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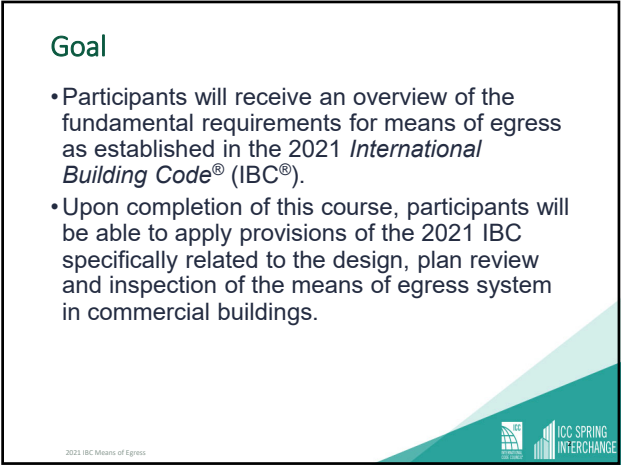
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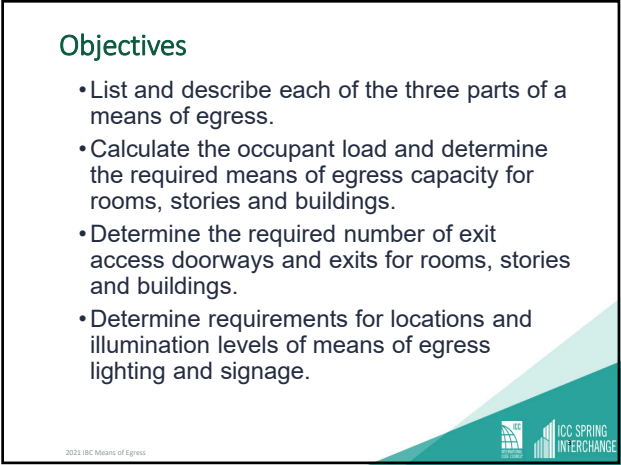
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**Objectives**

- Determine the requirements for arrangement of the means of egress elements, including:
  - Location of exit access doorways and exits.
  - Exit access travel distances.
  - Common paths of egress travel.
  - Egress through adjoining spaces.
- Determine the requirements for means of egress components including corridors, stairways and exit passageways.




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**Means of Egress Basics**

Module 1



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**Means of Egress Basics in the IBC**

**Administration and Maintenance and Plans**

- 1001 - 1002

**General Means of Egress**



- 1003 - 1015

**Components of Means of Egress**

- Exit Access 1016 - 1021
- Exits 1022 - 1027
- Exit Discharge 1028 - 1029

**Miscellaneous**

- Assembly 1030
- Emergency Escape and Rescue 1031

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### Definition of MEANS OF EGRESS

- A “Means of Egress”:
  - Continuous and unobstructed path of egress travel
  - Vertical and/or horizontal travel
  - Starts at any occupiable portion of a building or structure
  - Ends at public way



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### Three Parts of a Means of Egress

- A means of egress consists of three separate and distinct parts:
  - Exit access
  - Exit
  - Exit discharge
- While typically utilized as an organizational tool, the three-part means of egress concept also provides scoping, such as:
  - Extent of common path of egress travel
  - End point of travel distance measurement



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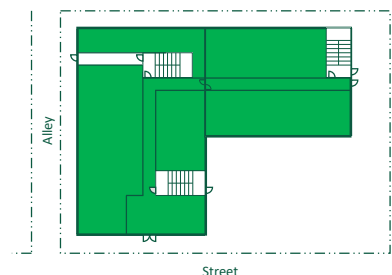
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### Exit Access



Shaded area = exit access



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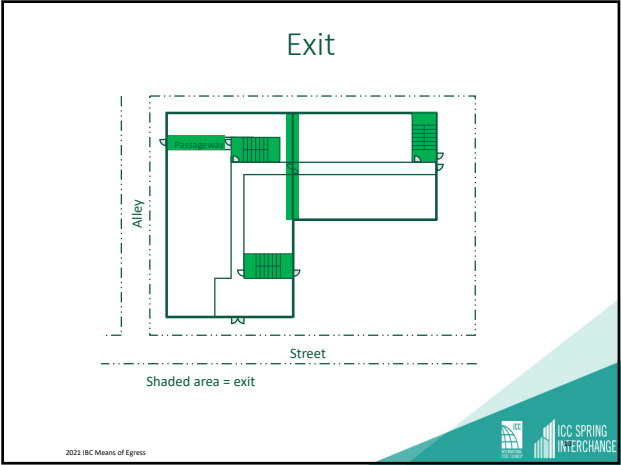
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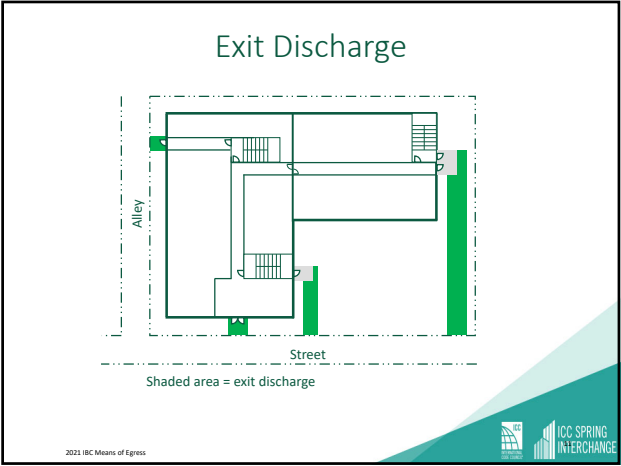
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ICC SPRING INTERCHANGE

Occupant Load

Module 2

ICC INTERNATIONAL CODE COUNCIL

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Occupant Load (OL)  
Section 1004

- Occupant load is used throughout the IBC to determine the application of a provision, particularly when addressing:
  - Means of egress
  - Fire protection features
  - Occupancy classification
  - Plumbing fixture count
- Occupant load is determined based on:
  - Fixed seating conditions, or
  - Conditions where fixed seating is not provided.

2021 IBC Means of Egress 

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Occupant Load (OL)  
Section 1004

- In areas with fixed seating—OL is based on seating capacity. Section 1004.6
  - For areas having fixed seating without dividing arms, such as benches and pews, occupant load to be based on one person for each 18 inches of seating length
  - For seating in booths, occupant load to be based on one person for each 24 inches of booth seat length
    - Measurement to be taken at backrest of booth

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Occupant Load (OL)  
Section 1004

- In areas without fixed seating—OL computed at the rate of one occupant per unit of area. Section 1004.5
- Table 1004.5 identifies maximum floor area allowances per occupant for areas without fixed seating.
  - The determination of occupant load is based upon:
    - Gross floor area, or
    - Net floor area

2021 IBC Means of Egress 

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**Definition Section 202**

- Floor area, *gross*
- Shaded area indicates the portion included in the gross floor area

2021 IBC Means of Egress

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**Retail Sales/Mercantile**

60'

30'

Occupant load = 1,800 ÷ 60 = 30

2021 IBC Means of Egress

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**Definition Section 202**

- Floor area, *net*
- Shaded area indicates the portion included in the net floor area

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### Increased Occupant Load Section 1004.5.1

**EXAMPLE:**

Office  
15,000 square feet  
Non-sprinklered

3'0" x 6'8" door  
providing 32' clear width

44' exterior exit stairway

2021 IBC Means of Egress

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### Occupant Load (OL) Section 1004.2

- The cumulative occupant load is to be determined in accordance with IBC Section 1004.2:
  - Where occupants pass through intervening rooms—OL is cumulative for spaces along egress path. Section 1004.2.1
    - Design of egress path capacity to be based on cumulative portion of occupant loads of all rooms, areas or spaces to that point along the path.
  - Where occupants on a mezzanine egress through an adjacent floor level—OL is cumulative for that level and the mezzanine(s) exiting through that level. Section 1004.2.2
  - Where stairways serve adjacent stories, the occupant load from separate stories is not to be added. Sections 1004.2.3 and 1005.6.

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### Design Occupant Load Section 1004.2.1

**EXAMPLE:**

Office 10 occupants → A

Office 10 occupants → B

Office 10 occupants → C

Lobby 10 occupants → D

Open office area 150 occupants

• Door #4 sized to accommodate 100 occupants

• Lobby D only requires a single exit

2021 IBC Means of Egress

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Adjacent Levels for Mezzanines  
Section 1004.2.2

Occupant load of mezzanine added to room below when egress is through the space

Capacity of exits designed for total occupant load

Mezzanine

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Occupant Load (OL)  
Sections 1004.3, 1004.4

- Where areas contains multiple functions having different occupant load factors, design occupant load to be based on area of each function calculated independently.
- Where two or more occupancies utilize portions of the same means of egress system, all components to meet the more stringent requirements of occupancies served.

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Occupant Load (OL)  
Section 1004.7

- Yards, patios, occupied roofs courts and similar outdoor areas usable by building occupants to be provided with means of egress per Chapter 10.
  - Occupant load to be based on anticipated use.
  - Where outdoor areas are used by persons in addition to building occupants, and egress path from outdoors passes through building, means of egress requirements to be based on sum of occupant loads.

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Outdoor Areas  
Section 1004.7

The diagram illustrates a building footprint with a central 'patio or court' area. A 'Yard' is shown outside the building. A 'Public Way' is located below the building. 'Property lines' are indicated by a dashed line. Labels include: 'Complying exits required' pointing to exits on the building; 'Occupant load determined by building official' pointing to the building; 'Occupant load from outside added to building's occupant load when path of egress travel passes through building' pointing to the path from the yard through the building to the public way.

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ICC SPRING INTERCHANGE

Means of Egress Minimum Width and Required Capacity

Module 3

ICC INTERNATIONAL CODE COUNCIL

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Minimum Width vs. Required Capacity  
Section 1005

- All portions of means of egress to be sized per Section 1005, except:
  - Aisles and aisle accessways in assembly rooms and spaces complying with Section 1030.
- Minimum size of egress system to be based upon the greater of:
  - Component width (minimum width), and
  - Calculated width (required capacity)

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**Minimum Width vs. Required Capacity**  
Section 1005

- “Minimum width” is based on specific component under consideration, such as:
  - Aisles and corridors: Table 1020.2
  - Doorways: Section 1010.1.1
  - Stairways: Section 1011.2
- “Required capacity” is determined through calculations per Section 1005.3.



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**Required Egress Capacity: Other Than Stairways**  
Section 1005.3.2

- Required capacity of all egress components other than stairways, including doors, ramps, aisles and corridors:
  - Occupant load served multiplied by 0.2”
  - For other than Group H and I-2, the required capacity is occupant load served multiplied by 0.15” **IF**
    - Building is equipped with an emergency voice/ alarm communication system **and**
    - Building is equipped with an automatic fire sprinkler system (NFPA 13 or 13R)



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**Required Egress Capacity: Stairways**  
Section 1005.3.1

- Required capacity for stairways only:
  - Occupant load served multiplied by 0.3”
  - For other than Group H and I-2, the minimum width is occupant load served multiplied by 0.2” **IF**
    - Building is equipped with an emergency voice/ alarm communication system **and**
    - Building is equipped with an automatic fire sprinkler system (NFPA 13 or 13R)



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**Stairway Capacity and Egress Convergence**  
Sections 1005.3.1, 1005.6

- Required capacity for the egress stairway shall be determined based solely on the occupant load of the adjacent story served by the stairway
- Where egress from stories above and below converge at an intermediate level, the capacity from point of convergence to be  $\geq$  sum of the stairway capacities for two adjacent stories



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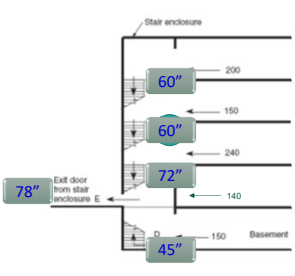
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**Stairway Capacity and Egress Convergence**  
Sections 1005.3.1, 1005.6



ASSUME: Stairway serving occupant loads in office building as shown. Building is sprinklered throughout but has no EV/AC system.

DETERMINE: Minimum stairway widths for stairway segments A-D and doorway width E, based on:

- 0.3'/person for stairways
- 0.2'/person for doorway



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**Required Egress Width and Capacity Continuity**  
Section 1005.4

- Minimum width or required capacity required from any story shall not be reduced along the path of egress travel until arrival at the public way.



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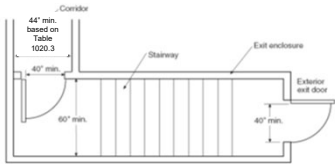
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Application Example

- Sprinklered building, but no EV/AC system
- Group B occupancy
- Corridor serves 400 occupants and connects two interior exit stairways.

200 (occupants) x 0.3 (stairs) = 60" exit width

200 (occupants) x 0.2 (other egress) = 40" exit width



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Distribution of Minimum Width and Required Capacity Section 1005.5

- Multiple means of egress shall be sized such that the loss of any one means of egress will not reduce the available capacity or width to less than 50 percent of the required capacity or width.

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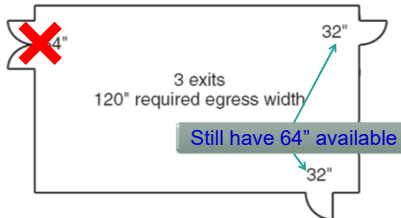
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Application Example



**OK:** The loss of any single exit will not result in less than half of required width or capacity remaining

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Application Example

64" 32"

2 exits  
80" required egress width

**Not permitted:** Loss of a single exit could result in less than half of required width or capacity remaining.

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Application Example

64" 40"

2 exits  
80" required egress width

**OK:** Although double doors give greater than half of available width or capacity, not less than half of required width or capacity would still remain.

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ICC SPRING INTERCHANGE

Number of Exits and Exit Access Doorways

Module 4

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Egress from Spaces Section 1006.2

- Two exits or exit access doorways are required from a space where:
  - The occupant load of the space exceeds the number shown in Table 1006.2.1, or
  - The common path of travel exceeds the limitations set forth in Table 1006.2.1.

2021 IBC Means of Egress 

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Common Path of Egress Travel Sections 202, 1006.2

- **COMMON PATH OF EGRESS TRAVEL.**  
That portion of the exit access travel distance measured from the most remote point within a story to that point where the occupants have separate and distinct access to two exits or exit access doorways.

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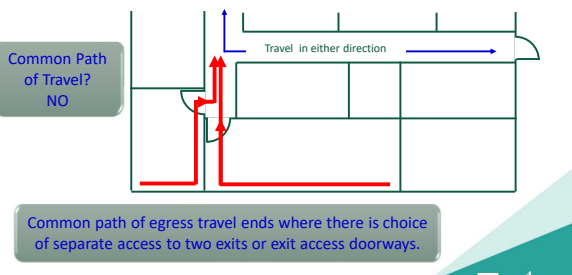
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Common Path of Egress Travel Sections 202, 1006.2



Common Path of Travel?  
NO

Common path of egress travel ends where there is choice of separate access to two exits or exit access doorways.

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### Minimum Number of Exits or Exit Access Doorways

#### Section 1006.2.1

- Every space shall have access to at least one MOE
- Two MOE when the occupant load is above the threshold in Table 1006.2.1
- Two MOE when the common path of travel is exceeded

**EXAMPLE**

Area = 1200 sf  
O.L. Factor = 60 / person  
O.L. = 20

Table 1006.2.1:  
only one MOE < 49

Allowable Common Path of Travel = 75'

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### Spaces with One Exit or Exit Access Doorway

#### Table 1006.2.1

OCCUPANCY	MAXIMUM OCCUPANT LOAD OF SPACE	MAXIMUM COMMON PATH OF EGRESS TRAVEL DISTANCE (feet)			
		Without Sprinkler System (feet)		With Sprinkler System (feet)	
		Occupant Load		Occupant Load	
		OL ≤ 50	OL > 50	OL ≤ 50	OL > 50
A, E, M	49	75	75	75	75
B	49	100	75	100	100
F	49	75	75	100	100
H-1, H-2, H-3	3	NP	NP	25	25
H-4, H-5	10	NP	NP	75	75
I-1, I-2, I-4	10	NP	NP	75	75
I-3	10	NP	NP	100	100
R-1	10	NP	NP	75	75
R-2	20	NP	NP	125	125
R-3	20	NP	NP	125+	125+
R-4	20	NP	NP	125+	125+
S	29	100	75	100	100
U	49	100	75	75	75

For SE: 1 foot = 304.8 mm.  
NP = Not Permitted.

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### Minimum Number of Exits

#### Section 1006.2.1.1

- Three exits or exit access doorways to be provided from any space where occupant load is 501 to 1,000

Occupant Load  
501 to 1,000

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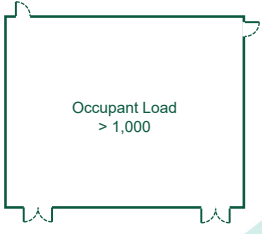
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**Minimum Number of Exits**  
Section 1006.2.1.1

- Minimum of four exits or exit access doorways required from any space where occupant load > 1,000



Occupant Load > 1,000

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**Minimum Number of Exits from Stories and Occupied Roofs**  
Section 1006.3.3

- Each story and occupied roof to have minimum number of exits, or access to exits, as set forth in Table 1006.3.3.

**TABLE 1006.3.3  
MINIMUM NUMBER OF EXITS OR ACCESS TO EXITS PER STORY**

OCCUPANT LOAD PER STORY	MINIMUM NUMBER OF EXITS OR ACCESS TO EXITS FROM STORY
1-500	2
501-1,000	3
More than 1,000	4

2021 IBC Means of Egress



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**Single Exit Stories**  
Section 1006.3


- A single exit or access to a single exit permitted where in compliance with Table 1006.3.4(1) or 1006.3.4(2)

**TABLE 1006.3.4(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
Basement, first, second or third story above grade plane	R-2 <sup>a</sup>	4 dwelling units	125 feet
Fourth story above grade plane and higher	NP	NA	NA

For SI: 1 Foot = 304.8 mm.  
 NP = Not Permitted.  
 NA = Not Applicable.  
 a. Buildings classified as Group R-2 equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2 and provided with emergency escape and rescue openings in accordance with Section 1003.  
 b. This table is used for R-2 occupancies consisting of dwelling units. For R-2 occupancies consisting of sleeping units, use Table 1006.3.4(2).

2021 IBC Means of Egress



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### Single Exit Stories Section 1006.3

- A single exit or access to a single exit permitted where in compliance with Table 1006.3.4(1) or 1006.3.4(2)

STORY	OCCUPANCY	MAXIMUM OCCUPANT LOAD PER STORY	MAXIMUM EXIT ACCESS TRAVEL DISTANCE (FEET)
First story above or below grade plane	A, B <sup>a</sup> , E, F <sup>a</sup> , M, U	49	75
	H-2, H-3	3	25
	H-4, H-5, I, R-1, R-2 <sup>a,c</sup>	10	75
Second story above grade plane	S <sup>b</sup>	29	75
	H, E, M, S <sup>b</sup>	29	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. Buildings classified as Group R-2 equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2 and provided with emergency escape and rescue openings in accordance with Section 1031.  
 b. Group H, F and S occupancies in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 shall have a maximum exit access travel distance of 100 feet.  
 c. This table is used for R-2 occupancies consisting of sleeping units. For R-2 occupancies consisting of dwelling units, see Table 1006.3.4(1).  
 d. The length of exit access travel distance in a Group S-2 open parking garage shall be not more than 100 feet.



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## Arrangement of Means of Egress Elements

### Module 5



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### Design of Exit Access Elements

- Once the egress capacity and number of required egress elements is determined, the following provisions must be addressed:
  - Separation of multiple exits and/or exit access doorways. Section 1007
  - Means of egress travel through intervening spaces. Section 1016.2
  - Exit access travel distance limitations. Section 1017
  - Dead-end corridor conditions. Section 1020.5



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**Exit or Exit Access Doorway Arrangement**  
Section 1007.1.1

- Where two exits or exit access doorways are required, they are to be separated a minimum distance of  $\frac{1}{2}$  of the maximum overall diagonal dimension of the building or area served.

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**Exit or Exit Access Doorway Arrangement**  
Section 1007.1.1

- All measurements to be taken in a straight line.

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**Exit or Exit Access Doorway Arrangement**  
Section 1007.1.1

- Both building and areas served to be regulated

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### Exit or Exit Access Doorway Arrangement Section 1007.1.1, Exception 2

- Exception 2 recognizes that when the building is fully sprinklered, the minimum required separation distance may be reduced to 1/3 the maximum overall diagonal.

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### Exit or Exit Access Doorway Arrangement Section 1007.1.2

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### Egress Through Intervening Spaces Section 1016.2, #2

- Egress from or room or space shall not pass through an adjoining room or space except where:
  - Intervening rooms are related to the area or room served, and
  - Intervening room is not a Group H occupancy, and
  - Path of egress travel is clear and discernible to an exit
- Intervening rooms cannot have potential to be locked to prevent egress

2021 IBC Means of Egress

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Egress Through Intervening Spaces  
Section 1016.2, #2

Common Path of Egress Travel becomes limiting factor

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Egress Through Intervening Spaces  
Section 1016.2, #2, Exception

- In Group H occupancies, travel through intervening rooms of the same or lesser hazard occupancy group is permitted.

Group H

The same hazard or lesser hazard occupancy group

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Egress Through Intervening Spaces  
Section 1016.2, #5

- Egress travel shall not pass through kitchens, storerooms, closets or spaces used for similar purposes

Kitchen

Only allowed IF the kitchen is part of the dwelling unit or sleeping area

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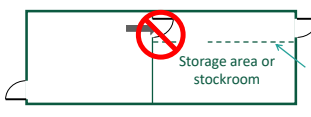
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Egress Through Intervening Spaces  
Section 1016.2, #5, Exception 2

- Egress travel through stockrooms in Group M permitted where four conditions are met:




Storage area or stockroom

Full height or partial height wall or other construction

Only allowed in Group M if:

- not able to be locked from egress side
- physical demarcation of minimum 44" egress path
- serves maximum of 50% of exits
- stock is of same hazard classification as in sales area

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Exit Access Travel Distance  
Section 1017.3

- Travel distance is limited within the exit access portion of the means of egress.
- Travel distance is measured:
  - From the most remote point of each room, area or space
  - Along a natural unobstructed path of vertical and horizontal egress travel
  - To the entrance of an exit.
- Where two or more exits are required, travel limits are based on the nearest exit.

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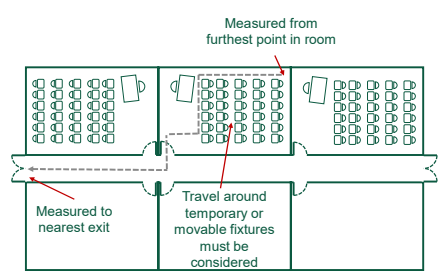
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Exit Access Travel Distance  
Section 1017.3




Measured from furthest point in room

Measured to nearest exit

Travel around temporary or movable fixtures must be considered

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### Exit Access Travel Distance Section 1017.3.1

Measurement of exit access travel distance continues for exit access stairs and ramps

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### Travel Distance Measurement

- Measurement is to "nearest" exit

Choice of 2 directions of travel

A = 40 feet  
B = 30 feet  
C = 75 feet  
145 feet

Common path of travel = 70'  
Travel Distance = 145'

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### Exit Access Travel Distance Table 1017.2

**TABLE 1017.2  
EXIT ACCESS TRAVEL DISTANCE\***

OCCUPANCY	WITHOUT SPRINKLER SYSTEM (feet)	WITH SPRINKLER SYSTEM (feet)
A, E, F-1, M, R, S-1	200 <sup>a</sup>	250 <sup>b</sup>
I-1	Not Permitted	250 <sup>b</sup>
B	200	300 <sup>c</sup>
F-2, S-2, U	300	400 <sup>c</sup>
H-1	Not Permitted	75 <sup>d</sup>
H-2	Not Permitted	100 <sup>d</sup>
H-3	Not Permitted	150 <sup>d</sup>
H-4	Not Permitted	175 <sup>d</sup>
H-5	Not Permitted	200 <sup>c</sup>
I-2, I-3	Not Permitted	200 <sup>c</sup>
I-4	150	200 <sup>c</sup>

For SI: 1 foot = 304.8 mm.

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Travel Distance Increase for Group F-1 and S-1 Occupancies  
Section 1017.2.2

- Maximum travel distance of 400 feet permitted in Group F-1 and S-1 occupancies where:
  - Portion of building classified as Group F-1 or S-1 limited to one story in height, and
  - Minimum floor to ceiling/roof deck height is 24 feet, and
  - Building is fully sprinklered.



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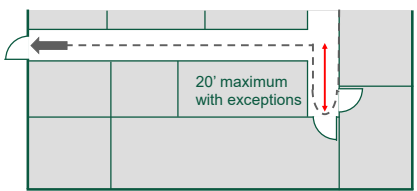
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Dead Ends in Corridors  
Section 1020.5

- Where **more than one exit or exit access doorway is required** from a corridor, dead-ends within the corridor system are limited in length.
- General limitation on dead-end corridors is 20 feet in length.



20' maximum with exceptions



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Dead Ends in Corridors  
Section 1020.5, Exceptions

- Where building is fully sprinklered (NFPA 13 system only), maximum dead conditions of 50 feet are permitted in Group B, E, F, I-1, M, R-1, R-2, S and U occupancies
- Maximum of 50 feet permitted in Group I-3 occupancies classified as Condition 2, 3 or 4
- Maximum of 30 feet permitted in Group I-2, Condition 2 occupancies where dead-end corridors do not serve patient rooms or patient treatment spaces
- Unlimited length permitted where the length of the dead-end corridor is less than 2.5 times the least width of the dead-end corridor.



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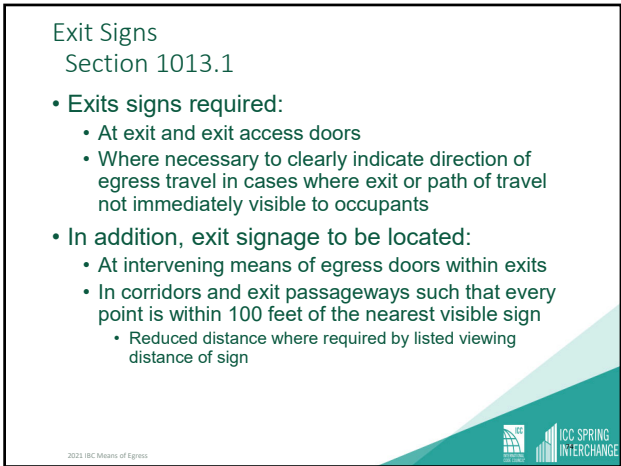
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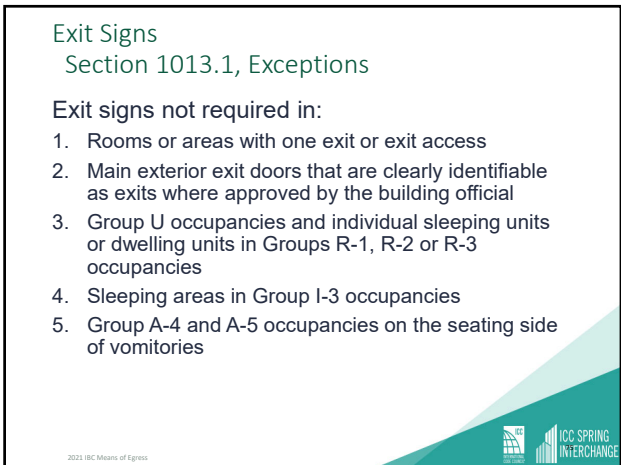
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Exit Signs  
Location Activity

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Illumination of Exit Signs  
Sections 1013.3, 1013.6

- Exit signs to be externally or internally illuminated at all times
  - Not applicable to tactile signs
- Electrically-powered, self-luminous and photoluminescent exit signs to be listed and labeled in accordance with UL 924.

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Externally Illuminated Exit Signs  
Section 1013.6

- The word "EXIT" to be in high contrast with background and must be clearly discernable.
- Face of sign to be illuminated from an external source with minimum intensity of 5 footcandles.
- Illumination required for a minimum of 90 minutes after power loss.

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**Means of Egress Illumination**  
Section 1008.2

- The means of egress serving a room or space to be illuminated at all times the room or space is occupied, except for:
  - Group U occupancies
  - Aisle accessways in Group A
  - Group R-1, R-2 and R-3 dwelling units and sleeping units
  - Group I sleeping units
- Minimum illumination level to be at least:
  - One footcandle at walking surface
  - Ten footcandles along exit access stairways, exit stairways and their required landings

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



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**Emergency Power for Illumination**  
Section 1008.3

- The power supply for means of egress illumination to be provided by the premises' electrical system.
- In the event of power failure, an emergency electrical system shall automatically illuminate specified areas.
- Emergency power to be provided for  $\geq 90$  minutes by:
  - Storage batteries
  - Unit equipment
  - On-site generator

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**Emergency Power for Illumination**  
Section 1008.3

- Where power failure occurs in rooms or spaces that require two or more exits or access to exits, the following areas to be automatically illuminated:
  - Aisles
  - Corridors
  - Exit access stairways and ramps

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Emergency Power for Illumination  
Section 1008.3

- Where power failure occurs in buildings that require two or more exits or access to exits, the following areas to be automatically illuminated:
  - Interior exit access stairways and ramps
  - Interior exit stairways and ramps
  - Exterior exit stairways and ramps
  - Vestibules and other interior exit discharge areas
  - Exterior landings for exit doorways that lead directly to the exit discharge



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Emergency Power for Illumination  
Section 1008.3.5

- Emergency lighting facilities to provide:
  - Initial illumination providing an average of  $\geq 1$  footcandle
  - At least 0.1 footcandle at any point
  - A maximum-to-minimum uniformity ratio  $\leq 40$  to 1.
- Illumination levels permitted to decline during the emergency lighting time duration to:
  - 0.6 footcandle average
  - 0.06 footcandle at any point



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Corridors and  
Exit Passageways

Module 7



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### Corridors vs. Exit Passageways

Feature	Corridor	Exit Passageway
Component of egress	Exit access	Exit
One direction of travel	Possibly (limitations based on length and number of persons served)	Yes (single directional travel typically permitted)
Fire-resistance rated construction	Possibly (constructed as fire partition)	Yes (constructed as fire barrier)
Provides access to storage areas, mechanical rooms, etc.	Yes	No (except in covered mall buildings)
Travel distance regulated	Yes	No
Openings	No limitations (protected as applicable)	Limited to egress doors from normally occupied spaces

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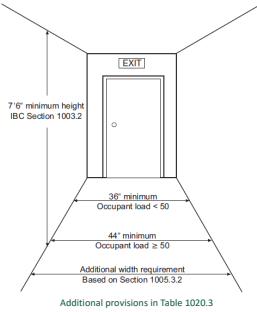
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### Width and Capacity Section 1020.3



7'6" minimum height  
IBC Section 1003.2


36" minimum  
Occupant load < 50

44" minimum  
Occupant load ≥ 50

Additional width requirement  
Based on Section 1005.3.2

Additional provisions in Table 1020.3

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### Minimum Corridor Width Table 1020.3

OCCUPANCY	MINIMUM WIDTH (inches)
Any facility not listed in this table	44
Access to and utilization of mechanical, plumbing or electrical systems or equipment	24
With an occupant load of less than 50	36
Within a dwelling unit	36
In Group E with a corridor having an occupant load of 100 or more	72
In corridors and areas serving stretcher traffic in ambulatory care facilities	72
Group I-2 in areas where required for bed movement	96

For SI: 1 inch = 25.4 mm.

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Encroachment  
Section 1005.7

- Doors, when fully opened, shall not reduce the required means of egress width by more than 7".
- Doors in any position shall not reduce the required width by more than one-half.
  - **Exception:** The restrictions on a door swing shall not apply to doors within individual dwelling units and sleeping units of Groups R-2 and R-3.
- Other nonstructural projections such as trim and similar decorative features shall be permitted to project into required width a maximum of 1½" on each side.

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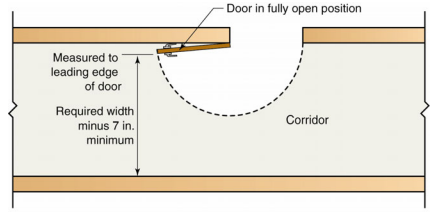
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Encroachment  
Section 1005.7



Does not apply to dwelling units and sleeping units

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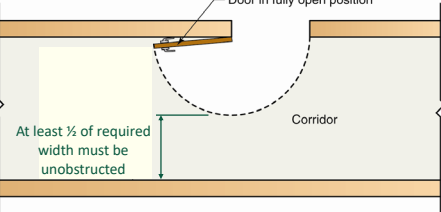
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Encroachment  
Section 1005.7



Does not apply to dwelling units and sleeping units

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### Corridor Fire-Resistance Rating Table 1020.2

**TABLE 1020.2  
CORRIDOR FIRE-RESISTANCE RATING**

OCCUPANCY	OCCUPANT LOAD SERVED BY CORRIDOR	REQUIRED FIRE-RESISTANCE RATING (hours)	
		Without sprinkler system	With sprinkler system
H-1, H-2, H-3	All	Not Permitted	1 <sup>c</sup>
H-4, H-5	Greater than 30	Not Permitted	1 <sup>c</sup>
A, B, E, F, M, S, U	Greater than 30	1	0
R	Greater than 10	Not Permitted	0.5 <sup>b</sup> /1 <sup>d</sup>
I-2 <sup>a</sup>	All	Not Permitted	0
I-1, I-3	All	Not Permitted	1 <sup>b, c</sup>
I-4	All	1	0

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### Exit Passageways Section 1024

- Exit passageways to be only used for:
  - Means of egress
  - Circulation path
- Minimum capacity of exit passageways based on Section 1005.1, with minimum width not less than 44 inches (36 inches permitted when serving < 50 occupants)
- Exit passageways to be constructed with minimum 1-hour fire barriers, horizontal assemblies, or both.
  - Minimum 2-hour rating required when exit passageway used as an extension of a 2-hour interior exit stairway.

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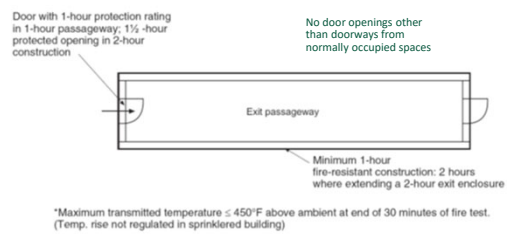
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### Exit Passageways Section 1024



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Exit Passageways  
Section 1024

- Equipment and ductwork for exit passageway ventilation must be independent of other building ventilation systems, and:
  - Be located at the building's exterior and directly connect to the enclosure by ductwork in complying shafts, or
  - When located within the enclosure, receive intake air taken directly from the outdoors and exhaust air directly to the outside, or utilize ducts within complying shafts, or
  - When located within the building, be separated from the remainder of the building, including other mechanical equipment, through the use of complying shafts.



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Stairways  
Module 8



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Exit Access Stairways  
Section 1019.3

- Exit access stairways that serve floor levels within a single story, such as mezzanines, are not required to be enclosed.
- Exit access stairways between stories in Groups I-2 and I-3 to be enclosed by a shaft enclosure.



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**Exit Access Stairways**  
Section 1019.3

- In other than Group I-2 and I-3 occupancies, exit access stairways shall also be enclosed, except:
  - When serving or atmospherically communicating between two stories (such interconnected stories shall not be open to other stories)
  - When connecting  $\leq 4$  stories within an individual dwelling unit or sleeping unit in a Group R-1, R-2 or R-3 occupancy
  - Within an atrium or open parking garage
  - Between the balcony, gallery or press box and an assembly floor
  - In sprinklered buildings where openings are protected by draft curtains and closely-spaced sprinklers per Exception 4.

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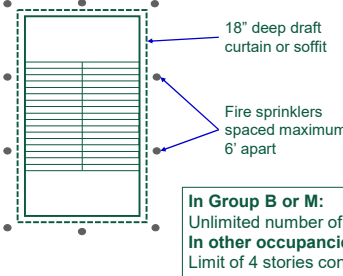
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**Exit Access Stairways**  
Section 1019.3, Exception 4




18" deep draft curtain or soffit

Fire sprinklers spaced maximum 6' apart

**In Group B or M:**  
Unlimited number of stories

**In other occupancies:**  
Limit of 4 stories connected

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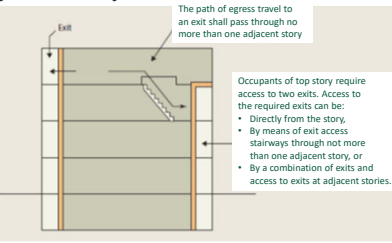
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**Egress from Stories and Occupied Roofs**  
Section 1006.3.2


- With exceptions, the path of egress travel to an exit shall not pass through more than one adjacent story.



The path of egress travel to an exit shall pass through no more than one adjacent story

Occupants of top story require access to two exits. Access to the required exits can be:

- Directly from the story.
- By means of exit access stairways through not more than one adjacent story, or
- By a combination of exits and access to exits at adjacent stories.

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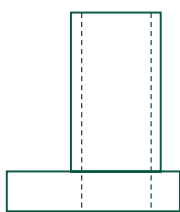
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**Interior Exit Stairways**  
Section 1023.1

- All interior exit stairways shall be enclosed and:
  - Lead directly to the exterior of the building, or
  - Be extended to the building's exterior by means of an exit passageway, or
  - Comply with Section 1028.2 addressing interior exit discharge.
- Interior exit stairways shall only be used for the following purposes:
  - Means of egress
  - Circulation paths



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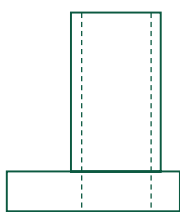
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**Interior Exit Stairways**  
Section 1023.2



- Enclosure construction:
  - $\geq 4$  stories: Minimum 2-hour fire-resistance
  - $< 4$  stories: Minimum 1-hour fire-resistance
  - Not less than floor assembly penetrated, but need not be more than 2 hours
- Door assemblies:
  - Self-closing or automatic-closing
  - Minimum 1-hour rating for 1-hour enclosures
  - Minimum 1½-hour rating for 2-hour enclosures

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**Interior Exit Stairway Openings**  
Section 1023.4

- Opening protectives to comply with Section 716.
- Other than exterior openings permitted to be unprotected, openings in interior exit stairways limited to:
  - Egress doors into the enclosure from normally occupied spaces, and
  - Egress from the enclosure.
- Elevators shall not open into interior exit stairways.

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### Interior Exit Stairway Penetrations Section 1023.5

- Penetrations into or through interior exit stairways are prohibited except for the following:
  - Equipment and ductwork necessary for independent ventilation or pressurization
  - Fire protection systems
  - Two-way communication systems
  - Electrical raceway for fire department communication systems
  - Electrical raceway serving the stairway (must terminate in a steel box  $\leq 16$  square inches)
  - Structural elements supporting the stairway enclosure (such as beams or joists)

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### Interior Exit Stairway Ventilation Section 1023.6

- Equipment and ductwork for interior exit stairway ventilation must:
  - Be located at the building's exterior and directly connect to the enclosure by ductwork in complying shafts, or
  - When located within the enclosure, receive intake air taken directly from the outdoors and exhaust air directly to the outside, or utilize ducts within complying shafts, or
  - When located within the building, be separated from the remainder of the building, including other mechanical equipment, through the use of complying shafts.

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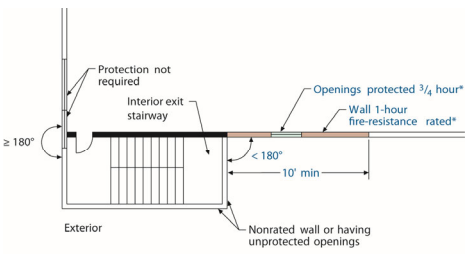
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### Interior Exit Stairway Exterior Walls Section 1023.7



\* Protected to a height of 10 feet above topmost landing or roof, whichever is less.  
For SI: 1 foot = 304.8 mm, 1°C = [(°F) - 32]/1.8]

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Discharge Identification  
Section 1023.8

2021 IBC Means of Egress

ICC SPRING INTERCHANGE

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Exterior Exit Stairways  
Section 1027.2

- Exterior exit stairways serving as a portion of the means of egress are:
  - Limited to buildings  $\leq 6$  stories above grade plane
  - Prohibited for high-rise buildings and Group I-2 occupancies

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ICC SPRING INTERCHANGE

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Exterior Exit Stairways  
Section 1027.3

- Exterior exit stairways shall be open on at least one side, except for required structural elements, handrails and guards.
- Openings are to be located at each:
  - Floor level, and
  - Intermediate landings

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ICC SPRING INTERCHANGE

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**Exterior Exit Stairways**  
Section 1027.5

- Exterior exit stairways are to have a minimum fire separation distance of 10 feet from:
  - Adjacent lot lines
  - Other portions of building
  - Other buildings on same lot

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**Exterior Stairways Protection**  
Section 1027.6

- Exterior exit stairways to be separated from the interior of the building per Section 1023.2.

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**Open-ended Corridors**  
Section 1027.6, Exception 3

- Separation is not required for complying open-ended corridors.
  - The building, including open-ended corridors and stairways, to be sprinklered throughout.

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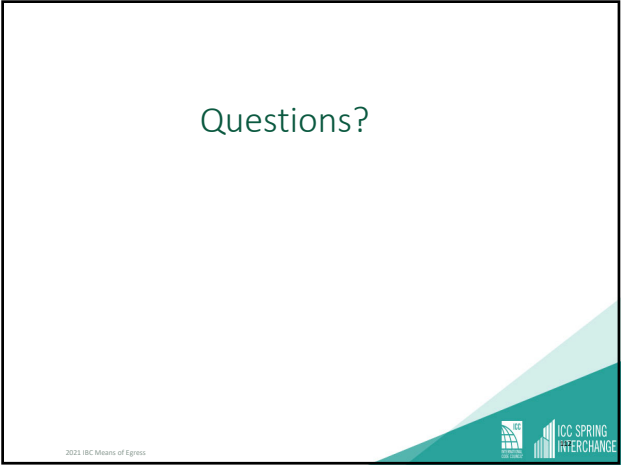
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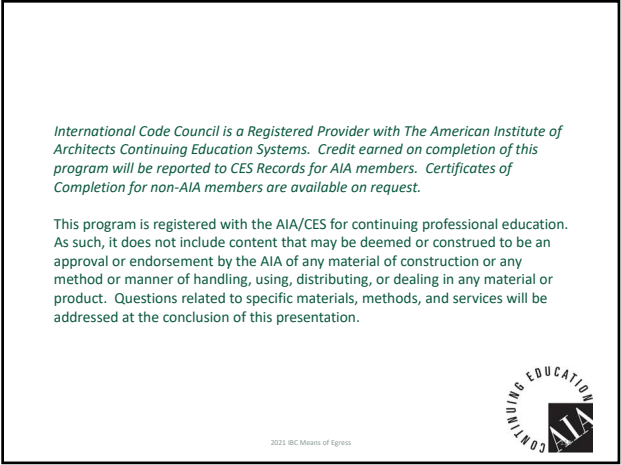
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