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1 LU|HSW

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2018 IBC SIGNIFICANT CHANGES & REVIEW

Presented By - Ali Alaman, P.E., Fire Protection Engineer : Code Consultant
OCCUPANCY GROUPS

ASSEMBLY GROUP A

BUSINESS GROUP B

EDUCATIONAL GROUP E

FACTORY GROUP F

HIGH-HAZARD GROUP H

INSTITUTIONAL GROUP I

MERCANTILE GROUP M

RESIDENTIAL GROUP R

STORAGE GROUP S

UTILITY AND MISCELLANEOUS GROUP U
ASSEMBLY GROUP A: CODE CHANGES

AUTOMATIC SPRINKLER SYSTEM (§903.2.1)

• REQUIRED BASED ON OCCUPANT LOAD, FIRE AREA, LOCATION ABOVE LEVEL OF EXIT DISCHARGE

• REQUIRED UNDER OCCUPIED ROOFS (§ 903.2.1.6): IN NEW AND EXISTING BUILDINGS
  • REQUIRED FROM THE STORY OR ROOF TO THE LEVEL OF EXIT DISCHARGE
  • ROOF OCCUPANT LOAD: 100 FOR A-2 OR 300 OR OTHER A OCCUPANCIES
    • EXCEPTION: SPRINKLERS NOT REQUIRED FOR ASSEMBLY OCCUPANCIES ON ROOF OF OPEN PARKING GARAGES

• REQUIRED WHERE MULTIPLE FIRE AREAS OF A OCCUPANCIES SHARE EXITING AND HAVE A TOTAL OCCUPANT LOAD OF 300 OR MORE (§ 903.2.1.7)
BUSINESS GROUP B: CODE ADDITIONS (§304.1)

1. FOOD PROCESSING ESTABLISHMENTS & COMMERCIAL KITCHENS NOT ASSOCIATED WITH DINING FACILITIES & LESS THAN 2,500 FT²
   - IF OVER 2,500 FT²: GROUP F OCCUPANCY
   - IF ASSOCIATED WITH DINING FACILITY: GROUP A-2 OCCUPANCY

2. TRAINING & SKILL DEVELOPMENT NOT IN A SCHOOL
   - SPECIFIES INCLUSION OF:
     - TUTORING CENTERS
     - MARTIAL ARTS STUDIOS
     - GYMNASTICS
   - NOT TO BE CONSIDERED GROUP E OCCUPANCY
GROUP B: HIGHER EDUCATION LABORATORIES (§428)

DEFINITION

LABORATORIES IN GROUP B OCCUPANCIES USED FOR EDUCATIONAL PURPOSES ABOVE THE 12TH GRADE. STORAGE, USE, AND HANDLING CHEMICALS IN SUCH LABORATORIES SHALL BE LIMITED TO PURPOSES RELATED TO TESTING, ANALYSIS, TEACHING, RESEARCH, OR DEVELOPMENTAL ACTIVITIES ON A NONPRODUCTION BASIS.

PROVISIONS

• ALLOWS MORE QUANTITIES OF HAZARDOUS MATERIALS THAN PREVIOUSLY PERMITTED WITHOUT BEING GROUP H
• REQUIRES FIRE SEPARATIONS FROM OTHER LABORATORY SUITES & NONLABORATORY AREAS
• REQUIRES EMERGENCY POWER AND ENHANCED SPRINKLER PROTECTION
GROUP E STORM SHELTERS: CODE ADDITION (§423.4)

WHERE REQUIRED:

- NEWLY CONSTRUCTED SCHOOLS WITH OCCUPANT LOAD > 50
- 250 MPH TORNADO WIND SPEED
  - EXCEPTIONS:
    - DAYCARE FACILITIES
    - GROUP E ACCESSORY TO PLACES OF WORSHIP
- IF A NEW BUILDING IS ADDED TO AN EXISTING SCHOOL, THE REQUIRED STORM SHELTER MUST PROVIDE CAPACITY FOR ENTIRE SITE (IEBC 1106)
  - ONLY IF NEW BUILDING IS LARGE ENOUGH

ICC 500

250 MPH WIND
INSTITUTIONAL GROUP I: REVIEW

OCCUPANTS ARE INCAPABLE OF SELF-PRESERVATION

GROUP I-1: CUSTODIAL CARE
ASSISTED LIVING, REHAB, RESIDENTIAL BOARD & CARE FACILITIES

GROUP I-2: MEDICAL CARE
HOSPITALS, NURSING HOMES, FOSTER CARE, DETOX FACILITIES

GROUP I-3:
CORRECTIONAL CENTERS, PRISONS

GROUP I-4:
ADULT & CHILD DAYCARE
INSTITUTIONAL GROUP I-1: CUSTODIAL CARE (§308.2)

CONDITION 1:
• COMPLETELY CAPABLE OF EVACUATING THE BUILDING WITHOUT ASSISTANCE
• SAME REQUIREMENTS AS PREVIOUS I-1 OCCUPANCY
• SIMILAR TO RESIDENTIAL BOARD AND CARE OCCUPANCY IN NFPA 101

CONDITION 2:
• REQUIRES LIMITED VERBAL OR PHYSICAL ASSISTANCE WHILE EVACUATING THE BUILDING
• ADDITIONAL PROTECTION FEATURES INCLUDE:
  • SMOKE BARRIERS
  • INCREASED SPRINKLER REQUIREMENTS
ASSISTED LIVING HOUSING: CODE ADDITIONS

HOUSING UNITS (§420.7)

• SHARED LIVING SPACES CAN NOW BE OPEN TO FIRE-RATED CORRIDORS
  • 6 SPECIFIC CONDITIONS MUST BE MET

COOKING FACILITIES (§420.8)

• ROOMS OR SPACES THAT CONTAIN DOMESTIC COOKING APPLIANCES CAN NOW BE OPEN TO CORRIDORS
  • 9 SPECIFIC CONDITIONS MUST BE MET
CONDITION 1:
• DOES NOT PROVIDE EMERGENCY CARE
  • NURSING HOMES, FOSTER CARE FACILITIES

CONDITION 2:
• DOES PROVIDE EMERGENCY CARE
  • HOSPITALS
  • SIMILAR TO HEALTH CARE OCCUPANCY IN NFPA 101
I-2 CONDITION 1 NURSING HOMES: CODE ADDITIONS

HOUSING UNITS (§407.2.5)
- Shared living spaces can now be open to corridors
  - 5 specific conditions must be met

COOKING FACILITIES (§407.2.6)
- Rooms or spaces that contain domestic cooking appliances can now be open to corridors
  - 13 specific conditions must be met
I-2 SMOKE COMPARTMENTS: CODE CHANGE (§407.5.1)

- GROUP I-2 SMOKE COMPARTMENTS CAN HAVE AN AREA OF 22,500 SF

EXCEPTIONS ADDED:

- GROUP I-2, CONDITION 2 SMOKE COMPARTMENTS ARE PERMITTED TO HAVE AN AREA OF UP TO 40,000 SF FOR:
  - COMPARTMENTS CONTAINING SINGLE-PATIENT SLEEPING ROOMS AND SUITES
  - COMPARTMENTS WITHOUT PATIENT SLEEPING ROOMS

- MAX TRAVEL DISTANCE WITHIN A SMOKE COMPARTMENT TO A SMOKE BARRIER DOOR IS 200 FEET (§ 407.5.2)
I-2 SMOKE COMPARTMENT EGRESS: CODE ADDITION

INDEPENDENT EGRESS (§407.5.4)

• A SMOKE COMPARTMENT WITHOUT AN EXIT IS REQUIRED TO HAVE EGRESS INTO 2 SMOKE COMPARTMENTS
  • REFUGE AREA REMAINS THE SAME
  • HORIZONTAL ASSEMBLY REQUIREMENTS STILL APPLY
ACCESSORY STORAGE: CODE CHANGE (§311.1.1)

MODIFICATION:

- IN OTHER THAN I-2, ACCESSORY STORAGE SHALL BE PART OF THE MAIN OCCUPANCY IT SERVES
  - IF NOT ACCESSORY, THEN MIXED-USE
  - NO LONGER LIMITED IN SQUARE FOOTAGE OR PERCENTAGE THRESHOLD

PREVIOUSLY:

- STORAGE ROOMS HAVE BEEN INCIDENTAL, ACCESSORY, MIXED-USE
  - NOW, IT IS A SPECIAL KIND OF ACCESSORY WHICH MAKES ALLOWABLE HEIGHT AND AREA MORE STRAIGHTFORWARD
INCIDENTAL USES: CODE ADDITIONS (TABLE 509)

MODIFICATIONS:

- **OFFERS MORE FLEXIBILITY FOR HEIGHT & AREA OF THE BUILDING**

- **INCLUDES MORE SUPPORT SPACES, MAINLY WITHIN I-2 OCCUPANCIES AND AMBULATORY CARE FACILITIES AS PART OF THE PREDOMINANT OCCUPANCY**

<table>
<thead>
<tr>
<th>ROOM OR AREA</th>
<th>SEPARATION AND/OR PROTECTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Furnace room where any piece of equipment is over 400,000 Btu per hour input</td>
<td>1 hour or provide automatic sprinkler system</td>
</tr>
<tr>
<td>Rooms with boilers where the largest piece of equipment is over 15 psi and 10 horsepower</td>
<td>1 hour or provide automatic sprinkler system</td>
</tr>
<tr>
<td>Refrigerant machinery room</td>
<td>1 hour or provide automatic sprinkler system</td>
</tr>
<tr>
<td>Hydrogen fuel gas rooms, not classified as Group H</td>
<td>1 hour in Group B, F, M, S and U occupancies, 2 hours in Group A, E, I and R occupancies.</td>
</tr>
<tr>
<td>Incinerator rooms</td>
<td>2 hours and provide automatic sprinkler system</td>
</tr>
<tr>
<td>Paint shops, not classified as Group H, located in occupancies other than Group F</td>
<td>2 hours or 1 hour and provide automatic sprinkler system</td>
</tr>
<tr>
<td>In Group E occupancies, laboratories and vocational shops not classified as Group H</td>
<td>1 hour or provide automatic sprinkler system</td>
</tr>
<tr>
<td>In Group I-2 occupancies, laboratories not classified as Group H</td>
<td>1 hour and provide automatic sprinkler system</td>
</tr>
<tr>
<td>In ambulatory care facilities, laboratories not classified as Group H</td>
<td>1 hour or provide automatic sprinkler system</td>
</tr>
<tr>
<td>Laundry rooms over 100 square feet</td>
<td>1 hour or provide automatic sprinkler system</td>
</tr>
<tr>
<td>In Group I-2, laundry rooms over 100 square feet</td>
<td>1 hour</td>
</tr>
<tr>
<td>Group I-3 cells and Group I-2 patient rooms equipped with padded surfaces</td>
<td>1 hour</td>
</tr>
<tr>
<td>In Group I-2, physical plant maintenance shops</td>
<td>1 hour</td>
</tr>
<tr>
<td>In ambulatory care facilities or Group I-2 occupancies, waste and linen collection rooms with containers that have an aggregate volume of 10 cubic feet or greater</td>
<td>1 hour</td>
</tr>
<tr>
<td>In other than ambulatory care facilities and Group I-2 occupancies, waste and linen collection rooms over 100 square feet</td>
<td>1 hour or provide automatic sprinkler system</td>
</tr>
<tr>
<td>In ambulatory care facilities or Group I-2 occupancies, storage rooms greater than 100 square feet</td>
<td>1 hour</td>
</tr>
</tbody>
</table>
INCIDENTAL USES: REVIEW (TABLE 509, §509.4.2)

PROTECTION:

- TWO OPTIONS WHERE SPRINKLERED

<table>
<thead>
<tr>
<th></th>
<th>1-HOUR FIRE BARRIER SEPARATION</th>
<th>CONSTRUCTION CAPABLE OF RESISTING THE PASSAGE OF SMOKE</th>
</tr>
</thead>
<tbody>
<tr>
<td>WALLS</td>
<td>1-hour to deck</td>
<td>0-hour to ceiling or deck</td>
</tr>
<tr>
<td>DOORS</td>
<td>45-minute</td>
<td>Self-closing &amp; tight fitting</td>
</tr>
<tr>
<td>DAMPERS</td>
<td>None in ducted openings</td>
<td>None in ducted openings</td>
</tr>
<tr>
<td></td>
<td>Fire damper in unducted openings</td>
<td>Smoke damper in unducted openings (including boots &amp; transfer grilles)</td>
</tr>
<tr>
<td>FIRESTOPPING</td>
<td>1-hour</td>
<td>0-hour – use mineral wool to fill any gaps</td>
</tr>
</tbody>
</table>
MIXED USE: CODE CHANGE (§508)

OPTIONS:

• ACCESSORY
• SEPARATED MIXED USE
• NON-SEPARATED MIXED USE

SEPARATED MIXED USE - NEW LANGUAGE ADDED:

508.4.1 Occupancy classification. Separated occupancies shall be individually classified in accordance with Section 302.1. Each separated space shall comply with this code based on the occupancy classification of that portion of the building. The most restrictive provisions of Chapter 9 that apply to the separate occupancies shall apply to the total non-fire-barrier-separated occupancy areas. Occupancy separations that serve to define fire area limits established in Chapter 9 for requiring a fire protection system shall also comply with Section 901.7.
OCCUPANCY SEPARATIONS

- **DO NOT LIMIT SPRINKLER REQUIREMENTS**

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<thead>
<tr>
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<td>S</td>
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<td>NP</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>2</td>
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<tr>
<td>NS</td>
<td>N</td>
<td>N</td>
<td>2</td>
<td>NP</td>
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<td>1</td>
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<td>NP</td>
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<td>2</td>
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<tr>
<td>S</td>
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<tr>
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<td>4</td>
<td>2</td>
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<tr>
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<td>2</td>
<td></td>
<td>2</td>
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<td>2</td>
</tr>
</tbody>
</table>

FIRE AREA SEPARATIONS

- **DO LIMIT SPRINKLER REQUIREMENT**

<table>
<thead>
<tr>
<th>OCCUPANCY GROUP</th>
<th>FIRE-RESISTANCE RATING (hours)</th>
</tr>
</thead>
<tbody>
<tr>
<td>H-1, H-2</td>
<td>4</td>
</tr>
<tr>
<td>F-1, H-3, S-1</td>
<td>3</td>
</tr>
<tr>
<td>A, B, E, F-2, H-4, H-5, I, M, R, S-2</td>
<td>2</td>
</tr>
<tr>
<td>U</td>
<td>1</td>
</tr>
</tbody>
</table>
OCCUPIED ROOFS: CODE ADDITION

CLASSIFICATION OF OUTDOOR AREAS (§302.1)
- TO BE CLASSIFIED SIMILAR TO THE OCCUPANCY IT MOST CLOSELY RESEMBLES

OCCUPIED ROOFS (§503.1.4)
- HEIGHT (IN STORIES) IS BASED UPON THE UPPERMOST STORY PERMITTED BY TABLE 504.4
  - IF NOT, THEN THE BUILDING MUST BE EQUIPPED WITH SPRINKLERS AND OCCUPANT NOTIFICATION PROVIDED ON ROOF
  - PERMITTED ON TOP OF TYPE I OR II OPEN PARKING GARAGES
- OCCUPIED ROOF AREA IS NOT INCLUDED IN TOTAL BUILDING AREA
- ENCLOSURES OF OCCUPIED ROOFS LIMITED TO 48”
FIRE WALLS: CODE CHANGES (§503.1, §706.1)

2012 IBC
  • FIRE WALLS USED TO SEPARATE BUILDINGS FOR ALL PURPOSES

2018 IBC
  • FIRE WALLS CAN ONLY BE USED TO SEPARATE BUILDINGS FOR THE PURPOSES OF:
    • HEIGHT & AREA LIMITATIONS
    • TYPE OF CONSTRUCTION
  • BUILDINGS PERMITTED TO HAVE SHARED BUILDING SERVICES
HORIZONTAL BUILDING SEPARATION: CODE CHANGE (§510)

- The building below the 3-hour horizontal assembly is no longer limited to one story above grade plane
- Any occupancy allowed below the separation except Group H
- Vertical offsets are permitted if the offset & its supporting construction are 3-hour rated
### ROOF CONSTRUCTION: CODE CHANGE (TABLE 601)

- **Added highlighted phrase in footnote ‘b’**

<table>
<thead>
<tr>
<th>BUILDING ELEMENT</th>
<th>TYPE I</th>
<th>TYPE II</th>
<th>TYPE III</th>
<th>TYPE IV</th>
<th>TYPE V</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
<td>B</td>
<td>A</td>
<td>B</td>
<td>HT</td>
</tr>
<tr>
<td>Primary structural frame&lt;sup&gt;f&lt;/sup&gt; (see Section 202)</td>
<td>3&lt;sup&gt;a,b&lt;/sup&gt;</td>
<td>2&lt;sup&gt;a,b&lt;/sup&gt;</td>
<td>1&lt;sup&gt;b&lt;/sup&gt;</td>
<td>0</td>
<td>1&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>Bearing walls</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exterior&lt;sup&gt;e&lt;/sup&gt;</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Interior</td>
<td>3&lt;sup&gt;a&lt;/sup&gt;</td>
<td>2&lt;sup&gt;a&lt;/sup&gt;</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Nonbearing walls and partitions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exterior</td>
<td></td>
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<tr>
<td>Nonbearing walls and partitions</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Interior&lt;sup&gt;d&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Floor construction and associated secondary members (see Section 202)</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Roof construction and associated secondary members (see Section 202)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For SI: 1 foot = 304.8 mm.

- **a.** Roof supports: Fire-resistance ratings of primary structural frame and bearing walls are permitted to be reduced by 1 hour where supporting a roof only.
- **b.** Except in Group F-1, H, M and S-1 occupancies, fire protection of structural members in roof construction shall not be required, including protection of primary structural frame members, roof framing and decking where every part of the roof construction is 20 feet or more above any floor immediately below. Fire-retardant-treated wood members shall be allowed to be used for such unprotected members.
Light-frame construction. studs, columns and boundary elements that are integral elements in walls of light-frame construction and are located entirely between the top and bottom plates or tracks shall be permitted to have required fire-resistance ratings provided by the membrane protection provided for the wall.

Applies to:

- Wood or cold-formed steel construction – stick built
- Columns located between the top and bottom plates
HORIZONTAL ASSEMBLY MEMBRANE PENETRATIONS: CODE ADDITIONS (§714.5.2)

FLOOR/CEILING PROTECTION:

- A DOUBLE WOOD TOP PLATE OF A WALL ASSEMBLY IS PERMITTED TO PENETRATE THE CEILING MEMBRANE OF A 1- OR 2-HOUR FIRE RATED FLOOR OR ROOF-CEILING ASSEMBLY
  - THE WALL MUST BE SHEATHED WITH TYPE X GYPSUM WALLBOARD
  - WALL NOT REQUIRED TO BE FIRE RATED

- ALL PENETRATING ITEMS THROUGH THE DOUBLE TOP PLATES MUST BE PROTECTED WITH LISTED THROUGH-PENETRATION ASSEMBLY
INTERIOR FINISH: CODE ADDITIONS (§803)

LAMINATED FINISH PRODUCTS:

803.11 Laminated products factory produced with a wood substrate. Laminated products factory produced with a wood substrate shall comply with one of the following:

1. The laminated product shall meet the criteria of Section 803.1.1.1 when tested in accordance with NFPA 286 using the product-mounting system, including adhesive, as described in Section 5.8 of NFPA 286.

2. The laminated product shall have a Class A, B, or C flame spread index and smoke-developed index, based on the requirements of Table 803.13, in accordance with ASTM E84 or UL 723. Test specimen preparation and mounting shall be in accordance with ASTM E2579.

803.12 Facings or wood veneers intended to be applied on site over a wood substrate. Facings or veneers intended to be applied on site over a wood substrate shall comply with one of the following:

1. The facing or veneer shall meet the criteria of Section 803.1.1.1 when tested in accordance with NFPA 286 using the product mounting system, including adhesive, as described in Section 5.9 of NFPA 286.

2. The facing or veneer shall have a Class A, B or C flame spread index and smoke-developed index, based on the requirements of Table 803.13, in accordance with ASTM E84 or UL 723. Test specimen preparation and mounting shall be in accordance with ASTM E2404.
FIRE PUMP & RISER ROOM: CODE ADDITIONS

FIRE DEPARTMENT ACCESS (§902.1)

• NOT REQUIRED, BUT WHEN PROVIDED:
  • PROVIDE REQUIRED CLEARANCES PER MANUFACTURER
  • PROVIDE DOORS AND CORRIDORS TO ACCOMMODATE REMOVAL OF THE LARGEST PIECE OF EQUIPMENT
  • SIGNAGE REQUIRED ON ACCESS DOOR
  • MAINTAIN ROOM TEMP. AT 40°F
  • PROVIDE PERMANENT ARTIFICIAL LIGHTING
CLASS III STANDPIPES (§905.3.1)

• REQUIRED WHEN A BUILDING IS 4 OR MORE STORIES ABOVE GRADE PLANE

LOCATION OF CLASS I STANDPIPE CONNECTIONS (§905.4)

• STANDPIPE LOCATIONS HAVE MOVED BACK TO THE MAIN FLOOR LANDINGS
CHAPTER 10 MEANS OF EGRESS

1. EXIT ACCESS

2. EXIT

3. EXIT DISCHARGE
EXIT ACCESS: REVIEW (§1016 THROUGH §1021)

THE PATH FROM ANY OCCUPIED PORTION OF THE BUILDING TO AN EXIT

• INCLUDES INTERIOR DOORS, CORRIDORS, OPEN STAIRS, AND OTHER PATHS WITHIN THE BUILDING LEADING AN OCCUPANT TO AN EXIT
SECURITY TURNSTILES: CODE ADDITION (§1010.3.2)

SECURITY ACCESS TURNSTILES (§1010.3.2)

• PERMITTED TO BE A MEANS OF EGRESS COMPONENT WHEN ALL CRITERIA IS MET
  • BUILDING IS SPRINKLERED
  • 22 INCHES MINIMUM WIDTH (50 PERSON CAPACITY)
  • 32 INCHES WIDE (FULL EGRESS CAPACITY)
  • 36 INCHES REQUIRED FOR ACCESSIBLE MEANS OF EGRESS
  • AUTOMATICALLY RETRACT UPON ALARM OR LOSS OF POWER
  • SECTION 1010.3.2 ADDRESSES EGRESS WIDTH, FAIL-SAFE FEATURES, ACCESSIBILITY
CLASSROOM DOOR LOCKING: CODE ADDITION (§1010.1.4.4)

- CLASSROOM DOORS ARE PERMITTED TO BE LOCKED FROM THE OUTSIDE
- ADDRESSES SAFETY

1010.1.4.4 Locking arrangements in educational occupancies. In Group E and Group B educational occupancies, egress doors from classrooms, offices and other occupied rooms shall be permitted to be provided with locking arrangements designed to keep intruders from entering the room where all of the following conditions are met:

1. The door shall be capable of being unlocked from outside the room with a key or other approved means.
2. The door shall be openable from within the room in accordance with Section 1010.1.9.
3. Modifications shall not be made to listed panic hardware, fire door hardware or door closers.
1010.1.9.8 Delayed egress. Delayed egress locking systems shall be permitted to be installed on doors serving the following occupancies in buildings that are equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or an approved automatic smoke or heat detection system installed in accordance with Section 907.


2. Group E classrooms with an occupant load of less than 50.

Exception: Delayed egress locking systems shall be permitted to be installed on exit or exit access doors, other than the main exit or exit access door, serving a courtroom in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.
DEFINITION:

[BF] DELAYED-ACTION CLOSER. A self-closing device that incorporates a delay prior to the initiation of closing. Delayed-action closers are mechanical devices with an adjustable delay.

This definition describes a mechanism for self-closing doors that are typically in a closed position, such as school classroom doors, where delayed closing could be beneficial. These types of closers are not permitted where the automatic closing of doors is required.

- ALLOWS CLASSROOM GROUPS TO EXIT

716.2.6.5 Delayed-action closers. Doors required to be self-closing and not required to be automatic closing shall be permitted to be equipped with delayed-action closers.
ASSEMBLY AISLE EGRESS CAPACITY: CODE CHANGE

PROVISION:

1029.6 Capacity of aisle for assembly. The required capacity of aisles shall be not less than that determined in accordance with Section 1029.6.1 where smoke-protected assembly seating is not provided, Section 1029.6.2 where smoke-protected assembly seating is provided and Section 1029.6.3 where open-air assembly seating is provided.

DEFINITIONS:

[F] OPEN-AIR ASSEMBLY SEATING. Seating served by means of egress that is not subject to smoke accumulation within or under a structure and is open to the atmosphere.

[BE] SMOKE-PROTECTED ASSEMBLY SEATING. Seating served by means of egress that is not subject to smoke accumulation within or under a structure for a specified design time by means of passive design or by mechanical ventilation.
EXIT: REVIEW (§1022 THROUGH §1027)

THE EGRESS COMPONENTS OF A BUILDING THAT LEAD FROM THE EXIT ACCESS TO THE EXIT DISCHARGE

• **INCLUDES** EXTERIOR EXIT DOORS, EXIT STAIRWAY ENCLOSURES, EXIT PASSAGEWAYS, ETC.

• **DOES NOT INCLUDE** OPEN STAIRS, INTERIOR CORRIDORS, STAIRS THAT ARE NOT PART OF THE MEANS OF EGRESS
STAIRWAY LOCKS & EXTENSIONS: CODE CHANGES

DOOR LOCKS (§1010.1.9.12)

- Stairway exit doors now permitted to be locked from stairway side regardless of how many stories it serves
- Discharge doors cannot be locked

EXTENSIONS (§1023.3.1)

- Exit stairway extensions by an exit passageway can eliminate the door at the bottom of the stair where:
  - Exit passageway has no openings
  - Or, exit stairway and passageway are pressurized
PENETRATIONS OF SHAFT WALLS: CODE CHANGE

APPLIES TO:
• EXIT STAIR ENCLOSURES
• HOISTWAYS
• HVAC SHAFTS

EXCEPTION ADDED (§713.8.1):
• ALLOWS PENETRATION OF THE DRY WALL MEMBRANE ON THE ROOM-SIDE OF THE WALL
  • USE MEMBRANE FIRESTOP SYSTEM
  • DOES NOT HAVE TO BE RELATED TO THE USE OF THE SHAFT
THE PATH THAT LEADS FROM THE TERMINATION OF AN EXIT TO THE PUBLIC WAY

• INCLUDES SIDEWALKS, SITE STAIRS, ADA RAMPS, ETC.

EXIT DISCHARGE: REVIEW (§1028)
ILLUMINATION OF THE EXIT DISCHARGE: CODE ADDITION

PROVISION (§1008.2.3):

• REQUIRES ILLUMINATION FROM THE EXIT TO THE EXIT DISCHARGE

SAFE DISPERSSAL AREA:

• ILLUMINATION OF THE PATH TO THE SAFE DISPERSSAL AREA
• ILLUMINATION OF THE SAFE DISPERSSAL AREA
ACCESSIBLE MEANS OF EGRESS: CODE CHANGES

AREA OF REFUGE (EXIT):
• 1-HOUR SEPARATION
• NOT REQUIRED IF THE BUILDING IS SPRINKLERED

EXTERIOR AREAS OF RESCUE ASSISTANCE (EXIT DISCHARGE):
• NEW EXCEPTION: 1-HOUR SEPARATION NOT REQUIRED IF THE BUILDING IS SPRINKLERED (§ 1009.7.2)
OCCUPANT LOAD FACTOR: CODE CHANGES (§1004.5)

BUSINESS
• 150 ft²/PERSON – GENERAL BUSINESS AREAS
• 50 ft²/PERSON – CONCENTRATED BUSINESS AREAS

MERCANTILE
• 60 ft²/PERSON – ALL MERCANTILE REGARDLESS OF FLOOR LEVEL

WHAT IT IMPACTS
• PLUMBING FIXTURE COUNTS
• NUMBER OF EXITS
• EXIT WIDTH
INTERVENING SPACES

- OCCUPANTS ALLOWED TO EGRESS THROUGH INTERVENING SPACES

- NUMBER OF EXITS BASED ON THE ACTUAL OCCUPANT LOAD OF EACH ROOM

- THE INTERVENING SPACE:
  - NUMBER OF EXIT PATHS IS BASED ON OCCUPANT LOAD OF THE INTERVENING SPACE
  - EGRESS CAPACITY BASED ON THE COMBINED OCCUPANT LOADS LEADING INTO THE INTERVENING SPACE

CUMULATIVE OCCUPANT LOADS: CODE CHANGE (§1004.2.1)
EXIT SEPARATION: REVIEW (§1007.1.1)

• EXITS MUST BE SEPARATED BY AT LEAST 1/2 OF THE DIAGONAL DISTANCE OF THE ROOM OR AREA SERVED
  • 1/3 OF THE DIAGONAL IS PERMITTED WHERE SPRINKLERS ARE PROVIDED
• IF 3 OR MORE EXITS ARE REQUIRED, ONLY 2 EXITS REQUIRED TO BE SEPARATED
SOUND TRANSMISSION: CODE CHANGE

AIRBORNE SOUND (§1206.2)
- NEW PHRASE ALLOWING CALCULATION BY AN ENGINEERING ANALYSIS

STRUCTURE-BORNE SOUND (§1206.3)
- NEW PHRASE ALLOWING CALCULATION BY AN ENGINEERING ANALYSIS
CHAPTER 26 FOAM PLASTIC INSULATION: REVIEW

THERMAL BARRIER

FLAME SPREAD INDEX

NFPA 285 AND NFPA 268
RIGID OR SPRAYED INSULATION IN EXTERIOR WALLS

THERMAL BARRIER (§2603.4)

• RIGID INSULATION REQUIRED TO BE SEPARATED FROM INTERIOR SPACE BY AN APPROVED THERMAL BARRIER
  • MINIMUM ½ INCH GYPSUM BOARD
• IF NOT APPLIED DIRECTLY ONTO RIGID INSULATION, A CAVITY WITH COMBUSTIBLE SPACE IS CREATED
  • MUST COMPLY WITH §718 (CONCEALED SPACES)
  • MUST COMPLY WITH NFPA-13 FOR SPRINKLERS IN THE CAVITY

FLAME SPREAD INDEX (§2603.5.4)

• IN ACCORDANCE WITH ASTM E84 OR UL 723
  • FLAME SPREAD INDEX OF 25 OR LESS
  • SMOKE DEVELOPED INDEX OF 450 OR LESS
RIGID OR SPRAYED INSULATION IN EXTERIOR WALLS

NFPA 285 (§2603.5.5)

- The exterior wall is required to comply with NFPA 285: Test for vertical & lateral fire propagation within exterior wall assemblies

- Reach out to the insulation manufacturers for tested wall systems which incorporate their products

Figure 5: FOAMULAR® showing limited damage above the test window with brick veneer stripped away after the fire test
FOAM PLASTIC ON THE OUTSIDE OF EXTERIOR WALLS

NFPA 268 (§2603.5.7)

- IGNITION TEST OF FOAM PLASTIC FROM AN EXTERIOR SOURCE & FIRE SPREADING UP THE BUILDING ON THE OUTSIDE OF THE EXTERIOR

Exception: Assemblies protected on the outside with one of the following:

1. A thermal barrier complying with Section 2603.4.
2. A minimum 1-inch (25 mm) thickness of concrete or masonry.
4. Metal-faced panels having minimum 0.019-inch-thick (0.48 mm) aluminum or 0.016-inch-thick (0.41 mm) corrosion-resistant steel outer facings.
5. A minimum 1/4-inch (22.2 mm) thickness of stucco complying with Section 2510.
6. A minimum 1/4-inch (6.4 mm) thickness of fiber-cement lap, panel or shingle siding complying with Section 1404.16 and Section 1404.16.1 or 1404.16.2.
DUBAI HIGH-RISE FIRE DUE TO FLAMMABLE CLADDING

THE Sun
MISCELLANEOUS

ELEVATORS

PLUMBING SYSTEMS

PHOTOVOLTAIC (PV) SYSTEMS

STORM SHELTERS
ELEVATORS: CODE ADDITIONS & CHANGES

EMERGENCY ELEVATOR COMMUNICATION (§3001.2)
• EMERGENCY TWO-WAY COMMUNICATION SYSTEMS IS NOW REQUIRED IN ELEVATOR CABS
  • VISUAL AND TEXT-BASED
  • VIDEO-BASED 24/7 LIVE INTERACTIVE SYSTEM

HOISTWAY VENTING
• THE REQUIREMENT TO VENT ELEVATOR HOISTWAYS HAS BEEN REMOVED

HOISTWAY PRESSURIZATION ALTERNATIVE (§909.21)
• EXCEPTIONS ADDED TO MODIFY TESTING DURING SPECIAL INSPECTIONS

HOISTWAY OPENING PROTECTION
• ADDED REQUIREMENT FOR PROTECTION OF HOISTWAY OPENING AT FIRE RATED CORRIDORS (§ 3006.2.1)
PLUMBING SYSTEMS: CODE CHANGE (§2902.3)

PUBLIC TOILET FACILITIES

- NOT REQUIRED IN SPACES INTENDED FOR QUICK TRANSACTIONS WITH AN AREA OF 300 FT² OR LESS
PV SYSTEMS: CODE ADDITIONS

BUILDING-INTEGRATED PV ROOF PANELS (§1507.18)

- Deck Requirements / Deck Slope
- Underlayment
- Material Standards
- Attachment
- Wind Resistance

PV PANEL SYSTEMS (§1607.13.5)

- Roof Designed to Support Live/Dead Loads of PV Panels and Associated Equipment
STORM SHELTERS: CODE ADDITION (§423.3)

WHERE REQUIRED:

- **GROUP E**
- **CRITICAL EMERGENCY OPERATIONS**
  - 911 CALL STATIONS
  - EMERGENCY OPERATION CENTERS
- **FIRE, RESCUE, AMBULANCE AND POLICE STATIONS**
- **250 MPH SHELTER DESIGN WIND SPEED FOR TORNADOS**

![Map showing 250 MPH wind zones](image)
QUESTIONS?
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