

Building Code Summary

Building footprint: 4,780 sf
 Total Building Area: 9,560 sf
 Sprinkler System: No
 Fire Alarm System: Yes

NFPA 101 Brief Summary

Use: Mercantile Class C
 Business
 Industrial
 Ordinary Hazard
 New construction

Occ. Load: 124
 Const. Type: VB

IBC Brief summary

Use: Business, Factory, Mercantile
 Occ. Load: 99
 Const. Type: VB

Detailed Area Information

Tenant Space 1 (Mercantile/Factory/Industrial) Business: 4,155 sf
 Tenant Space 2 (Business): 1,970 sf
 Tenant Space 3 (Business): 1,930 sf

IECC 2009

301.1 Climate Zone 6A
 502.2(1) Element: Required
 Roofs – Insulation above deck R-20ci min.
 Walls – Wood Framed R-13 + R-7.5 min.
 Slab – Unheated R-10 for 24 inches below min.
 Entrance Doors U-0.80 max.
 Fenestration – all other U-0.55 max.

Detailed 2015 IBC Code Review

304.1 Business Group B (offices)
 306.3 Low-Hazard factory industrial, Group F-2
 309.1 Mercantile-Group M (retail/sales room)

504.3 Allowable building height in feet above grade plane:
 Groups B, F, M Type VB Unsprinkled 40 feet
 Allowable number of stories above grade plane:
 Group B Type VB Unsprinkled 2 stories
 Group F-2 Type VB Unsprinkled 2 stories
 Group M Type VB Unsprinkled 1 story

506.1 Allowable area factor in square feet:
 Group B Type VB Unsprinkled 9,000sf
 Group F-2 Type VB Unsprinkled 13,000sf
 Group M Type VB Unsprinkled 9,000sf

506.2.4 Mixed occupancy, multi-story building Each story of a mixed-occupancy building with more than one story above grade plane shall individually comply with the applicable requirements of Section 508.1.

508.4 Required separation distance of occupancies:
 Occupancy F-2 Occupancy B 2-hrs
 Occupancy F-2 Occupancy M 2-hrs
 Occupancy B Occupancy M No rating required

508.4.1 Separation made with fire barriers

601 Type VB construction: no rating requirements

602 Fire separation distance 10' ≤ X < 30' VB 0hr ext walls 0hr ext walls
 Fire separation distance X ≥ 30' VB 0hr ext walls 0hr ext walls

705.8 Maximum area of exterior wall openings based on fire separation distance and degree of opening protection:
 0 to less than 3 feet Unprotected, Nonsprinkled Not permitted
 3 to less than 5 feet Unprotected, Nonsprinkled Not permitted
 5 to less than 10 feet Unprotected, Nonsprinkled 10%
 10 to less than 15 feet Unprotected, Nonsprinkled 15%
 20 to less than 25 feet Unprotected, Nonsprinkled 45%
 25 to less than 30 feet Unprotected, Nonsprinkled 70%
 30 or greater Unprotected, Nonsprinkled No limit

705.11 Parapets shall be provided on exterior walls of buildings except where the following conditions exist:
 1. The wall is not required to be fire-resistant rated in accordance with Table 602.

707.3.1 The fire resistance rating of fire barrier separating building areas from a shaft shall comply with 713.4.
 707.3.2 Interior exit stairwell rating shall comply with 1023.1.
 707.3.3 Enclosures for exit access stairways rating shall comply with 713.4.
 707.3.4 Exit passageway rating shall comply with 1024.3.
 707.3.5 Horizontal exit rating shall comply with 1026.1

707.3.9 Fire barriers separated mixed occupancies shall comply with 508.4
 707.5 Fire barriers shall extend to the top of foundation or floor/ceiling assembly below to the underside of the floor or roof sheathing.

708.1 Corridor walls shall be constructed at fire partitions.
 708.3 Fire partitions shall have a fire resistance rating of not less than 1-hr
 Exception: Corridor walls permitted to have a 1/2 hr rating per 1020.1

708.4 Fire barriers shall extend to the top of foundation or floor/ceiling assembly below to the underside of the floor or roof sheathing

713.4 Shaft enclosures shall have a minimum fire resistance rating of less than 1 hr when connecting less than 4 stories.

803.11 Interior Wall and Ceiling Finish Requirements by Occupant:
 Interior Exit Stairways & Exit Passageways Corridors & Exit Access Stairs Rooms & Enclosed Spaces
 B & M (nonsprinkled) Class A Class B Class C

903.2.7 Sprinkler not required for Group M less than 12,000 sf
 906.1 Portable fire extinguishers are required in Group B, F, and M
 907.2.2 Group B No fire alarm system required for these circumstances
 907.2.4 Group F No fire alarm system required for these circumstances
 907.2.7 Group M No fire alarm system required for these circumstances

1004.1.1 Occupancy Load:
 Business: 8,055sf 100 gross = 81 occupants
 Industrial: 2,997sf 100 gross = 30 occupants
 Mercantile: 1,520sf 60 gross = 26 occupants
 Total Occupants = 81 occupants

1005.3.1 Min egress width: 0.3' for stairs
 1005.3.2 Min egress width: 0.2' for other egress components
 1006.2.1 Spaces with one exit or exit access doorway:
 Max Occ Load of Space Maximum path of travel (ft)
 Group M 49 75 ft
 Group B 49 100 ft (≤30 occupants)/ 75 ft (>30 occupants)
 Group F 49 75 ft

1008 Means of egress illumination shall be in accordance with this section
 1009.1 Accessible spaces shall not be provided with less than one accessible means of egress
 1009.2 Accessible means of egress shall be continuous to a public way.
 1009.3 In order to be considered part of an accessible means of egress, a stairway must have a clear width of 48 inches between handrails and shall incorporate an area of refuge.
 Exception 3 – The clear width of 48 inches is not required for stairways accessed from stairways in conjunction with a horizontal exit.

1009.6.5 Areas of refuge shall be provided with two-way communication system.
 1009.9 Area of refuge signage shall be in accordance with this section.

1010.1 Min clear door width: 32 inches
 1010.1.2.1 Doors shall swing in the direction of egress travel where serving an occupant load of 50 or more persons.

1011.2 Stair can be 36" clear for occupant load under 50
 1011.3 Stair headroom shall be not less than 80 inches
 1012.2 Ramps used as part of a means of egress shall have a running slope not steeper than one unit vertical in 12 units horizontal

1012.4 Max ramp rise: 30 inches
 1012.5.1 Min egress ramp width: 36 inches
 1012.6.3 Ramp landing length: 60 inches minimum.
 1012.10 Edge protection shall be provided on each side of ramp and at ramp landings.

1013.1 Exit signs shall be readily visible from any direction of egress travel.
 2. Egress from a room or space shall not pass through adjoining or intervening rooms or areas, except where such adjoining rooms or areas and the area served are accessory to one another.
 3. An exit access shall not pass through a room that can be locked to prevent egress.

1016.2.1 Where more than one tenant occupies any one floor of a building, each tenant space shall be provided with access to the required exits without passing through adjacent tenant spaces.

1017.2 Maximum exit access travel distance:
 M 200ft (w/o sprinkler)
 B 200ft (w/o sprinkler)
 F-2 300ft (w/o sprinkler)

1019.3 Exit access stairways shall be enclosed
 Exception 1—Exit access stairways that serve or atmospherically communicate between two stories.
 1020.1 Corridor fire resistance rating:
 Occupants served by corridor Required Fire Rating
 Greater than 30 1-hr

1020.2 Occupancy B, F, M
 Minimum corridor width:
 Minimum width
 With an occupant load less than 50 36

1020.4 Dead end corridors shall not exceed 20 ft.
 1023.2 Enclosures for interior exit stairs shall be constructed as fire barriers or horizontal assemblies, or both.
 Fire rating shall be 1-hr when connecting less than 4 stories.

1024.2 Min width of exit passageways shall be 44 inches, except exit passageways serving an occupant load of less than 50 then the min width may be reduced to 36 inches.
 1024.3 Exit passageway enclosures shall have a rating of not less than 1-hr.

1026.2 Min horizontal exit rating to be 2-hrs
 1028.1 Exits shall discharge directly to the exterior of the building. The exit discharge shall be at grade or shall provide a direct path of egress travel to grade.

1028.1(2) Not more than 50% of the number and minimum width or required capacity of the interior exit stairways and ramps is permitted to egress through a vestibule provided all of the conditions are met:
 2.1 The entire area of the vestibule is separated from areas below
 2.2 The depth from exterior is not >10 feet and length not >30 feet.
 2.3 The area is separated from the remainder of the level of exit discharge by a fire partition constructed in accordance with section 708.

2.4 The area is used only for means of egress and exits directly to the outside.
 1028.5 The exit discharge shall provide a direct and unobstructed access to a public way

Detailed NFPA 101

4.4.2 Prescriptive based
 6.1.40 Mercantile Occupancy (ch. 38)
 6.1.11 Business Occupancy (ch. 38)
 6.1.42 Industrial Occupancy (ch. 40)

6.1.14.4.1 Mercantile Business-2 hrs
 Mercantile Industrial-2 hrs
 Business Industrial-2 hrs

6.2.2.3 Ordinary Hazard of contents
 7.1.3.1 Corridors used as exit access and serving an area having an occupant load exceeding 30 shall be separated from other parts of the building by walls having not less than a 1-hr fire resistance rating.

7.1.3.2.1 Where exit is separated from other parts of the building, the separation shall have a min 1-hr fire resistance rating when connecting three or fewer stories.
 (8) Openings in exit enclosures shall be limited to door assemblies from normally occupied spaces and corridors and door assemblies for egress from the enclosure.

7.1.3.2.2 An exit enclosure shall provide a continuous protected path of travel to an exit discharge.
 7.1.4.1 Exit enclosure ceiling and floor finishes to be Class A or B.
 7.1.5.1 Min egress headroom: 7ft 6 in.

7.1.6.2 Changes in walking surfaces in means of egress shall not exceed 1/4". Changes in elevation exceeding 1/4", but not exceeding 1/2", shall be beveled with a slope of 1 in 2.
 7.1.7.1 Changes in level in means of egress shall be achieved with an approved means of egress where the elevation difference exceeds 21 inches.

7.1.7.2.1 Where a ramp is used, the presence and location of ramped portions of walkways shall be readily apparent.
 7.1.8 Guards shall be provided at the open sides of means of egress that exceed 30 inches above the floor or finished ground level.

7.2.1.2.3.1 Min door leaf width: 32 inches.
 7.2.1.3.3 Max door threshold: 1/2 inch.
 7.2.1.3.4 Raised thresholds and floor level changes in excess of 1/4 inch at door openings shall be beveled with a slope not steeper than 1 in 2.

7.2.1.4.2 Door leaves required to be of the side-hinged or pivoted-swinging type shall swing in the direction of egress where serving a room or area with an occupant load greater than 50.
 7.2.2.2.1.2 Min stair width: 36 inches clear.
 7.2.2.2.1(a) Max riser height: 7 in

Min riser height: 4 in
 Min tread depth: 11 in
 Min headroom: 6 ft 8 in
 Max height between landings: 12 ft

7.2.2.3.2.3 Every landing shall have a dimension, measured in the direction of travel, not less than the width of the stair.

7.2.2.4.1.1 Stairs required to have handrails on both sides.
 7.2.2.4.1 Handrails to be not less than 34 inches and not more than 38 inches above the surface of the tread.
 7.2.2.4.6 Handrails shall have a circular cross section with an outside diameter not less than 1 1/4 inches.
 7.2.2.4.9 Handrails shall return to the wall.

7.2.2.4.10 Handrails shall extend 12 inches beyond top riser and for the depth of one tread beyond bottom riser.
 7.2.2.5.1.1 Inside stairs serving as an exit or exit component shall be enclosed.
 7.2.2.5.2.2 Construction shall extend vertically from the finished ground level to a point 10 ft above the topmost landing of the stairs or to the roofline, whichever is lower.

7.2.2.5.3.2(1) Enclosed, usable space shall be permitted under stairs provided the space is separated from the stair enclosure by the same fire-resistant rating as the exit enclosure.
 7.2.2.6.3.1 Outside stairs serving two or fewer adjacent stories, including the store where the exit discharges, shall be permitted to be unprotected where there is a remotely located second stair.

7.2.2.6.6 Outside stairs shall be not less than 50 percent open on one side. Outside stairs shall be arranged to restrict accumulation of smoke.
 7.2.5.2(a) Minimum clear width: 44 inches
 Maximum slope: 1 in 12
 Maximum cross slope: 1 in 48
 Maximum rise for a single ramp run

7.2.5.3.1 (1) All ramps serving as a required means of egress shall be of permanent fixed construction.
 (4) The ramp floor and landings shall be solid and without perforation.

7.2.5.3.2 (1) Ramps shall have landings located at the top, at the bottom, and at door leaves opening onto the ramp.
 (2) The slope of the landing shall not be steeper than 1 in 48.
 (3) Every landing shall have a width not less than the width of the ramp.
 (4) Every landing shall not be less than 60 inches long in the direction of travel.

7.2.5.4.2 Handrails shall be provided along both sides of a ramp run with a rise greater than 6 inches.
 7.2.5.6.2 Outside ramps and landings shall be designed to minimize water accumulation on their surfaces.

7.2.6.2 An exit passageway shall be separated from other parts of the building as specified in 7.1.3.2.
 7.2.6.3 An exit passageway that serves as a discharge from a stair enclosure shall have not less than the same fire resistance rating an opening protective fire protection rating as those required for the stair enclosure

7.2.6.4.1 The width of an exit passageway shall be sized to accommodate the aggregate required capacity of all exits that discharge through it.
 (1) Where an exit passageway serves occupants of the level of exit discharge as well as other stories, the capacity shall not be required to be aggregate.

7.2.6.4.2 The minimum width of the exit passageway shall be not less than two-thirds of the width of the exit stair.

7.2.12.3 Where the exit providing egress from an area of refuge to a public way includes stairs, the clear width of landings and stair flights, measured between handrails shall not be less than 48 inches.
 (1) The minimum 48 inch clear width shall not be required where the area of refuge is separated from the remainder of the story by a horizontal exit.

7.2.12.2.5 The area of refuge shall be provided with a two-way communication system for communication between the area of refuge and a central control point. The door opening to the stair enclosure and the associated portion of the area of refuge shall be identified by signage

7.2.12.3.1 Each area of refuge shall be sized to accommodate one wheelchair space of 30 in x 48 in for every 200 occupants, based on the occupants served by the area of refuge. Such wheelchair spaces shall maintain the width of a means of egress to not less than required for the occupant load served and to not less than 36 inches.

7.2.12.3.4 Each area of refuge shall be separated from the remainder of the story by a barrier having a minimum 1-hr resistance rating.
 7.2.12.3.4.1 New fire door assemblies serving an area of refuge shall be smoke-leakage rated.
 7.2.12.3.4.3 Door assemblies in the barriers specified in 7.2.12.3.4 shall not have less than a 20-minute rating.

7.2.12.3.5.1 Each area of refuge shall be identified by a sign that reads "AREA OF REFUGE"

7.3.1.2 Occupancy Load:
 Business: 8,055sf 100 gross = 81 occupants
 Industrial: 2,997sf 100 gross = 30 occupants
 Mercantile: 1,520sf 60 gross = 26 occupants
 Total Occupants = 81 occupants

7.3.1.1.2 Where more than one means of egress is required, the means of egress shall be of a width and capacity that the loss of any one means of egress leaves the available not less than 50 percent of the required capacity.

7.3.1.4 Where an exit serves more than one story, only the occupant load of each story considered individually shall be used in computing the required capacity of the exit at that story, provided that the required egress capacity of the exit is not decreased in the direction of egress travel.

7.3.3.1 Stairway Egress Capacity Factor: 0.3
 Level Components and Ramp Egress Capacity Factor: 0.2

7.3.4.1 Minimum means of egress width: 36 inches
 7.5.1.3.2 Where two exits are required, they shall be located at a distance not less than one-half the length of the maximum overall diagonal dimension of the building or area to be served.

7.5.1.6 Exit access from rooms or spaces shall be permitted to be through adjoining or intervening rooms or areas, provided that such rooms or areas are accessory to the area served. Foyers, lobbies, and reception rooms constructed as required for corridors shall not be construed as intervening rooms.
 Access to an exit shall not be through storerooms other than provided in Chapter 36 or other spaces subject to locking.

7.5.2.1 Exit access and exit doors shall be designed and arranged to be clearly recognizable.
 7.5.3.1 Exit access shall be permitted by means of any exterior porch or balcony.
 7.5.3.2 The long side of the balcony or porch shall be at least 50 percent open and shall be arranged to restrict the accumulation of smoke.

7.5.3.3 Exterior exit access balconies shall be separated from the interior of the building by walls and opening protectives as required by corridors, unless the exterior exit access balcony is served by at least two remote stairs that can be accessed without any occupant traveling past an unprotected opening to reach one of the stairs, or unless dead ends on the exterior exit access do not exceed 20ft.

7.5.4.1.1 Access within the allowable travel distance shall be provided to not less than one accessible area of refuge or one accessible exit providing an accessible route to an exit discharge.
 7.5.4.6 To be considered part of an accessible means of egress, a smoke barrier in accordance with Section 8.5 with not less than a 1-hr fire resistance rating, or a horizontal exit shall discharge to an area of refuge.

7.8 Means of egress shall be illuminated in accordance with this section.
 7.9 Emergency lighting shall be in accordance with this section.

8.3 Fire barriers shall be constructed in accordance with this section.
 8.5 Smoke barriers shall be constructed in accordance with this section.
 8.6.1 Ever floor that separates stories in a building shall be constructed as a smoke barrier.
 8.6.2 Openings through floors shall be enclosed with fire barrier walls, shall be continuous floor to floor/roof, and shall be protected as appropriated for the fire resistance rating of the fire barrier.

8.6.5 Minimum fire resistance rating for the enclosure of floor openings shall be:
 (2) 1-hr fire barriers.

9.6 Fire detection, alarm, and communications systems shall be in accordance with this section.

Chapter 10 Interior finish, contents, and furnishings shall be in conformance with this chapter.

36.1.4.2-1(3) Class C mercantile
 36.1.4.2-4(3) Where tenant spaces are separated by fire barriers with a 2-hour fire rating, each tenant shall be individually classified.

36.1.6 No Min construction requirement
 36.2.4.3 A single means of egress is permitted in a Class C mercantile occupancy, provided that that travel distance to the exit does not exceed 75 ft.
 36.2.5.2.2 Corridor and corridors shall not exceed 50 ft.

36.2.5.3(1) Common path of travel shall not exceed 75 ft in occupancies classified as ordinary hazard.
 36.2.6.1 Travel distance shall not exceed 160 ft.
 36.3.2 Interior wall and ceiling finishes shall be Class A or B.
 36.3.4.1 Class A mercantile occupancies shall be provided with a fire alarm — Not class A; alarm not required.
 36.3.5 Automatic sprinkler system not required for occupancies less than 3 stories and with less than 12,000 sf.

36.3.5.3 Portable fire extinguishers shall be provided.
 38.1.6 No minimum construction requirement.
 38.2.4.1 (2) Not less than two separate means of egress

38.2.4.3 (3) Not less than two separate exits shall be accessible from every part of every story
 38.2.4.2 Exit access, as required by 38.2.4.1(3), shall be permitted to include a single exit access path for the distances permitted as common travel.
 38.2.4.3 A single exit shall be permitted for a room or area with a total occupant load of fewer than 100 persons, provided that the following are met:
 (1) The exit shall discharge directly to the outside at the level of exit discharge for the building.
 (2) The total distance of travel form any point, including travel within the exit, shall not exceed 100ft.
 (3) The total distance of travel shall be on the same floor level, or if traversing of stairs is necessary, such stairs shall not exceed 15 ft in height, and the stairs shall be provided with complete enclosures.
 (4) A single outside stair shall be permitted to serve all floors permitted within the 15 ft vertical travel limitation.

38.2.5.2.2 Dead-end corridors shall not exceed 20 ft.
 38.2.5.3.3 Common path of travel shall not exceed 75 ft.
 38.2.6.2 Travel distance shall not exceed 200ft.

38.3.1.1 Vertical openings shall be enclosed.
 38.3.2.1 Interior wall and ceiling finish material shall be Class A or Class B in exits and exit access corridors.
 38.3.2.2 Interior wall and ceiling finishes shall be Class A, B, or C in other areas.

38.3.4.1 Fire alarm shall be provided if any one of the condition exists
 1. Building is 3 or more stories in height.
 2. Occupancy is 50 or more above or below the exit discharge level.
 3. occupancy is subjected to 300 or more occupants
 None of the above conditions apply. Hence, we don't require fire alarm.

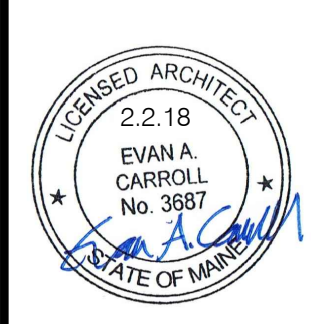
40.1.4.1.1 General Industrial Occupancy
 40.1.6 No minimum construction requirements
 40.2.4.1.2 A single means of egress shall be permitted in low and ordinary hazard industrial occupancies, provided that the exit can be reached within the distance permitted as a common path of travel.

40.2.5 Max Dead End Corridor (unsprinkled): 50 ft
 Common Path of Travel (unsprinkled): 50 ft
 Maximum Travel Distance to exits (unsprinkled): 200 ft

40.2.9.1 Emergency lighting shall be provided
 40.3.3.2 Interior wall and ceiling finish materials shall be Class A, B, or C in operating areas.
 40.3.4.4 A fire alarm system is required if building occupant load is over 100.
 40.3.4.2 Initiation shall be manual or via automatic fire detection system.

40.3.4.3.1 The fire alarm shall provide occupant notification.
 40.3.5 No extinguishment required.
 A7.6
 New Class C Mercantile 75 ft 20 ft 200 ft
 New Business 75 ft 20 ft 200 ft
 New General Industrial 50 ft 50 ft 200 ft
 * Building not equipped with automatic sprinkler system

ADA Title III states that the building does not require the installation of an elevator that is less than 3 stories or has less than 3000 sf per story.



REVISIONS

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