ~~((14))~~ 13. Group S occupancies where vertical opening protection is not required for open parking garages and ramps.

**802.2.2 Supplemental shaft and floor opening enclosure requirements.** Where the *work area* on any floor exceeds 50 percent of that floor area, the enclosure requirements of Section 802.2 shall apply to vertical openings other than stairways throughout the floor.

**Exception:** Vertical openings located in tenant spaces that are entirely outside the *work area*.

**802.2.3 Supplemental stairway enclosure requirements.** Where the *work area* on any floor exceeds 50 percent of that floor area, stairways that are part of the means of egress serving the *work area* shall, at a minimum, be enclosed with smoketight construction on the highest *work area* floor and all floors below.

**Exception:** Where stairway enclosure is not required by the *International Building Code* or the *International Fire Code*.

**802.3 Smoke compartments.** In Group I-2 occupancies where the *work area* is on a story used for sleeping rooms for more than 30 care recipients, the story shall be divided into not less than two compartments by smoke barrier walls in accordance with Section 407.5 of the *International Building Code* as required for new construction.

**802.4 Interior finish.** The interior finish and trim of walls and ceilings in exits and corridors in any *work area* shall comply with the requirements of the *International Building Code*.

**Exception:** Existing materials that do not comply with the requirements of the *International Building Code* shall be permitted to be treated with an approved fire-retardant coating in accordance with the manufacturer's instructions to achieve the required classification. Compliance with this section shall be demonstrated by testing the fire-retardant coating on the same material and achieving the required performance. Where the same material is not available, testing on a similar material shall be permitted.

**802.4.1 Supplemental interior finish requirements.** Where the *work area* on any floor exceeds 50 percent of the floor area, Section 802.4 shall apply to the interior finish and trim in exits and corridors serving the *work area* throughout the floor.

**Exception:** Interior finish within tenant spaces that are entirely outside the *work area*.

**802.5 Guards.** The requirements of Sections 802.5.1 and 802.5.2 shall apply in all *work areas*.

**802.5.1 Minimum requirement.** Every portion of a floor, such as a balcony or a loading dock, that is more than 30 inches (762 mm) above the floor or grade below and is not provided with guards, or those in which the existing guards are judged to be in danger of collapsing, shall be provided with guards.

**802.5.2 Design.** Where there are no guards or where existing guards must be replaced, the guards shall be designed and installed in accordance with the *International Building Code*.

**802.6 Fire-resistance ratings.** Where *approved* by the *code official*, buildings where an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2 of the *International Building Code* has been added, and the building is now sprinklered throughout, the required fire-resistance ratings of building elements and materials shall be permitted to meet the requirements of the current building code. The building is required to meet the other applicable requirements of the *International Building Code*.

Plans, investigation and evaluation reports, and other data shall be submitted indicating which building elements and materials the applicant is requesting the *code official* to review and approve for determination of applying the current building code fire-resistance ratings. Any special construction features, including fire-resistance-rated assemblies and smoke-resistive assemblies, conditions of occupancy, means-of-egress conditions, fire code deficiencies, *approved* modifications or *approved* alternative materials, design and methods of construction, and equipment applying to the building that impact required fire-resistance ratings shall be identified in the evaluation reports submitted.

## SECTION 803 FIRE PROTECTION

**[S] 803.1 Scope.** The requirements of this section shall be limited to *work areas* in which Level 2 *alterations* are being performed, and where specified they shall apply throughout the floor on which the *work areas* are located or otherwise beyond the *work area*.

**Exception:** The fire code official may modify or waive the fire protection requirements for Level 2 alteration projects in which the fire protection requirements constitute an excessive burden.

**803.1.1 Corridor ratings.** Where an *approved* automatic sprinkler system is installed throughout the story, the required fire-resistance rating for any corridor located on the story shall be permitted to be reduced in accordance with the *International Building Code*. In order to be considered for a corridor rating reduction, such system shall provide coverage for the stairway landings serving the floor and the intermediate landings immediately below.

**803.2 Automatic sprinkler systems.** Automatic sprinkler systems shall be provided in accordance with the requirements of Sections 803.2.1 through 803.2.6. Installation requirements shall be in accordance with the *International Building Code*.

**803.2.1 High-rise buildings.** In high-rise buildings, *work areas* that have exits or corridors shared by more than one tenant or that have exits or corridors serving an occupant load greater than 30 shall be provided with automatic sprinkler protection in the entire *work area* where the *work area* is located on a floor that has a sufficient sprinkler water supply system from an existing standpipe or a sprinkler riser serving that floor.

**803.2.1.1 Supplemental automatic sprinkler system requirements.** Where the *work area* on any floor exceeds 50 percent of that floor area, Section 803.2.1 shall apply to the entire floor on which the *work area* is located.

**Exception:** Occupied tenant spaces that are entirely outside the *work area*.

**[S] 803.2.2 Groups A, B, E, F-1, H, I-1, I-3, I-4, M, R-1, R-2, ((R-4;)) S-1 and S-2.** In buildings with occupancies in Groups A, B, E, F-1, H, I-1, I-3, I-4, M, R-1, R-2, ((R-4;)) S-1 and S-2, *work areas* that have exits or corridors shared by more than one tenant or that have exits or corridors serving an occupant load greater than 30 shall be provided with automatic sprinkler protection where both of the following conditions occur:

1. The *work area* is required to be provided with automatic sprinkler protection in accordance with the *International Building Code* as applicable to new construction.
2. The *work area* exceeds 50 percent of the floor area.

**Exception:** If the building does not have sufficient municipal water supply for design of a fire sprinkler system available to the floor without installation of a new fire pump, *work areas* shall be protected by an automatic smoke detection system throughout all occupiable spaces other than sleeping units or individual dwelling units that activates the occupant notification system in accordance with Sections 907.4, 907.5 and 907.6 of the *International Building Code*.

**803.2.2.1 Mixed uses.** In *work areas* containing mixed uses, one or more of which requires automatic sprinkler protection in accordance with Section 803.2.2, such protection shall not be required throughout the *work area* provided that the uses requiring such protection are separated from those not requiring protection by fire-resistance-rated construction having a minimum 2-hour rating for Group H and a minimum 1-hour rating for all other occupancy groups.

**803.2.3 Group I-2.** In Group I-2 occupancies, an automatic sprinkler system installed in accordance with Section 903.3.1.1 of the *International Fire Code* shall be provided in the following

1. In Group I-2, Condition 1, throughout the *work area*.
2. In Group I-2, Condition 2, throughout the *work area* where the *work area* is 50 percent or less of the smoke compartment.
3. In Group I-2, Condition 2, throughout the smoke compartment in which the work occurs where the *work area* exceeds 50 percent of the smoke compartment.

**803.2.4 Windowless stories.** Work located in a windowless story, as determined in accordance with the *International Building Code*, shall be sprinklered where the *work area* is required to be sprinklered under the provisions of the *International Building Code* for newly constructed buildings and the building has a sufficient municipal water supply without installation of a new fire pump.

**803.2.5 Other required automatic sprinkler systems.** In buildings and areas listed in Table 903.2.11.6 of the *International Building Code*, *work areas* that have exits or corridors shared by more than one tenant or that have exits or corridors serving an occupant load greater than 30 shall be provided with an automatic sprinkler system under the following conditions

1. The *work area* is required to be provided with an automatic sprinkler system in accordance with the *International Building Code* applicable to new construction; and
2. The building has sufficient municipal water supply for design of an automatic sprinkler system available to the floor without installation of a new fire pump.

**803.2.6 Supervision.** Fire sprinkler systems required by this section shall be supervised by one of the following methods:

1. *Approved* central station system in accordance with NFPA 72.
2. *Approved* proprietary system in accordance with NFPA 72.
3. *Approved* remote station system of the jurisdiction in accordance with NFPA 72.
4. Where *approved* by the *code official*, *approved* local alarm service that will cause the sounding of an alarm in accordance with NFPA 72.

**Exception:** Supervision is not required for the following:

1. Underground key or hub gate valves in roadway boxes.
2. Halogenated extinguishing systems.
3. Carbon dioxide extinguishing systems.
4. Dry- and wet-chemical extinguishing systems.
5. Automatic sprinkler systems installed in accordance with NFPA 13R where a common supply main is used to supply both domestic and automatic sprinkler systems and a separate shutoff valve for the automatic sprinkler system is not provided.

**803.3 Standpipes.** Where the *work area* includes exits or corridors shared by more than one tenant and is located more than 50 feet (15 240 mm) above or below the lowest level of fire department access, a standpipe system shall be provided. Standpipes shall have an *approved* fire department connection with hose connections at each floor level above or below the lowest level of fire department access. Standpipe systems shall be installed in accordance with the *International Building Code*.

**Exceptions:**

1. A pump shall not be required provided that the standpipes are capable of accepting delivery by fire department apparatus of not less than 250 gallons per minute (gpm) at 65 pounds per square inch (psi) (946 L/m at 448 KPa) to the topmost floor in buildings equipped throughout with an automatic sprinkler system or not less than 500 gpm at

65 psi (1892 L/m at 448 KPa) to the topmost floor in all other buildings. Where the standpipe terminates below the topmost floor, the standpipe shall be designed to meet (gpm/psi) (L/m/KPa) requirements of this exception for possible future extension of the standpipe.

2. The interconnection of multiple standpipe risers shall not be required.

**803.4 Fire alarm and detection.** An *approved* fire alarm system shall be installed in accordance with Sections 803.4.1 through 803.4.2. Where automatic sprinkler protection is provided in accordance with Section 803.2 and is connected to the building fire alarm system, automatic heat detection shall not be required.

An *approved* automatic fire detection system shall be installed in accordance with the provisions of this code and NFPA 72. Devices, combinations of devices, appliances, and equipment shall be *approved*. The automatic fire detectors shall be smoke detectors, except that an *approved* alternative type of detector shall be installed in spaces such as boiler rooms, where products of combustion are present during normal operation in sufficient quantity to actuate a smoke detector.

**803.4.1 Occupancy requirements.** A fire alarm system shall be installed in accordance with Sections 803.4.1.1 through 803.4.1.6. Existing alarm-notification appliances shall be automatically activated throughout the building. Where the building is not equipped with a fire alarm system, alarm-notification appliances within the *work area* shall be provided and automatically activated.

**Exceptions:**

1. Occupancies with an existing, previously *approved* fire alarm system.
2. Where selective notification is permitted, alarm-notification appliances shall be automatically activated in the areas selected.

**803.4.1.1 Group E.** A fire alarm system shall be installed in *work areas* of Group E occupancies as required by the *International Fire Code* for existing Group E occupancies.

**803.4.1.2 Group I-1.** An automatic fire alarm system shall be installed in *work areas* of Group I-1 *facilities* as required by Chapter 11 of the *International Fire Code* for existing Group I-1 occupancies.

**803.4.1.3 Group I-2.** An automatic fire alarm system shall be installed throughout Group I-2 occupancies as required by Chapter 11 of the *International Fire Code*.

**803.4.1.4 Group I-3.** A fire alarm system shall be installed in *work areas* of Group I-3 occupancies as required by the *International Fire Code*.

**803.4.1.5 Group R-1.** A fire alarm system shall be installed in Group R-1 occupancies as required by the *International Fire Code* for existing Group R-1 occupancies.

**803.4.1.6 Group R-2.** A fire alarm system shall be installed in *work areas* of Group R-2 apartment buildings as required by the *International Fire Code* for existing Group R-2 occupancies.

**803.4.2 Supplemental fire alarm system requirements.** Where the *work area* on any floor exceeds 50 percent of that floor area, Section 803.4.1 shall apply throughout the floor.

**Exception:** Alarm-initiating and notification appliances shall not be required to be installed in tenant spaces outside of the *work area*.

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## SECTION 804 MEANS OF EGRESS

**804.1 Scope.** The requirements of this section shall be limited to *work areas* that include exits or corridors shared by more than one tenant within the *work area* in which Level 2 *alterations* are being performed, and where specified they shall apply throughout the floor on which the *work areas* are located or otherwise beyond the *work area*.

**804.2 General.** The means of egress shall comply with the requirements of this section.

**Exceptions:**

1. Where the *work area* and the means of egress serving it complies with NFPA 101.
2. Means of egress complying with the requirements of the building code under which the building was constructed shall be considered to be compliant means of egress if, in the opinion of the *code official*, they do not constitute a distinct hazard to life.

**804.3 Group I-2.** In Group I-2 occupancies, in areas where corridors are used for movement of care recipients in beds, the clear width of ramps and corridors shall be not less than 48 inches (1219 mm).

**804.4 Number of exits.** The number of exits shall be in accordance with Sections 804.4.1 through 804.4.3.

**804.4.1 Minimum number.** Every story utilized for human occupancy on which there is a *work area* that includes exits or corridors shared by more than one tenant within the *work area* shall be provided with the minimum number of exits based on the occupancy and the occupant load in accordance with the *International Building Code*. In addition, the exits shall comply with Sections 804.4.1.1 and 804.4.1.2.

**[S] 804.4.1.1 Single-exit buildings.** A single exit or access to a single exit shall be permitted from spaces, any story or any occupied roof where one of the following conditions exists:

1. The occupant load, number of dwelling units and exit access travel distance do not exceed the values in Table 804.4.1.1(1) or Table 804.4.1.1(2).
2. In Group R-1 or R-2, buildings without an *approved* automatic sprinkler system, individual single-story or multiple-story dwelling or sleeping units shall be permitted to have a single exit or access to a single exit from the dwelling or sleeping unit provided one of the following criteria are met:
  - 2.1. The occupant load is not greater than 10 and the exit access travel distance within the unit does not exceed 75 feet (22 860 mm).
  - 2.2. The building is not more than three stories in height; all third-story space is part of dwelling with an exit access doorway on the second story; and the portion of the exit access travel distance from the door to any habitable room within any such unit to the unit entrance doors does not exceed 50 feet (15 240 mm).
3. In buildings of Group R-2 occupancy of any number of stories with not more than four dwelling units per floor served by an interior exit stairway; with a smokeproof enclosure in accordance with Sections 909.20 and 1023.12 of the *International Building Code* or an exterior stairway as an exit; and where the portion of the exit access travel distance from the dwelling unit entrance door to the exit is not greater than 20 feet (6096 mm).
4. In Group R-2 and R-3 occupancies, one means of egress is permitted within and from individual dwelling units with a maximum occupant load of 20 where the dwelling unit is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2 of the *International Building Code*.

**TABLE 804.4.1.1(1)  
STORIES WITH ONE EXIT OR ACCESS TO ONE EXIT FOR R-2 OCCUPANCIES**

STORY	OCCUPANCY	MAXIMUM NUMBER OF DWELLING UNITS	MAXIMUM EXIT ACCESS TRAVEL DISTANCE (feet)
Basement, first or second story above grade plane	R-2 <sup>a</sup>	4 dwelling units	50
Third story above grade plane and higher	NP	NA	NA

For SI: 1 foot = 304.8 mm.

NP = Not Permitted.

NA = Not Applicable.

- a. Group R-2, without an approved automatic sprinkler system and provided with emergency escape and rescue openings in accordance with Section 1031 of the *International Building Code*.

**TABLE 804.4.1.1(2)  
STORIES WITH ONE EXIT OR ACCESS TO ONE EXIT FOR OTHER OCCUPANCIES**

STORY	OCCUPANCY	MAXIMUM OCCUPANT LOAD PER STORY	MAXIMUM EXIT ACCESS TRAVEL DISTANCE (feet)
First story above or below grade plane	B, F-2, S-2 <sup>a</sup>	35	75
Second story above grade plane	B, F-2, S-2 <sup>a</sup>	35	75
Third story above grade plane and higher	NP	NA	NA

For SI: 1 foot = 304.8 mm.

NP = Not Permitted.

NA = Not Applicable.

- a. The length of exit access travel distance in a Group S-2 open parking garage shall be not more than 100 feet.

**[S] 804.4.1.2 Fire escapes.** ~~(required. For other than Group I-2, where more than one exit is required, an existing or newly constructed fire escape complying with Section 804.4.1.2.1 shall be accepted as providing one of the required means of egress.)~~ Fire escapes that are altered shall comply with this section. Existing fire escapes shall continue to be accepted as a component in the means of egress in *existing buildings only*.

**[S] ((804.4.1.2.1 Fire escape access and details.** Fire escapes shall comply with all of the following requirements:

1. Occupants shall have unobstructed access to the fire escape without having to pass through a room subject to locking.

2. Access to a new fire escape shall be through a door, except that windows shall be permitted to provide access from single dwelling units or sleeping units in Group R-1, R-2 and I-1 occupancies or to provide access from spaces having a maximum occupant load of 10 in other occupancy classifications.
  - 2.1. The window shall have a minimum net clear opening of 5.7 square feet (0.53 m<sup>2</sup>) or 5 square feet (0.46 m<sup>2</sup>) where located at grade.
  - 2.2. The minimum net clear opening height shall be 24 inches (610 mm) and net clear opening width shall be 20 inches (508 mm).
  - 2.3. The bottom of the clear opening shall not be greater than 44 inches (1118 mm) above the floor.
  - 2.4. The operation of the window shall comply with the operational constraints of the *International Building Code*.
3. Newly constructed fire escapes shall be permitted only where exterior stairways cannot be utilized because of lot lines limiting the stairway size or because of the sidewalks, alleys, or roads at grade level.
4. Openings within 10 feet (3048 mm) of fire escape stairways shall be protected by fire assemblies having minimum 3/4-hour fire-resistance ratings.
 

**Exception:** Opening protection shall not be required in buildings equipped throughout with an approved automatic sprinkler system.
5. In all buildings of Group E occupancy, up to and including the 12th grade, buildings of Group I occupancy, rooming houses and childcare centers, ladders of any type are prohibited on fire escapes used as a required means of egress.)

**[S] 804.4.1.2.1 Location.** Where located on the front of the building and where projecting beyond the building line, the lowest landing shall be not less than 8 feet (2438 mm) or more than 12 feet (3658 mm) above grade, and shall be equipped with a counterbalanced stairway to the street. In alleyways and thoroughfares less than 30 feet (9144 mm) wide, the clearance under the lowest landing shall be not less than 12 feet (3658 mm).

**[S] 804.4.1.2.2 Construction.** The fire escape shall be designed to support a live load of 100 pounds per square foot (4788 Pa) and shall be constructed of steel or other *approved noncombustible materials*. (~~Fire escapes constructed of wood not less than nominal 2 inches (51 mm) thick are permitted on buildings of Type V construction. Walkways and railings located over or supported by combustible roofs in buildings of Types III and IV construction are permitted to be of wood not less than nominal 2 inches (51 mm) thick.~~)

**804.4.1.2.3 Dimensions.** Stairways shall be not less than 22 inches (559 mm) wide with risers not more than, and treads not less than, 8 inches (203 mm). Landings at the foot of stairways shall be not less than 40 inches (1016 mm) wide by 36 inches (914 mm) long and located not more than 8 inches (203 mm) below the door.

**[S] 804.4.1.2.4 Opening protectives.** Doors and windows along the fire escape shall be protected with 3/4-hour opening protectives.

**804.4.2 Mezzanines.** Mezzanines in the *work area* and with an occupant load of more than 50 or in which the travel distance to an exit exceeds 75 feet (22 860 mm) shall have access to not fewer than two independent means of egress.

**Exception:** Two independent means of egress are not required where the travel distance to an exit does not exceed 100 feet (30 480 mm) and the building is protected throughout with an automatic sprinkler system.

**804.4.3 Main entrance—Group A.** Buildings of Group A with an occupant load of 300 or more shall be provided with a main entrance capable of serving as the main exit with an egress capacity of not less than one-half of the total occupant load. The remaining exits shall be capable of providing one-half of the total required exit capacity.

**Exception:** Where a main exit is not well defined or where multiple main exits are provided, exits shall be permitted to be distributed around the perimeter of the building provided that the total width of egress is not less than 100 percent of the required width.

**804.5 Egress doorways.** Egress doorways in any *work area* shall comply with Sections 804.5.1 through 804.5.5.

**804.5.1 Two egress doorways required.** Work areas shall be provided with two egress doorways in accordance with the requirements of Sections 804.5.1.1 and 804.5.1.2.

**804.5.1.1 Occupant load and travel distance.** In any *work area*, all rooms and spaces having an occupant load greater than 50 or in which the travel distance to an exit exceeds 75 feet (22 860 mm) shall have not fewer than two egress doorways.

**Exceptions:**

1. Storage rooms having a maximum occupant load of 10.
2. Where the *work area* is served by a single exit in accordance with Section 804.4.1.1.

**804.5.1.2 Group I-2.** In Group I-2, Condition 2 *work areas* that include altered care suites shall comply with Sections 407.4.4 through 407.4.4.6.2 of the *International Building Code*.

**804.5.2 Door swing.** In the *work area* and in the egress path from any *work area* to the exit discharge, all egress doors serving an occupant load greater than 50 shall swing in the direction of exit travel.

**804.5.2.1 Supplemental requirements for door swing.** Where the *work area* exceeds 50 percent of the floor area, door swing shall comply with Section 804.5.2 throughout the floor.

**Exception:** Means of egress within or serving only a tenant space that is entirely outside the *work area*.

**804.5.3 Door closing.** In any *work area*, all doors opening onto an exit passageway at grade or an exit stairway shall be self-closing or automatic-closing by listed closing devices.

**Exceptions:**

1. Where exit enclosure is not required by the *International Building Code*.
2. Means of egress within or serving only a tenant space that is entirely outside the *work area*.

**804.5.3.1 Supplemental requirements for door closing.** Where the *work area* exceeds 50 percent of the floor area, doors shall comply with Section 804.5.3 throughout the exit stairway from the *work area* to, and including, the level of exit discharge.

**804.5.4 Panic and fire exit hardware.** In any *work area*, and in the egress path from any *work area* to the exit discharge, in buildings or portions thereof of Group A assembly occupancies with an occupant load greater than 100, all required exit doors equipped with latching devices shall be equipped with *approved* panic or fire exit hardware in accordance with Section 1010.2.9 of the *International Building Code*.

**804.5.4.1 Supplemental requirements for panic hardware.** Where the *work area* exceeds 50 percent of the floor area, panic hardware shall comply with Section 804.5.4 throughout the floor.

**Exception:** Means of egress within a tenant space that is entirely outside the *work area*.

**804.5.5 Emergency power source in Group I-3.** Power-operated sliding doors or power-operated locks for swinging doors shall be operable by a manual release mechanism at the door. Emergency power shall be provided for the doors and locks in accordance with Section 2702 of the *International Building Code*.

**Exceptions:**

1. Emergency power is not required in *facilities* with 10 or fewer locks complying with the exception to Section 408.4.1 of the *International Building Code*.
2. Emergency power is not required where remote mechanical operating releases are provided.

**804.6 Openings in corridor walls.** Openings in corridor walls in any *work area* shall comply with Sections 804.6.1 through 804.6.4.

**Exception:** Openings in corridors where such corridors are not required to be rated in accordance with the *International Building Code*.

**804.6.1 Corridor doors.** Corridor doors in the *work area* shall not be constructed of hollow core wood and shall not contain louvers. Dwelling unit or sleeping unit corridor doors in *work areas* in buildings of Groups R-1, R-2 and I-1 shall be not less than 1-3/8-inch (35 mm) solid core wood or *approved* equivalent and shall not have any glass panels, other than *approved* wired glass or other *approved* glazing material in metal frames. Dwelling unit or sleeping unit corridor doors in *work areas* in buildings of Groups R-1, R-2 and I-1 shall be equipped with *approved* door closers. Replacement doors shall be 1-3/4-inch (44 mm) solid bonded wood core or *approved* equivalent, unless the existing frame will accommodate only a 1-3/8-inch (35 mm) door.

**Exceptions:**

1. Corridor doors within a dwelling unit or sleeping unit.
2. Existing doors meeting the requirements of *Guidelines on Fire Ratings of Archaic Materials and Assemblies* (Resource A) for a rating of 15 minutes or more shall be accepted as meeting the provisions of this requirement.
3. Existing doors in buildings protected throughout with an *approved* automatic sprinkler system shall be required only to resist smoke, be reasonably tight fitting and shall not contain louvers.
4. In group homes with not more than 15 occupants and that are protected with an *approved* automatic detection system, closing devices are not required.
5. Door assemblies having a fire protection rating of not less than 20 minutes.

**804.6.2 Transoms.** In all buildings of Group I-1, I-2, R-1 and R-2 occupancies, all transoms in corridor walls in *work areas* shall be either glazed with 1/4-inch (6.4 mm) wired glass set in metal frames or other glazing assemblies having a fire

protection rating as required for the door and permanently secured in the closed position or sealed with materials consistent with the corridor construction.

**804.6.3 Other corridor openings.** In any *work area*, unless protected in accordance with Section 716 of the *International Building Code*, any other sash, grille or opening in a corridor, and any window in a corridor not opening to the outside air, shall be sealed with materials consistent with the corridor construction.

**804.6.3.1 Supplemental requirements for other corridor opening.** Where the *work area* exceeds 50 percent of the floor area, Section 804.6.3 shall be applicable to all corridor windows, grills, sashes and other openings on the floor.

**Exception:** Means of egress within or serving only a tenant space that is entirely outside the *work area*.

**804.6.4 Supplemental requirements for corridor openings.** Where the *work area* on any floor exceeds 50 percent of the floor area, the requirements of Sections 804.6.1 through 804.6.3 shall apply throughout the floor.

**804.7 Dead-end corridors.** Dead-end corridors in any *work area* shall not exceed 35 feet (10 670 mm). In Group I-2 occupancies, dead-end corridors shall not exceed 30 feet (9144 mm).

**Exceptions:**

1. Where dead-end corridors of greater length are permitted by the *International Building Code*.
2. In other than Group A, I-2 and H occupancies, the maximum length of an existing dead-end corridor shall be 50 feet (15 240 mm) in buildings equipped throughout with an automatic fire alarm system installed in accordance with the *International Building Code*.
3. In other than Group A, I-2 and H occupancies, the maximum length of an existing dead-end corridor shall be 70 feet (21 356 mm) in buildings equipped throughout with an automatic sprinkler system installed in accordance with the *International Building Code*.
4. In other than Group A, I-2 and H occupancies, the maximum length of an existing, newly constructed, or extended dead-end corridor shall not exceed 50 feet (15 240 mm) on floors equipped with an automatic sprinkler system installed in accordance with the *International Building Code*.

**804.8 Means-of-egress lighting.** Means-of-egress lighting shall be in accordance with this section, as applicable.

**804.8.1 Artificial lighting required.** Means of egress in all *work areas* shall be provided with artificial lighting in accordance with the requirements of the *International Building Code*.

**804.8.2 Supplemental requirements for means-of-egress lighting.** Where the *work area* on any floor exceeds 50 percent of that floor area, means of egress throughout the floor shall comply with Section 804.8.1.

**Exception:** Means of egress within or serving only a tenant space that is entirely outside the *work area*.

**804.9 Exit signs.** Exit signs shall be in accordance with this section, as applicable.

**804.9.1 Work areas.** Means of egress in all *work areas* shall be provided with exit signs in accordance with the requirements of the *International Building Code*.

**804.9.2 Supplemental requirements for exit signs.** Where the *work area* on any floor exceeds 50 percent of that floor area, means of egress throughout the floor shall comply with Section 804.9.1.

**Exception:** Means of egress within a tenant space that is entirely outside the *work area*.

**804.10 Handrails.** The requirements of Sections 804.10.1 and 804.10.2 shall apply to handrails from the *work area* floor to, and including, the level of exit discharge.

**804.10.1 Minimum requirement.** Every required exit stairway that is part of the means of egress for any *work area* and that has three or more risers and is not provided with not fewer than one handrail, or in which the existing handrails are judged to be in danger of collapsing, shall be provided with handrails for the full length of the stairway on not fewer than one side. Exit stairways with a required egress width of more than 66 inches (1676 mm) shall have handrails on both sides.

**804.10.2 Design.** Handrails required in accordance with Section 804.10.1 shall be designed and installed in accordance with the provisions of the *International Building Code*.

**804.11 Refuge areas.** Where *alterations* affect the configuration of an area utilized as a refuge area, the capacity of the refuge area shall not be reduced below the required capacity of the refuge area for horizontal exits in accordance with Section 1026.4 of the *International Building Code*. Where the horizontal exit also forms a smoke compartment, the capacity of the refuge area for Group I-1, I-2 and I-3 occupancies and Group B ambulatory care *facilities* shall not be reduced below that required in Sections 407.5.3, 408.6.2, 420.6.1 and 422.3.2 of the *International Building Code*, as applicable.

**804.12 Guards.** The requirements of Sections 804.12.1 and 804.12.2 shall apply to guards from the *work area* floor to, and including, the level of exit discharge but shall be confined to the egress path of any *work area*.

**804.12.1 Minimum requirement.** Every open portion of a stairway, landing, or balcony that is more than 30 inches (762 mm) above the floor or grade below and is not provided with guards, or those portions in which existing guards are judged to be in danger of collapsing, shall be provided with guards.

**804.12.2 Design.** Guards required in accordance with Section 804.12.1 shall be designed and installed in accordance with the *International Building Code*.

## SECTION 805 STRUCTURAL

[S][BS] **805.1 General.** Structural elements and systems within buildings undergoing Level 2 *alterations* shall comply with ~~((this-section))~~ Section 304.

## [S] ((SECTION 806 ELECTRICAL

**806.1 New installations.** Newly installed electrical equipment and wiring relating to work done in any *work area* shall comply with all applicable requirements of NFPA 70 except as provided for in Section 806.4.

**806.2 Existing installations.** Existing wiring in all *work areas* in Group A-1, A-2, A-5, H and I occupancies shall be upgraded to meet the materials and methods requirements of Chapter 7.

**806.3 Health care facilities.** In Group I-2 *facilities*, ambulatory care *facilities* and outpatient clinics, any added portion of an existing electrical system shall be required to meet installation and equipment requirements in NFPA 99.

**806.4 Residential occupancies.** In Group R-2, R-3 and R-4 occupancies and buildings regulated by the *International Residential Code*, the requirements of Sections 806.4.1 through 806.4.7 shall be applicable only to *work areas* located within a dwelling unit.

**806.4.1 Enclosed areas.** Enclosed areas, other than closets, kitchens, basements, garages, hallways, laundry areas, utility areas, storage areas and bathrooms shall have not fewer than two duplex receptacle outlets or one duplex receptacle outlet and one ceiling or wall-type lighting outlet.

**806.4.2 Kitchens.** Kitchen areas shall have not fewer than two duplex receptacle outlets.

**806.4.3 Laundry areas.** Laundry areas shall have not fewer than one duplex receptacle outlet located near the laundry equipment and installed on an independent circuit.

**806.4.4 Ground fault circuit interruption.** Newly installed receptacle outlets shall be provided with ground fault circuit interruption as required by NFPA 70.

**806.4.5 Minimum lighting outlets.** Not fewer than one lighting outlet shall be provided in every bathroom, hallway, stairway, attached garage and detached garage with electric power, and to illuminate outdoor entrances and exits.

**806.4.6 Utility rooms and basements.** Not fewer than one lighting outlet shall be provided in utility rooms and basements where such spaces are used for storage or contain equipment requiring service.

**806.4.7 Clearance for equipment.** Clearance for electrical service equipment shall be provided in accordance with NFPA 70:))

## SECTION 807 MECHANICAL

[S] ((**807.1 Reconfigured or converted spaces.** Reconfigured spaces intended for occupancy and spaces converted to habitable or occupiable space in any *work area* shall be provided with natural or mechanical ventilation in accordance with the *International Mechanical Code*.

**Exception:** Existing mechanical ventilation systems shall comply with the requirements of Section 807.2:))

**807.1 Mechanical systems.** Mechanical systems shall comply with the *International Mechanical Code*.

[S] ((**807.2 Altered existing systems.** In mechanically ventilated spaces, existing mechanical ventilation systems that are altered, reconfigured or extended shall provide not less than 5 cubic feet per minute (cfm) (0.0024 m<sup>3</sup>/s) per person of outdoor air and not less than 15 cfm (0.0071 m<sup>3</sup>/s) of ventilation air per person, or not less than the amount of ventilation air determined by the Indoor Air Quality Procedure of ASHRAE 62.1:))

[S] ((**807.3 Local exhaust.** Newly introduced devices, equipment or operations that produce airborne particulate matter, odors, fumes, vapor, combustion products, gaseous contaminants, pathogenic and allergenic organisms, and microbial contaminants

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~~in such quantities as to affect adversely or impair health or cause discomfort to occupants shall be provided with local exhaust.))~~

### SECTION 808 PLUMBING

- \* **808.1 Health care facilities.** In Group I-2 *facilities*, ambulatory care *facilities* and outpatient clinics, any added portion of an existing medical gas system shall be required to meet installation and equipment requirements in NFPA 99.

### [S] ((SECTION 809 ENERGY CONSERVATION

~~**809.1 Minimum requirements.** Level 2 *alterations to existing buildings* or structures are permitted without requiring the entire building or structure to comply with the energy requirements of the *International Energy Conservation Code* or *International Residential Code*. The *alterations* shall conform to the energy requirements of the *International Energy Conservation Code* or *International Residential Code* as they relate to new construction only.))~~