

Assembly Use and Occupancies

Spring 2019 Career Development Series

Milton Gregory Grew, AIA
Architect / Building Official / Codes Consultant

DAS Office of Education and Data Management

Objectives

- What are assembly occupancies?
- Review the assembly use requirements in IBC
- The goal is to know where to look for the requirements and have a general understanding of their application.



Limitations of this class

- This class will cover highlights and summarize code provisions. This is not a substitute for consulting the detailed provisions in the code.
- Many slides paraphrase or summarize code provisions. Consult the codes or State amendments for the actual text.

4

All 3 CT codes have provisions for assembly occupancies or uses

- **2018 Connecticut State Building Code**
 - 2015 IBC
 - ICC A117.1-2009
 - 2015 IEBC
- **2018 Connecticut Fire Safety Code**
 - 2015 IFC – Part III – New Construction
 - NFPA 101-2015 – Part IV – Existing Buildings
- **2018 Connecticut Fire Prevention Code**
 - NFPA 1-2015

5



CGS Sec. 20-298(8)(A) Practice of Architecture

Plans and specifications must be prepared, and erection supervised, by a licensed architect for Assembly use groups, regardless of building or project size.

This includes new construction, additions, and alterations to any existing building.

6

CGS Sec. 29-276c (2018 CSBC Sec. 107.6)

Assembly use, new construction or additions:

Architect/engineer must review shop drawings and perform observation of construction.

P.E. is responsible for design and implementation of fabricated structural load-bearing members and assemblies.

7



2018 CSBC – 2015 IBC

- Section 303 – Assembly Group A
- Section 409 – Motion Picture Projection Rooms
- Section 410 – Stages & Platforms
- Section 411 – Special Amusement Buildings
- Chapter 5 – Height & Area
- Sections 803, 804, 806 – Interior Finishes
- Section 903 – Automatic Sprinkler Systems

8

2018 CSBC – 2015 IBC

- Section 905 – Standpipes
- Section 907 – Fire Alarm & Detection Systems
- Chapter 10 – Means of Egress
- Chapter 11 – Accessibility (A117.1)
- Section 1607 – Live Loads
- Sections 2902 – Plumbing Fixtures (also IPC)

9



2018 CSBC – 2015 IBC - Index

<p>ASSEMBLY OCCUPANCY (GROUP A) . . . 303, 1029</p> <p>Accessibility 1108.2, 1108.4, 1109.2.1, 1110</p> <p>Alarms and detection 907.2.1</p> <p>Area 503, 506, 507, 508</p> <p>Bleachers (see BLEACHERS)</p> <p>Folding and telescopic seating (see BLEACHERS)</p> <p>Grandstands (see GRANDSTANDS)</p> <p>Group-specific provisions</p> <p style="padding-left: 20px;">A-1 303.2</p> <p style="padding-left: 20px;">A-2 303.3</p> <p style="padding-left: 20px;">A-3 303.4</p> <p style="padding-left: 20px;">A-4 303.5</p> <p style="padding-left: 20px;">A-5 303.6</p> <p>Motion picture theater 409, 507.12</p> <p>Special amusement buildings 411</p> <p>Stages and platforms 410</p> <p>Height 503, 504, 505, 508, 510</p> <p>Incidental uses 509</p> <p>Interior finishes Table 803.11, 804</p> <p>Live load Table 1607.1, 1607.12.3</p> <p>Means of egress</p> <p style="padding-left: 20px;">Aisles 1018.2, 1029.9, 1029.10</p> <p style="padding-left: 20px;">Assembly spaces 1029</p> <p style="padding-left: 20px;">Exit signs 1013.1</p> <p style="padding-left: 20px;">Guards 1015.2, 1029.16</p> <p style="padding-left: 20px;">Main exit 1029.3</p> <p style="padding-left: 20px;">Outdoors 1005.3.1, 1005.3.2, 1006.3, 1009.6.4, 1019.3, 1027, 1029.6.2</p> <p style="padding-left: 20px;">Panic hardware 1010.1.10, 1010.2.1</p>	<p>Stairway, exit access 1019</p> <p>Travel distance 1016.2.1, 1017.2, 1006.3.1, 1006.3.2, 1029.7</p> <p>Mixed occupancies 508.3, 508.4</p> <p>Accessory 508.2</p> <p>Education 303.1.3</p> <p>Live/work units 419</p> <p>Mall buildings 402</p> <p>Other occupancies 303.1.1, 303.1.2, 303.1.3</p> <p>Parking below/above 510.7, 510.9</p> <p>Religious facilities 303.1.4</p> <p>Special mixed 510.2</p> <p>Motion picture theaters 409, 507.11</p> <p>Occupancy exceptions 303.1.1, 303.1.2, 303.1.3, 303.1.4, 305.1.1, 305.2.1</p> <p>Plumbing fixtures 2902</p> <p>Risk category Table 1604.5</p> <p>Seating, fixed (see SEATING, FIXED)</p> <p>Seating, smoke-protected 1029.6.2</p> <p>Sprinkler protection 410, 504.3, 506.2, 507.3, 507.4, 507.6, 507.7, 507.12, 903.2.1</p> <p>Stages and platforms 410, 905.3.4</p> <p>Standpipes 905.3.2, 905.3.4, 905.5.1</p> <p>Unlimited area 507.4, 507.4.1, 507.6, 507.7, 507.12</p>
------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

2018 CSBC – 2015 IBC Section 303

303.1 Assembly Group A. Assembly Group A occupancy includes, among others, the use of a building or structure, or a portion thereof, for the gathering of persons for purposes such as civic, social or religious functions; recreation, food or drink consumption or awaiting transportation.



shutterstock.com • 723614080

2018 CSBC – 2015 IBC Section 303

303.1.1 Small buildings and tenant spaces. A building or tenant space used for assembly purposes with an *occupant load* of less than 50 persons shall be classified as a Group B occupancy.



12

2018 CSBC – 2015 IBC Section 303

303.1.2 Small assembly spaces. The following rooms and spaces shall not be classified as Assembly occupancies:

1. A room or space used for assembly purposes with an *occupant load* of less than 50 persons and accessory to another occupancy shall be classified as a Group B occupancy or as part of that occupancy.
2. A room or space used for assembly purposes that is less than 750 square feet (70 m²) in area and accessory to another occupancy shall be classified as a Group B occupancy or as part of that occupancy.



13

2018 CSBC – 2015 IBC Section 303

303.1.3 Associated with Group E occupancies. A room or space used for assembly purposes that is associated with a Group E occupancy is not considered a separate occupancy.

14

2018 CSBC – 2015 IBC Section 303



15

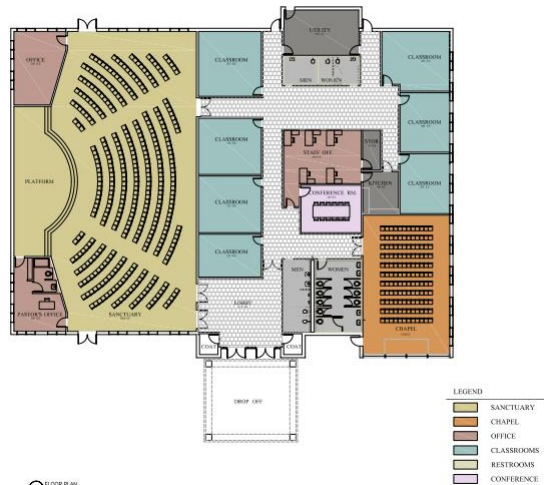


2018 CSBC – 2015 IBC Section 303

303.1.4 Accessory to places of religious worship.
 Accessory religious educational rooms and religious auditoriums with *occupant loads* of less than 100 per room or space are not considered separate occupancies.

16

2018 CSBC – 2015 IBC Section 303



17



2018 CSBC – 2015 IBC Section 303

303.2 Assembly Group A-1. Group A-1 occupancy includes assembly uses, usually with fixed seating, intended for the production and viewing of the performing arts or motion pictures including, but not limited to:

- Motion picture theaters
- Symphony and concert halls
- Television and radio studios admitting an audience
- Theaters

18

2018 CSBC – 2015 IBC Section 303



19



2018 CSBC – 2015 IBC Section 303

303.3 Assembly Group A-2. Group A-2 occupancy includes assembly uses intended for food and/or drink consumption including, but not limited to:

- Banquet halls
- Casinos (gaming areas)
- Nightclubs
- Restaurants, cafeterias and similar dining facilities
(including associated commercial kitchens)
- Taverns and bars

20

2018 CSBC – 2015 IBC Section 303



21

2018 CSBC – 2015 IBC Section 303

303.4 Assembly Group A-3. Group A-3 occupancy includes assembly uses intended for worship, recreation or amusement and other assembly uses not classified elsewhere in Group A including, but not limited to:

- | | |
|----------------------------------------------------------|-------------------------------------------|
| Amusement arcades | Libraries |
| Art galleries | Museums |
| Bowling alleys | <i>Places of religious worship</i> |
| Community halls | Pool and billiard parlors |
| Courtrooms | Waiting areas in transportation terminals |
| Dance halls (not including food or drink consumption) | |
| Exhibition halls | |
| Funeral parlors | |
| Gymnasiums (without spectator seating) | |
| Indoor <i>swimming pools</i> (without spectator seating) | |
| Indoor tennis courts (without spectator seating) | |
| Lecture halls | |

22

2018 CSBC – 2015 IBC Section 303



23

2018 CSBC – 2015 IBC Section 303

303.5 Assembly Group A-4. Group A-4 occupancy includes assembly uses intended for viewing of indoor sporting events and activities with spectator seating including, but not limited to:

- Arenas
- Skating rinks
- Swimming pools*
- Tennis courts

24

2018 CSBC – 2015 IBC Section 303



25

2018 CSBC – 2015 IBC Section 303



26

2018 CSBC – 2015 IBC Section 303

303.6 Assembly Group A-5. Group A-5 occupancy includes assembly uses intended for participation in or viewing outdoor activities including, but not limited to:

Amusement park structures
Bleachers
Grandstands
Stadiums

27



2018 CSBC – 2015 IBC Section 303



28

2018 CSBC – 2015 IBC Section 409

409.1 General. The provisions of Sections 409.1 through 409.5 shall apply to rooms in which ribbon-type cellulose acetate or other safety film is utilized in conjunction with electric arc, xenon or other light-source projection equipment that develops hazardous gases, dust or radiation. Where cellulose nitrate film is utilized or stored, such rooms shall comply with NFPA 40.

409.1.1 Projection room required. Every motion picture machine projecting film as mentioned within the scope of this section shall be enclosed in a projection room. Appurtenant electrical equipment, such as rheostats, transformers and generators, shall be within the projection room or in an adjacent room of equivalent construction.

29



2018 CSBC – 2015 IBC Section 409



Ribbon-type film

Digital
Projection
Room



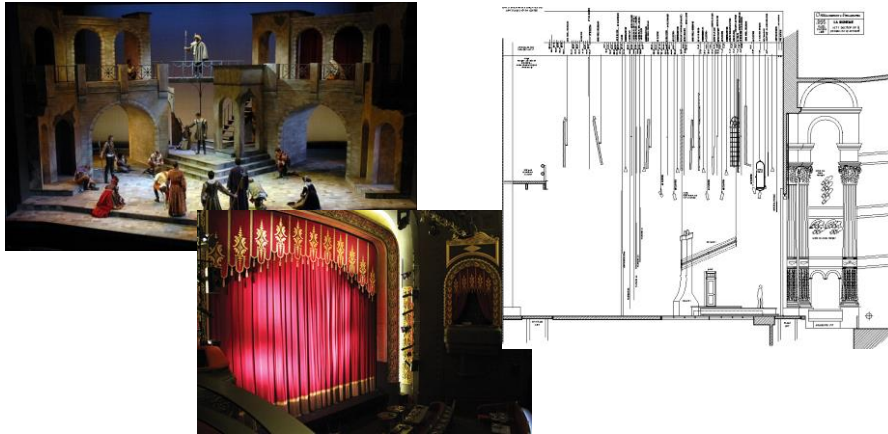
30

2018 CSBC – 2015 IBC Section 410 – Stages, Platforms & Technical Production Areas

STAGE. A space within a building utilized for entertainment or presentations, which includes overhead hanging curtains, drops, scenery or stage effects other than lighting and sound.

31

2018 CSBC – 2015 IBC Section 410 – Stages, Platforms & Technical Production Areas



32

2018 CSBC – 2015 IBC Section 410 – Stages, Platforms & Technical Production Areas

Stage floor construction to match const. type, except:

- Can be IIB or IV w/ 2" wood deck if there is a 2-hr proscenium wall & fire curtain
- In IIA, IIIA & VA bldgs, fire-resistance-rated floor is not required if space below stage has sprinklers
- Stage finished floor to be wood or non-combustible. Openings to be tight-fitting wood doors w/ locks.

33



2018 CSBC – 2015 IBC Section 410 – Stages, Platforms & Technical Production Areas

Proscenium wall

Where stage height greater than 50':

2-hr F.R. from found.

to roof.

Protected opening

per 410.3.5

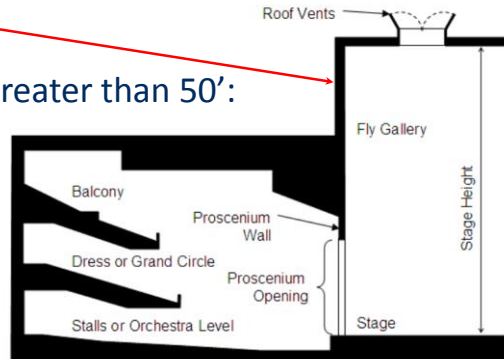


Figure 1 - Typical Theater Cross-Section

34

2018 CSBC – 2015 IBC Section 410 – Stages, Platforms & Technical Production Areas

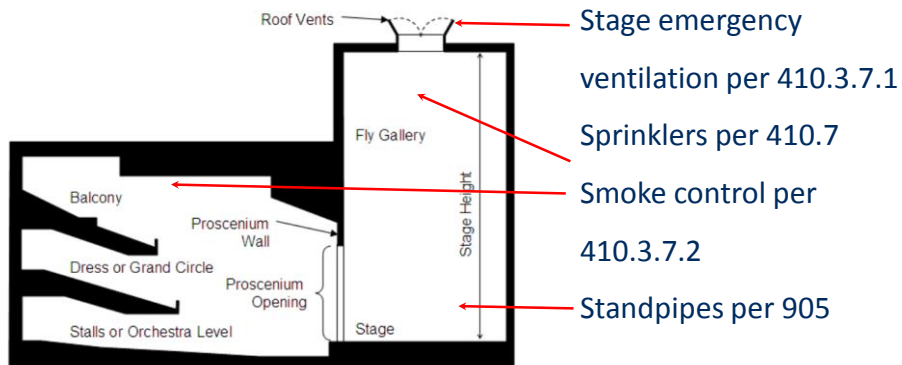


Figure 1 - Typical Theater Cross-Section

35



2018 CSBC – 2015 IBC Section 410 – Stages, Platforms & Technical Production Areas

PLATFORM. A raised area within a building used for worship, the presentation of music, plays or other entertainment; the head table for special guests; the raised area for lecturers and speakers; boxing and wrestling rings; theater-in-the-round *stages*; and similar purposes wherein, other than horizontal sliding curtains, there are no overhead hanging curtains, drops, scenery or stage effects other than lighting and sound. A temporary platform is one installed for not more than 30 days.

36

2018 CSBC – 2015 IBC Section 410 – Stages, Platforms & Technical Production Areas



37

2018 CSBC – 2015 IBC Section 410 – Stages, Platforms & Technical Production Areas

Permanent Platform construction:

- Match construction type of the building
- FRTW allowed in Types I, II & IV under certain conditions
- I-hr floor construction when space underneath used for storage or other purposes other than equip/P/E

38

2018 CSBC – 2015 IBC Section 410 – Stages, Platforms & Technical Production Areas

Temporary Platform construction (30 days max.):

- Any material permitted by the code
- Space beneath only for plumbing & electrical wiring to platform equipment



39



2018 CSBC – 2015 IBC

Section 411 – Special Amusement Buildings

SPECIAL AMUSEMENT BUILDING. A *special amusement building* is any temporary or permanent *building* or portion thereof that is occupied for amusement, entertainment or education purposes and that contains a device or system that conveys passengers or provides a walkway along, around or over a course in any direction so arranged that the *means of egress* path is not readily apparent due to visual or audio distractions or is intentionally confounded or is not readily available because of the nature of the attraction or mode of conveyance through the *building* or structure.

Exception: Children’s play structures that do not exceed 10 feet (3048 mm) in height and do not have an aggregate horizontal projection in excess of 300 square feet (28 m²).

40

2018 CSBC – 2015 IBC

Section 411 – Special Amusement Buildings



41

2018 CSBC – 2015 IBC Section 411 – Special Amusement Buildings

Haunted Castle Fire, Six Flags, NJ, 5/11/84



8 died, 7 injured



42

2018 CSBC – 2015 IBC Section 411 – Special Amusement Buildings

- Group A if occupant load 50 or more. Less is Group B
- Automatic fire detection
- Automatic sprinkler system
- Alarm & notification
- Exit marking
- Interior finish is Class A

43



2018 CSBC – 2015 IBC, Chapter 5

TABLE 504.3^a
ALLOWABLE BUILDING HEIGHT IN FEET ABOVE GRADE PLANE

OCCUPANCY CLASSIFICATION	TYPE OF CONSTRUCTION									
	SEE FOOTNOTES	TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V	
		A	B	A	B	A	B	HT	A	B
A, B, E, F, M, S, U	NS ^b	UL	160	65	55	65	55	65	50	40
	S	UL	180	85	75	85	75	85	70	60

44

2018 CSBC – 2015 IBC, Chapter 5

TABLE 504.4^{a, b}
ALLOWABLE NUMBER OF STORIES ABOVE GRADE PLANE

OCCUPANCY CLASSIFICATION	TYPE OF CONSTRUCTION									
	SEE FOOTNOTES	TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V	
		A	B	A	B	A	B	HT	A	B
A-1	NS	UL	5	3	2	3	2	3	2	1
	S	UL	6	4	3	4	3	4	3	2
A-2	NS	UL	11	3	2	3	2	3	2	1
	S	UL	12	4	3	4	3	4	3	2
A-3	NS	UL	11	3	2	3	2	3	2	1
	S	UL	12	4	3	4	3	4	3	2
A-4	NS	UL	11	3	2	3	2	3	2	1
	S	UL	12	4	3	4	3	4	3	2
A-5	NS	UL	UL	UL	UL	UL	UL	UL	UL	UL
	S	UL	UL	UL	UL	UL	UL	UL	UL	UL

45



2018 CSBC – 2015 IBC, Chapter 5

TABLE 506.2^{a, b}
ALLOWABLE AREA FACTOR (A_t = NS, S1, S13R, or SM, as applicable) IN SQUARE FEET

OCCUPANCY CLASSIFICATION	SEE FOOTNOTES	TYPE OF CONSTRUCTION								
		TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V	
		A	B	A	B	A	B	HT	A	B
A-1	NS	UL	UL	15,500	8,500	14,000	8,500	15,000	11,500	5,500
	S1	UL	UL	62,000	34,000	56,000	34,000	60,000	46,000	22,000
	SM	UL	UL	46,500	25,500	42,000	25,500	45,000	34,500	16,500
A-2	NS	UL	UL	15,500	9,500	14,000	9,500	15,000	11,500	6,000
	S1	UL	UL	62,000	38,000	56,000	38,000	60,000	46,000	24,000
	SM	UL	UL	46,500	28,500	42,000	28,500	45,000	34,500	18,000
A-3	NS	UL	UL	15,500	9,500	14,000	9,500	15,000	11,500	6,000
	S1	UL	UL	62,000	38,000	56,000	38,000	60,000	46,000	24,000
	SM	UL	UL	46,500	28,500	42,000	28,500	45,000	34,500	18,000
A-4	NS	UL	UL	15,500	9,500	14,000	9,500	15,000	11,500	6,000
	S1	UL	UL	62,000	38,000	56,000	38,000	60,000	46,000	24,000
	SM	UL	UL	46,500	28,500	42,000	28,500	45,000	34,500	18,000
A-5	NS									
	S1	UL	UL	UL	UL	UL	UL	UL	UL	UL
	SM									

46

2018 CSBC – 2015 IBC Section 507 – Unlimited Area Buildings

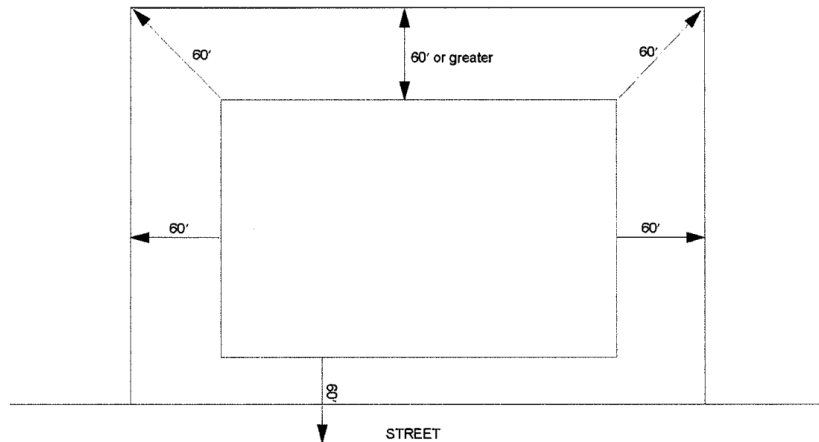
507.4 – Sprinklered, one-story buildings:

- The area of a Group A-4 building no more than one-story above grade plan of other than Type V construction shall not be limited provided:
 - Automatic sprinkler system
 - Surrounded by 60 ft wide public way or yard

47



2018 CSBC – 2015 IBC Section 507 – Unlimited Area Buildings



48

2018 CSBC – 2015 IBC Section 507 – Unlimited Area Buildings

507.4 – Sprinklered, one-story buildings:

- EXCEPTION #2: Sprinklered system not required in the indoor participant sports area in A-4, provided:
- Exit doors go directly to the outside
- Fire alarm system w/ manual fire alarm boxes per 907

49



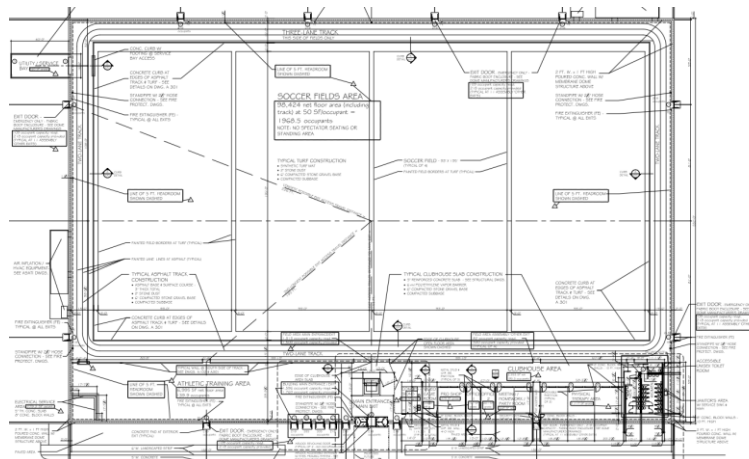
2018 CSBC – 2015 IBC Section 507 – Unlimited Area Buildings

507.4 – Sprinklered, one-story buildings:

- **EXCEPTION #2:** Sprinklered system not required in the indoor participant sports area in A-4, provided:
 - Exit doors go directly to the outside
 - Fire alarm system w/ manual fire alarm boxes per 907

50

2018 CSBC – 2015 IBC Section 507 – Unlimited Area Buildings



51



2018 CSBC – 2015 IBC Section 507 – Unlimited Area Buildings

507.4.1 – Mixed occupancy buildings w/ Groups A-1 & A-2:

- Not Type V construction
- A-1/A-2 separated from other occupancies per 508.4.4 w/ no reduction of fire-resistance ratings due to sprinklers.
- Each A-1/A-2 portion of building not to exceed max. allowable area in Section 503.1 (H&A)
- Exit doors from A-1/A-2 discharge directly to exterior

52

2018 CSBC – 2015 IBC Section 507 – Unlimited Area Buildings

507.6 – Group A-3 buildings of **Type II** construction:

- One-story
- Allowable uses: religious worship, community hall, dance hall, exhibition hall, gym, lecture hall, indoor pool, tennis court.
- No stage but allows a platform.
- Sprinkler protection throughout.
- Surrounded by 60 ft public way or yard.

53



2018 CSBC – 2015 IBC

Section 507 – Unlimited Area Buildings

507.7 – Group A-3 buildings of **Type III & IV** construction:

- One-story
- Allowable uses: religious worship, community hall, dance hall, exhibition hall, gym, lecture hall, indoor pool, tennis court.
- No stage but it allows a platform.
- Sprinkler protection throughout.
- Assembly floor within 21” of street/grade level & all exits have ramps (1012) to the street/grade level.
- Surrounded by 60 ft public way or yard.

54

2018 CSBC – 2015 IBC

Section 507 – Unlimited Area Buildings

507.12 – Motion picture theaters (Group A-1):

- Type II construction
- Motion picture theater(s) located on 1st story.
- Automatic sprinkler system
- Surrounded by 60 ft public way or yard.

55



2018 CSBC – 2015 IBC Section 508.4 – Separated Occupancies

TABLE 508.4
REQUIRED SEPARATION OF OCCUPANCIES (HOURS)

OCCUPANCY	A, E		I-1 ^a , I-3, I-4				I-2		R ^a		F-2, S-2 ^b , U				B ^c , F-1, M, S-1		H-1		H-2		H-3, H-4		H-5	
	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS
A, E	N	N	1	2	2	NP	1	2	N	1	1	2	NP	NP	3	4	2	3	2	NP	2	NP		
I-1 ^a , I-3, I-4	—	—	N	N	2	NP	1	NP	1	2	1	2	NP	NP	3	NP	2	NP	2	NP	2	NP		
I-2	—	—	—	—	N	N	2	NP	2	NP	2	NP	NP	NP	3	NP	2	NP	2	NP	2	NP		
R ^a	—	—	—	—	—	—	N	N	1 ^c	2 ^c	1	2	NP	NP	3	NP	2	NP	2	NP	2	NP		
F-2, S-2 ^b , U	—	—	—	—	—	—	—	—	N	N	1	2	NP	NP	3	4	2	3	2	NP	2	NP		
B ^c , F-1, M, S-1	—	—	—	—	—	—	—	—	—	N	N	NP	NP	2	3	1	2	1	NP					
H-1	—	—	—	—	—	—	—	—	—	—	—	—	N	NP	NP	NP	NP	NP	NP	NP	NP	NP		
H-2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	N	NP	1	NP	1	NP	1	NP		
H-3, H-4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1 ^d	NP	1	NP	1	NP		
H-5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	N	NP	

S = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1.
 NS = Buildings not equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1.
 N = No separation requirement.
 NP = Not permitted.

56

2018 CSBC – 2015 IBC Section 510 – Special Provisions

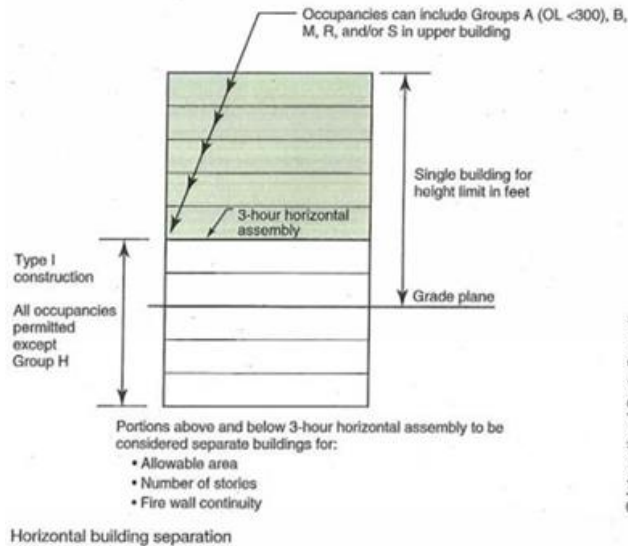
510.2 – Horizontal building separation allowance:

- Upper & lower buildings separated by 3-hour horizontal assembly.
- Lower building is Type IA construction.
- Shaft, stairway, ramp & escalator enclosures thru horizontal assembly to not less than 2 hours.
 - Exception for 3 hr enclosure below w/ 1 hr enclosure above horizontal assembly w/ 6 conditions.

57



2018 CSBC – 2015 IBC Section 510 – Special Provisions



58

2018 CSBC – 2015 IBC Section 510 – Special Provisions

510.7 – Open parking garage beneath Groups A, I, B, M & R:

- Open parking garage shall not exceed H&A of Section 406.5.
- Building above garage shall not exceed H&A of Section 503 for upper occupancy. Height measured from grade plane.
- Fire separation per Table 508.4.
- Means of egress from upper occupancies to have 2-hour minimum separation from open parking garage

59



2018 CSBC – 2015 IBC Section 803 – Wall & Ceiling Finishes

TABLE 803.11
INTERIOR WALL AND CEILING FINISH REQUIREMENTS BY OCCUPANCY^a

GROUP	SPRINKLERED ^d			NONSPRINKLERED		
	Interior exit stairways and ramps and exit passageways ^{a,b}	Corridors and enclosure for exit access stairways and ramps	Rooms and enclosed spaces ^c	Interior exit stairways and ramps and exit passageways ^{a,b}	Corridors and enclosure for exit access stairways and ramps	Rooms and enclosed spaces ^c
A-1 & A-2	B	B	C	A	A ^d	B ^e
A-3 ^f , A-4, A-5	B	B	C	A	A ^d	C

- a. Class C interior finish materials shall be permitted for wainscotting or paneling of not more than 1,000 square feet of applied surface area in the grade lobby where applied directly to a noncombustible base or over furring strips applied to a noncombustible base and fireblocked as required by Section 803.13.1.
- b. In other than Group I-3 occupancies in buildings less than three stories above grade plane, Class B interior finish for nonsprinklered buildings and Class C interior finish for sprinklered buildings shall be permitted in interior exit stairways and ramps.
- c. Requirements for rooms and enclosed spaces shall be based upon spaces enclosed by partitions. Where a fire-resistance rating is required for structural elements, the enclosing partitions shall extend from the floor to the ceiling. Partitions that do not comply with this shall be considered enclosing spaces and the rooms or spaces on both sides shall be considered one. In determining the applicable requirements for rooms and enclosed spaces, the specific occupancy thereof shall be the governing factor regardless of the group classification of the building or structure.
- d. Lobby areas in Group A-1, A-2 and A-3 occupancies shall not be less than Class B materials.
- e. Class C interior finish materials shall be permitted in places of assembly with an occupant load of 300 persons or less.
- f. For places of religious worship, wood used for ornamental purposes, trusses, paneling or chancel furnishing shall be permitted.
- g. Class B material is required where the building exceeds two stories.
- h. Class C interior finish materials shall be permitted in administrative spaces.
- i. Class C interior finish materials shall be permitted in rooms with a capacity of four persons or less.
- j. Class B materials shall be permitted as wainscotting extending not more than 48 inches above the finished floor in corridors and exit access stairways and ramps.
- k. Finish materials as provided for in other sections of this code.
- l. Applies when protected by an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2.

60

2018 CSBC – 2015 IBC Section 804 – Interior Floor Finish

Group A – Class II (min. critical radiant flux) floor finish in enclosures for stairways & ramps, exit passageways, corridors & rooms or spaces not separated from corridors

Sprinkler exception: Materials that comply with DOC FF-1 “pill test” (CPSC 16 CFR Part 1630) or ASTM D2859

61



2018 CSBC – 2015 IBC

Section 806 – Decorative Materials & Trim

806.3 Combustible decorative materials

- Curtains, draperies, fabric hangings & similar combustible decorative materials suspended from walls or ceilings shall not exceed 10% of the specific wall or ceiling to which they are attached.
- **Exception for Group A:** 75% when building sprinklered & materials attached per 803.13.

62

2018 CSBC – 2015 IBC

Section 903 – Automatic Sprinkler Systems

903.2 Where required

903.2.1 Group A

- Group A-1, A-2, A-3 & A-4: provide throughout the story of the occupancy's fire area, & throughout all stories from Group A to, & including, the levels of exit discharge (LED)
- Group A-5: coverage per 903.2.1.5

63



2018 CSBC – 2015 IBC Section 903 – Automatic Sprinkler Systems

903.2.1.1 Group A-1

Where ONE of the following conditions exist:

- Fire area exceeds 12,000 SF
- Fire area has an occupant load of 300 or more
- Fire area is located on floor other than LED
- Fire area contains a multitheater complex

64

2018 CSBC – 2015 IBC Section 903 – Automatic Sprinkler Systems

903.2.1.2 Group A-2

Where ONE of the following conditions exist:

- Fire area exceeds 5,000 SF
 - CT exception (next slide)
- Fire area has an occupant load of 300 or more, or 100 or more in dance halls, discos, nightclubs, & assembly w/ festival seating
- Fire area is located on floor other than LED

65



2018 CSBC – 2015 IBC

Section 903 – Automatic Sprinkler Systems

903.2.1.2 Group A-2 CT Exception

Exception: Existing restaurants in existing nonsprinklered *buildings* that were designated Use Group A-3 under a previous edition of the Connecticut State Building Code that undergo *addition, alteration or change of occupancy* that results in an increase in the restaurant's *fire area* providing the proposed *fire area* does not exceed 12,000 square feet (1115 m²).

66

2018 CSBC – 2015 IBC

Section 903 – Automatic Sprinkler Systems

1990 BOCA National Building Code (1994 CSBC)

302.4 Use Group A-3 structures: This use group shall include all buildings with or without an auditorium in which persons assemble for amusement, entertainment or recreation purposes as well as incidental motion picture, dramatic or theatrical presentations, lectures or other similar purposes without theatrical stage other than a raised platform; and which are principally used without permanent seating facilities, including art galleries, exhibition halls, museums, lecture halls, libraries, restaurants other than nightclubs, and recreation centers; and buildings designed for similar assembly purposes, including passenger terminals.

67



2018 CSBC – 2015 IBC
Section 903 – Automatic Sprinkler Systems

903.2.1.3 Group A-3

Where ONE of the following conditions exist:

- Fire area exceeds 12,000 SF
- Fire area has an occupant load of 300 or more
- Fire area is located on floor other than LED

68

2018 CSBC – 2015 IBC
Section 903 – Automatic Sprinkler Systems

903.2.1.4 Group A-4

Where ONE of the following conditions exist:

- Fire area exceeds 12,000 SF
- Fire area has an occupant load of 300 or more
- Fire area is located on floor other than LED

69



2018 CSBC – 2015 IBC
Section 903 – Automatic Sprinkler Systems

903.2.1.5 Group A-5

Provide sprinklers in the following areas:

- Concession stands, retail areas, press boxes & other accessory use areas in excess of 1,000 SF per space
- No fire rating required in wall separating spaces

70

2018 CSBC – 2015 IBC
Section 903 – Automatic Sprinkler Systems

903.2.1.6 Assembly occupancies on roofs

All floors between roof & LED sprinklered when:

Group A-2, occupant load over 100

Other A occupancies, occupant load over 300

71



2018 CSBC – 2015 IBC Section 903 – Automatic Sprinkler Systems



72

2018 CSBC – 2015 IBC Section 903 – Automatic Sprinkler Systems

903.2.1.7 Multiple fire areas

Provide sprinklers where multiple fire areas of Group A-1, A-2, A-3 or A-4 share exit or exit access components and the combined occupant load of these fire areas is 300 or more.

73



2018 CSBC – 2015 IBC

Section 903 – Automatic Sprinkler Systems

903.2.11.5 Commercial cooking operations

An automatic sprinkler system shall be installed in commercial kitchen exhaust hood and duct systems where an automatic sprinkler system is used to comply with 904.

74

2018 CSBC – 2015 IBC

Section 904 – Alternative Automatic Fire-Extinguishing Systems

904.2.2 Commercial hood & duct systems

- Type I hoods



75

2018 CSBC – 2015 IBC Section 905 – Standpipe Systems

905.3.2 Group A

Class 1 automatic wet standpipes shall be provided in nonsprinklered Group A buildings having an occupant load exceeding 1,000

Exceptions:

- Open-air seating
- Auto dry or semi-auto dry or manual wet allowed if not high-rise

76

2018 CSBC – 2015 IBC Section 905 – Standpipe Systems

905.3.4 Stages

Stages over 1,000 SF to have Class III wet standpipe system with 1 ½" & 2 ½ " hose connection on each side of stage.

Exception: Where building has sprinklers, a 1 ½ " hose connection shall be installed in accordance with NFPA 13 or NFPA 14 for Class II or III standpipes.

77



2018 CSBC – 2015 IBC Section 905 – Standpipe Systems



78

2018 CSBC – 2015 IBC Section 905 – Standpipe Systems

905.5 Location of Class II standpipe hose connections

905.5.1 Groups A-1 & A-2, with occupant loads over 100:

- Each side of any stage.
- Each side of the rear of the auditorium.
- Each side of the balcony.
- Each tier of dressing rooms.

79

2018 CSBC – 2015 IBC Section 907 – Fire Alarm & Detection Systems

907.2.1 Group A

Manual FA system required where occupant load **due to the assembly occupancy** is 300 or more.

Multiple Group A occupancies included if not separated by 2-hour fire barriers (separate fire areas).

Assembly uses in Group E buildings provided as required for Group E.

80

2018 CSBC – 2015 IBC Section 907 – Fire Alarm & Detection Systems

907.2.1 Group A (continued)

Exception:

Manual FA boxes not required when building has sprinklers & notification is activated upon sprinkler water flow.

81



2018 CSBC – 2015 IBC
Section 907 – Fire Alarm & Detection Systems

907.2.1.1 System initiation in Group A w/
occupant load of 1,000 or more:

- Emergency voice/alarm communication system

82

2018 CSBC – 2015 IBC
Section 907 – Fire Alarm & Detection Systems

907.2.12 Special amusement buildings:

- Automatic smoke detection system

83



2018 CSBC – 2015 IBC Section 1004 – Occupant Load

1004.1.2 Areas without fixed seating. The number of occupants shall be computed at the rate of one occupant per unit of area as prescribed in Table 1004.1.2. For areas without *fixed seating*, the *occupant load* shall be not less than the number determined by dividing the floor area under consideration by the *occupant load* factor assigned to the function of the space as set forth in Table 1004.1.2. Where an intended function is not listed in Table 1004.1.2, the *building official* shall establish a function based on a listed function that most nearly resembles the intended function.

84

2018 CSBC – 2015 IBC Section 1004 – Occupant Load

TABLE 1004.1.2
MAXIMUM FLOOR AREA ALLOWANCES PER OCCUPANT

FUNCTION OF SPACE	OCCUPANT LOAD FACTOR ^a
Accessory storage areas, mechanical equipment room	300 gross
Agricultural building	300 gross
Aircraft hangars	500 gross
Airport terminal	
Baggage claim	20 gross
Baggage handling	300 gross
Concourse	100 gross
Waiting areas	15 gross
Assembly	
Gaming floors (keno, slots, etc.)	11 gross
Exhibit gallery and museum	30 net
Assembly with fixed seats	See Section 1004.4
Assembly without fixed seats	
Concentrated	
(chairs only—not fixed)	7 net
Standing space	5 net
Unconcentrated (tables and chairs)	15 net

85



2018 CSBC – 2015 IBC Section 1004 – Occupant Load

Bowling centers, allow 5 persons for each lane including 15 feet of runway, and for additional areas	7 net
Business areas	100 gross
Courtrooms—other than fixed seating areas	40 net
Day care	35 net
Dormitories	50 gross
Educational	
Classroom area	20 net
Shops and other vocational room areas	50 net
Exercise rooms	50 gross
Group H-5 Fabrication and manufacturing areas	200 gross
Industrial areas	100 gross

86

2018 CSBC – 2015 IBC Section 1004 – Occupant Load

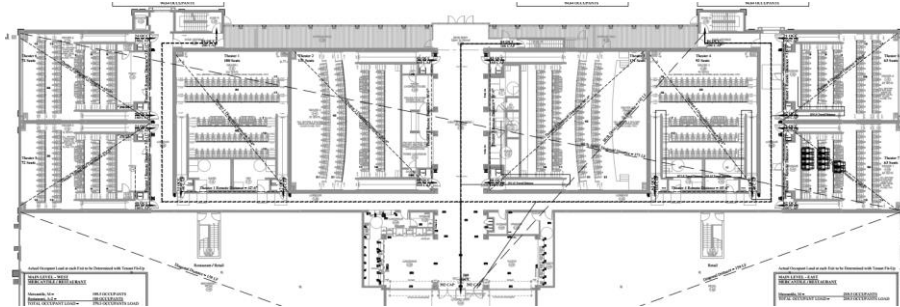
Institutional areas	
Inpatient treatment areas	240 gross
Outpatient areas	100 gross
Sleeping areas	120 gross
Kitchens, commercial	200 gross
Library	
Reading rooms	50 net
Stack area	100 gross
Locker rooms	50 gross
Mall buildings—covered and open	See Section 402.8.2
Mercantile	60 gross
Storage, stock, shipping areas	300 gross
Parking garages	200 gross
Residential	200 gross
Skating rinks, swimming pools	
Rink and pool	50 gross
Decks	15 gross
Stages and platforms	15 net
Warehouses	500 gross

For SI: 1 square foot = 0.0929 m², 1 foot = 304.8 mm.
a. Floor area in square feet per occupant.

87



2018 CSBC – 2015 IBC Section 1004 – Occupant Load



88

2018 CSBC – 2015 IBC Section 1004 – Occupant Load

1004.4 Fixed Seating

- Occupant load determined by number of fixed seats installed plus wheelchair spaces

FIXED SEATING. Furniture or fixture designed and installed for the use of sitting and secured in place including bench-type seats and seats with or without backs or arm rests.

89



2018 CSBC – 2015 IBC Section 1004 – Occupant Load

1004.4 Fixed Seating



90

2018 CSBC – 2015 IBC Section 1004 – Occupant Load

1004.4 Fixed Seating

w/o dividing arms:

18" / person



91

2018 CSBC – 2015 IBC Section 1004 – Occupant Load

1004.4 Fixed Seating

Seating booths:

24" / person

measured at the
backrest



92

2018 CSBC – 2015 IBC Section 1006 – Number of Exits & Exit Access Doorways

1006.2 Two exits or exit access doorways are required when this table is exceeded.

TABLE 1006.2.1
SPACES WITH ONE EXIT OR EXIT ACCESS DOORWAY

OCCUPANCY	MAXIMUM OCCUPANT LOAD OF SPACE	MAXIMUM COMMON PATH OF EGRESS TRAVEL DISTANCE (feet)		
		Without Sprinkler System (feet)		With Sprinkler System (feet)
		Occupant Load		
		OL ≤ 30	OL > 30	
A, E, M	49	75	75	75 ^a

- a. Buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or 903.3.1.2. See Section 903 for occupancies where *automatic sprinkler systems* are permitted in accordance with Section 903.3.1.2.
- b. Group H occupancies equipped throughout with an *automatic sprinkler system* in accordance with Section 903.2.5.
- c. For a room or space used for assembly purposes having *fixed seating*, see Section 1029.8.

93



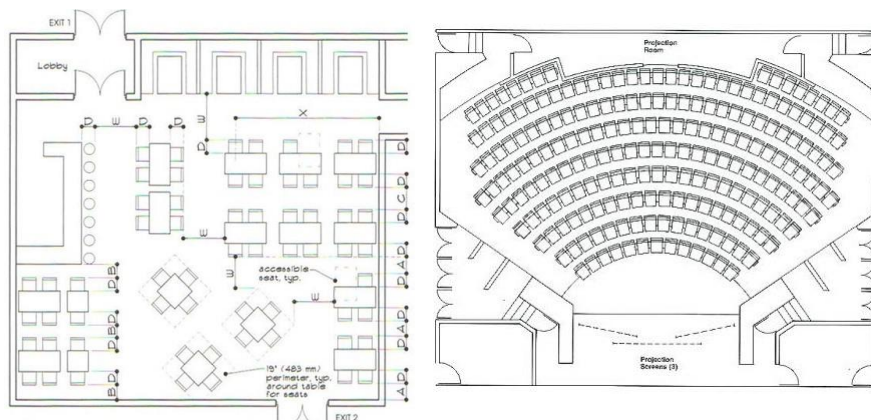
2018 CSBC – 2015 IBC Section 1008 – MOE Illumination

1008.2 MOE illuminated at all times the building space served by the MOE is occupied.

Exception #2: Aisle accessways in Group A

94

2018 CSBC – 2015 IBC Section 1008 – MOE Illumination



95



2018 CSBC – 2015 IBC Section 1008 – MOE Illumination

1008.2.1 Illumination level under normal power

- Minimum 1 fc (11 lux) at walking surface

Exception: auditoriums, theaters, concert or opera halls or similar can reduce during performance

- Externally illuminated walking surfaces: 0.2 fc
- Steps, landings, sides of ramps: self-luminous materials

96

2018 CSBC – 2015 IBC Section 1008 – MOE Illumination



97



2018 CSBC – 2015 IBC Section 1008 – MOE Illumination

1008.3 Emergency power for illumination

1008.3.1 General. In the event of power supply failure in rooms and spaces that require two or more means of egress, an emergency electrical system shall automatically illuminate all of the following areas:

1. *Aisles.*
2. *Corridors.*
3. *Exit access stairways and ramps.*

98

2018 CSBC – 2015 IBC Section 1008 – MOE Illumination

1008.3 Emergency power for illumination

1008.3.3 Other areas. In the event of power supply failure, an emergency electrical system shall automatically illuminate all of the following areas:

1. Electrical equipment rooms.
2. Fire command centers.
3. Fire pump rooms.
4. Generator rooms.
5. Public restrooms with an area greater than 300 square feet (27.87 m²).
6. *Means of egress* components, other than those within sleeping rooms, of *Group R-1 bed-and-breakfast establishments.*

99



2018 CSBC – 2015 IBC Section 1009 – Accessible MOE

1009.1 Accessible means of egress required. *Accessible means of egress shall comply with this section. Accessible spaces shall be provided with not less than one accessible means of egress. Where more than one means of egress are required by Section 1006.2 or 1006.3 from any accessible space, each accessible portion of the space shall be served by not less than two accessible means of egress.*

Exceptions:

3. In assembly areas with ramped *aisles* or stepped *aisles*, one *accessible means of egress* is permitted where the *common path of egress travel* is *accessible* and meets the requirements in Section 1029.8.

100

2018 CSBC – 2015 IBC Section 1009 – Accessible MOE

1009.3 Stairways as accessible means of egress required to have area of refuge (AOR)

Exception #7:

AOR not required for smoke-protected assembly seating areas complying with Section 1029.6.2

SMOKE-PROTECTED ASSEMBLY SEATING. Seating served by *means of egress* that is not subject to smoke accumulation within or under a structure.

101



2018 CSBC – 2015 IBC

Section 1010 – Doors, Gates & Turnstiles

1010.1.2.1 Direction of door swing

Swing in the direction of egress travel where serving a room or area containing an occupant load of 50 or more...

102

2018 CSBC – 2015 IBC

Section 1010 – Doors, Gates & Turnstiles

1010.1.9.3 Locks & Latches

permitted to prevent operation of doors where any of the following exist:

2. In buildings in occupancy Group A having an occupant load of 300 or less, Groups B, F, M and S, and in places of religious worship, the main door(s) are permitted to be equipped with key-operated locking devices from the egress side provided:

103



2018 CSBC – 2015 IBC

Section 1010 – Doors, Gates & Turnstiles

1010.1.9.3 Locks & Latches (*continued*)

- 2.1. The locking device is readily distinguishable as locked.
- 2.2. A readily visible durable sign is posted on the egress side on or adjacent to the door stating: THIS DOOR TO REMAIN UNLOCKED WHEN THIS SPACE IS OCCUPIED. The sign shall be in letters 1 inch high on a contrasting background.
- 2.3. The use of the key-operated locking device is revocable by the building official for due cause.

104

2018 CSBC – 2015 IBC

Section 1010 – Doors, Gates & Turnstiles

1010.1.9.7 Delayed Egress

Delayed egress locking

systems shall be permitted to be installed on doors serving any occupancy **except Group A, E and H** in buildings that are equipped throughout with an automatic sprinkler system ...

105



2018 CSBC – 2015 IBC
Section 1010 – Doors, Gates & Turnstiles

1010.1.9.8 Sensor release of electrically locked egress doors

Electric locks on sensor released doors located in a means of egress in buildings with Group A (& others) and entrance doors to tenant spaces in occupancies in Group A (& others) are permitted where installed & operated in accordance with 6 criteria.

106

2018 CSBC – 2015 IBC
Section 1010 – Doors, Gates & Turnstiles

1010.1.9.9 Electromagnetically locked egress doors.

Doors in the means of egress in buildings with an occupancy in Group A (& others) and doors to tenant spaces in Group A (& others) shall be permitted to be locked with an electromagnetic locking system where equipped with hardware that incorporates a built-in switch and where installed and operated in accordance with 6 criteria

107



2018 CSBC – 2015 IBC

Section 1010 – Doors, Gates & Turnstiles

1010.1.10 Panic & fire exit hardware

Doors serving a Group H occupancy and doors serving rooms or spaces with an occupant load of 50 or more in a Group A or E occupancy shall not be provided with a latch or lock other than panic hardware or fire exit hardware.

Exceptions:

1. Main exit of Group A locking per Section 1010.1.9.3, Item 2.
2. Doors serving Group A or E occupancy permitted to be electromagnetically locked in accordance with Section 1010.1.9.9.

108

2018 CSBC – 2015 IBC

Section 1010 – Doors, Gates & Turnstiles

1010.2 Gates

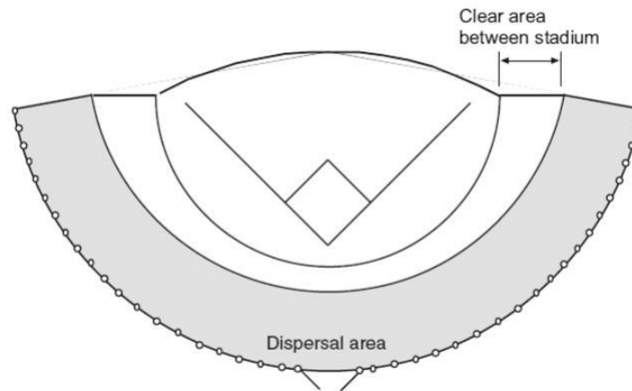
1010.2.1 Stadiums. *Panic hardware* is not required on gates surrounding stadiums where such gates are under constant immediate supervision while the public is present, and where safe dispersal areas based on 3 square feet (0.28 m²) per occupant are located between the fence and enclosed space. Such required safe dispersal areas shall not be located less than 50 feet (15 240 mm) from the enclosed space. See Section 1028.5 for *means of egress* from safe dispersal areas.

109



2018 CSBC – 2015 IBC Section 1010 – Doors, Gates & Turnstiles

1010.2 Gates (continued)



110

2018 CSBC – 2015 IBC Section 1010 – Doors, Gates & Turnstiles

1010.3 Turnstiles

1010.3 Turnstiles. Turnstiles or similar devices that restrict travel to one direction shall not be placed so as to obstruct any required *means of egress*.



111

2018 CSBC – 2015 IBC Section 1010 – Doors, Gates & Turnstiles

1010.3 Turnstiles (*continued*)

Exception: Each turnstile counts toward 50 occupants where all 4 are met:

1. Turn free in direction of egress when primary power lost & manual release by employee.
2. Turnstiles can account for 50% max of req'd egress capacity.
3. Turnstiles 39" high max.
4. 16 ½" wide min at & below 39"; 22" min above.

112

2018 CSBC – 2015 IBC Section 1010 – Doors, Gates & Turnstiles

1010.3 Turnstiles (*continued*)

When part of an accessible route, turnstiles to have 36" min. clear width below 34" height, & 32" min. clear width between 34" & 80" height, & shall not be a revolving device mechanism.



113

2018 CSBC – 2015 IBC Section 1010 – Doors, Gates & Turnstiles

1010.3 Turnstiles (*continued*)

1010.3.1 High turnstiles more than 39" high shall meet the requirements for revolving doors.



114

2018 CSBC – 2015 IBC Section 1010 – Doors, Gates & Turnstiles

1010.3 Turnstiles (*continued*)

1010.3.2 Additional door.

Where serving an occupant load greater than 300, each non-portable turnstile shall have a side-hinged swinging door that conforms to Section 1010.1 within 50 feet.

115



2018 CSBC – 2015 IBC Section 1012 – Ramps

1012.1 Scope

This section applies to ramps used as a component of a
MOE

Exception #1: Ramped aisles within assembly rooms or
spaces shall comply with the provisions of Section
1029.

116

2018 CSBC – 2015 IBC Section 1013 – Exit Signs

1013.1 Where required.

Exception #5: In Group A-4 & A-5, exit signs not
required on seating side of vomitories or
openings into seating areas where exit signs are
in the concourse that is readily apparent from
the vomitories. Emergency egress lighting req'd.

117



2018 CSBC – 2015 IBC Section 1013 – Exit Signs



118

2018 CSBC – 2015 IBC Section 1014 – Handrails

1014.2 Height.

Exception #3: Handrails on top of a guard where permitted along stepped aisles and ramped aisles in accordance with Section 1029.15.

119



2018 CSBC – 2015 IBC Section 1014 – Handrails

1014.4 Continuity.

Exception #5: Handrails serving stepped aisles or ramped aisles are permitted to be discontinuous per Section 1029.15.1.



120

2018 CSBC – 2015 IBC Section 1014 – Handrails

1014.6 Extensions.

Exception #2: Handrails serving aisles in assembly spaces are permitted to comply with per Section 1029.15.



121



2018 CSBC – 2015 IBC Section 1015 – Guards

1015.2 Where required.

Exceptions:

2. Audience side of stages & raised platforms, including stairs leading up to the stage & raised platforms.



122

2018 CSBC – 2015 IBC Section 1015 – Guards

1015.2 Where required.

Exceptions:

3. Raised stage & platform areas, such as runways, ramps & side stages for entertainment of presentations.



123

2018 CSBC – 2015 IBC
Section 1015 – Guards

1015.2 Where required.

Exceptions:

4. Vertical openings in performance area of stages & platforms.
5. Elevated walking surfaces appurtenant to stages & platforms for access & using special lighting or equipment.

124

2018 CSBC – 2015 IBC
Section 1015 – Guards

1015.2 Where required.

Exceptions:

7. In assembly seating areas at cross aisles per Section 1029.16.2.

125



2018 CSBC – 2015 IBC Section 1015 – Guards

1015.3 Height.

Exception:

5. The guard height in assembly seating areas shall comply with Section 1029.16 as applicable.

126

2018 CSBC – 2015 IBC Section 1015 – Guards

1015.4 Opening limitations.

Exception:

5. In assembly seating areas at **ends of aisles** that terminate at fascia of boxes, balconies & galleries: 4" sphere rule up to 26" high; 8" sphere up to 42" high.

127



2018 CSBC – 2015 IBC

Section 1017 – Exit Access Travel Distance

1017.2 Limitations. *Exit access* travel distance shall not exceed the values given in Table 1017.2.

TABLE 1017.2
EXIT ACCESS TRAVEL DISTANCE^a

OCCUPANCY	WITHOUT SPRINKLER SYSTEM (feet)	WITH SPRINKLER SYSTEM (feet)
A, E, F-1, M, R, S-1	200	250 ^b

EXIT ACCESS. That portion of a *means of egress* system that leads from any occupied portion of a building or structure to an *exit*.

128

2018 CSBC – 2015 IBC

Section 1018 – Aisles

1018.1 General. *Aisles* and *aisle accessways* serving as a portion of the *exit access* in the *means of egress* system shall comply with the requirements of this section. *Aisles* or *aisle accessways* shall be provided from all occupied portions of the *exit access* that contain seats, tables, furnishings, displays and similar fixtures or equipment. The minimum width or required capacity of *aisles* shall be unobstructed.

Exception: Encroachments complying with Section 1005.7.

1018.2 Aisles in assembly spaces. *Aisles* and *aisle accessways* serving a room or space used for assembly purposes shall comply with Section 1029.

129



2018 CSBC – 2015 IBC Section 1019 – Exit Access Stairways & Ramps

1019.3 Occupancies other than I-2 & I-3:

7. Serving open-air seating complying with exit access travel distance reqmts of Section 1029.7.
8. Serving balcony, gallery or press box & the main assembly floor in theaters, place of worship, auditoriums, sport facilities, & sim.

130

2018 CSBC – 2015 IBC Section 1020 – Corridors

TABLE 1020.1
CORRIDOR FIRE-RESISTANCE RATING

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

131



2018 CSBC – 2015 IBC Section 1025 – Luminous Egress Path Markings

Group A is one of the occupancies where req'd.

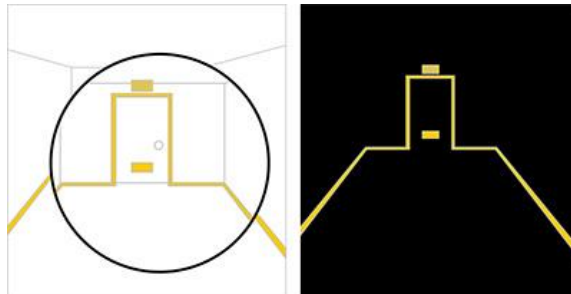
- Interior exit stairways/ramps
- Exit passageways



132

2018 CSBC – 2015 IBC Section 1025 – Luminous Egress Path Markings

CT Amendment also requires it for exit access corridors in Group A occupancies with a total occupant load greater than 300 persons.



133

2018 CSBC – 2015 IBC Section 1029 – Assembly

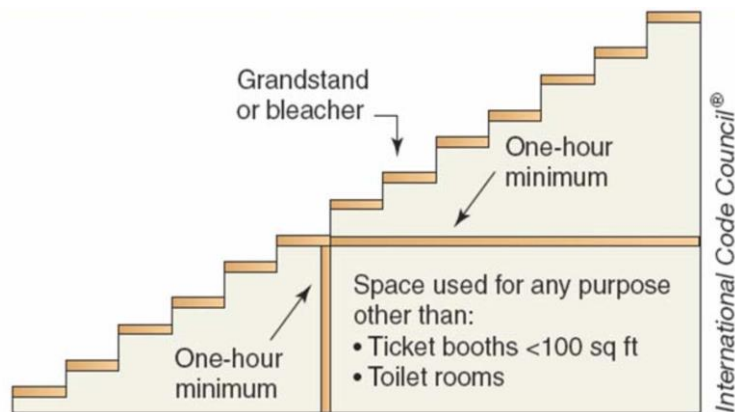
1029.1 General.

A room of space used for assembly purposes that contains seats, tables, displays, equipment or other material shall comply with this section.

134

2018 CSBC – 2015 IBC Section 1029 – Assembly

1029.1.1.1 Spaces under grandstands & bleachers.



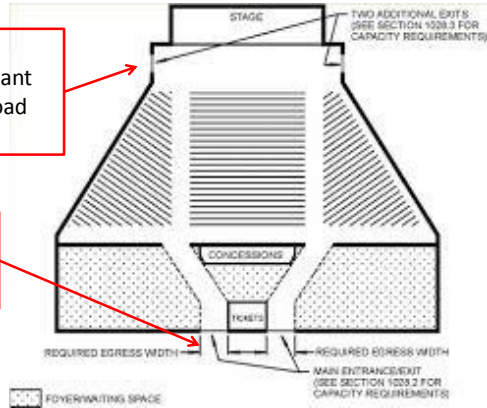
135

2018 CSBC – 2015 IBC Section 1029 – Assembly

1029.2 Assembly main exit

Other exits total
min. 1/2 of occupant
load (occupant load
over 300)

Exit width min.
2/3 of occupant
load



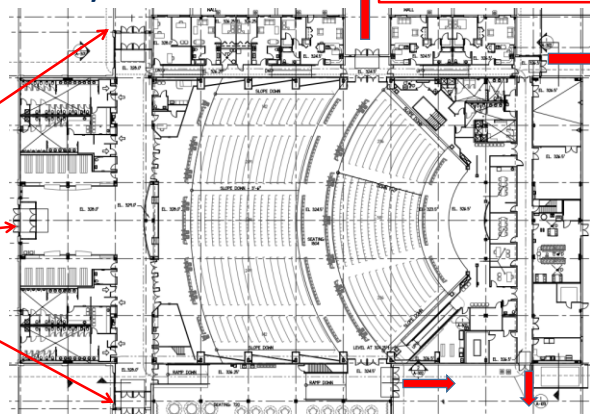
136

2018 CSBC – 2015 IBC Section 1029 – Assembly

1029.2 Assembly main exit

Exits distributed around
perimeter, 100% capacity min.

No well-defined
or Multiple main
Entrances/exits



137

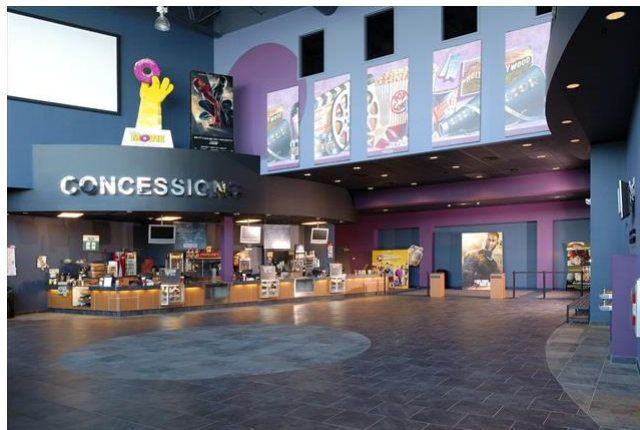
2018 CSBC – 2015 IBC Section 1029 – Assembly

1029.4 Foyers & lobbies

Group A-1, where persons are admitted when seats not available, persons allowed to wait in a lobby or similar space, not encroaching on min. required egress width. Lobby to have clear and unobstructed path to main exit.

138

2018 CSBC – 2015 IBC Section 1029 – Assembly



139

2018 CSBC – 2015 IBC Section 1029 – Assembly

1029.5 Interior balcony & gallery MOE

- 2 MOE when seating capacity of balconies, galleries or press boxes have 50 seats or more

140

2018 CSBC – 2015 IBC Section 1029 – Assembly



141

2018 CSBC – 2015 IBC Section 1029 – Assembly

1029.6 Capacity of aisle for assembly



142

2018 CSBC – 2015 IBC Section 1029 – Assembly

1029.6.1 Without smoke protection.

- Not less than the occupant load served by the egress element in accordance with all of the following, as applicable:

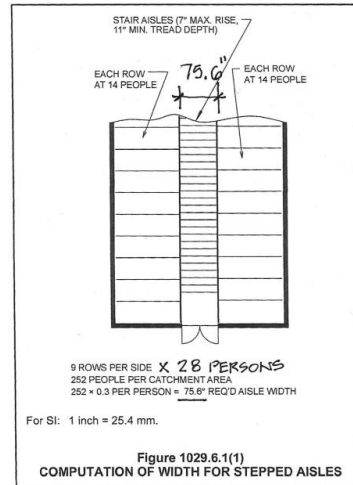
143



2018 CSBC – 2015 IBC Section 1029 – Assembly

1029.6.1 Without smoke protection.

1. Not less than 0.3"/occ. served for stepped aisles w/ treads 11" or more.



144

2018 CSBC – 2015 IBC Section 1029 – Assembly

1029.6.1 Without smoke protection.

2. Not less than 0.005"/occ. ADDITIONAL capacity for each 0.10" of riser height above 7".
3. If stepped aisle descent, not less than 0.075" of ADDITIONAL capacity on portions of aisle capacity w/ no handrail within 30".

145



2018 CSBC – 2015 IBC Section 1029 – Assembly

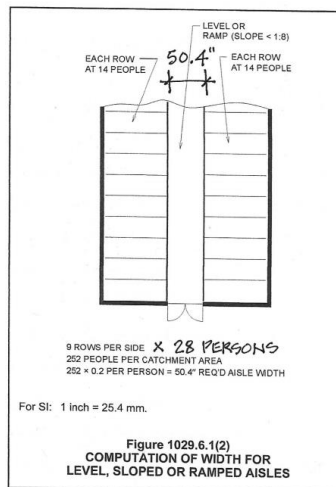
1029.6.1 Without smoke protection.

4. Ramped aisles (>1:12), not less than 0.22"/occ.

Level or less steep aisles, not less than 0.20"/occ.

146

2018 CSBC – 2015 IBC Section 1029 – Assembly



147



2018 CSBC – 2015 IBC Section 1029 – Assembly

1029.6.2 Smoke-protected assembly seating.

- Reduced aisle widths.
- Use Table 1029.6.2 for capacity of aisles.
- An NFPA 101 life safety evaluation is required.
- Smoke control system per Sect. 909 is required.
- Roof at last 15' above highest aisle/aisle accessway.
- Sprinklers required.

148

2018 CSBC – 2015 IBC Section 1029 – Assembly

1029.6.2 Smoke-protected assembly seating.

TABLE 1029.6.2
CAPACITY FOR AISLES FOR SMOKE-PROTECTED ASSEMBLY

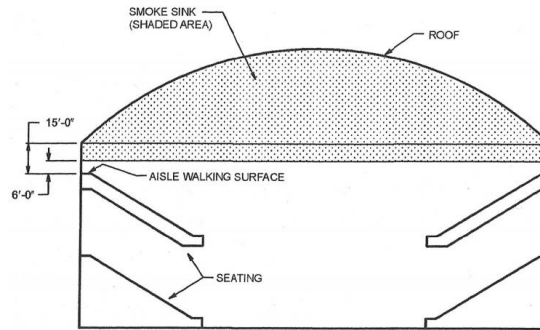
TOTAL NUMBER OF SEATS IN THE SMOKE-PROTECTED ASSEMBLY SEATING	INCHES OF CAPACITY PER SEAT SERVED			
	Stepped aisles with handrails within 30 inches	Stepped aisles without handrails within 30 inches	Level aisles or ramped aisles not steeper than 1 in 10 in slope	Ramped aisles steeper than 1 in 10 in slope
Equal to or less than 5,000	0.200	0.250	0.150	0.165
10,000	0.130	0.163	0.100	0.110
15,000	0.096	0.120	0.070	0.077
20,000	0.076	0.095	0.056	0.062
Equal to or greater than 25,000	0.060	0.075	0.044	0.048

149



2018 CSBC – 2015 IBC Section 1029 – Assembly

1029.6.2 Smoke-protected assembly seating.



m.

Figure 1029.6.2.2(1)
ROOF HEIGHT (CONVEX DOME ROOF)

150

2018 CSBC – 2015 IBC Section 1029 – Assembly

1029.7 Travel Distance.

- Nonsprinklered: 200' max. to exit door
- Sprinklered: 250' max. to exit door
- Smoke-protected seating: 200' to vomitory/concourse
- Open-air seating: 400' to bldg exterior
- Open-air seating in Type I/II const: Unlimited.
- TD measured as you walk, not jumping over seats.

151

2018 CSBC – 2015 IBC Section 1029 – Assembly

1029.8 Common path of egress travel.

- 30' max.
- <50 occupants: 75' max.
- Smoke-protected seating: 50' max.

152

2018 CSBC – 2015 IBC Section 1029 – Assembly

1029.8.1 Path through adjacent row.

- Not more than 24 seats between the 2 aisles
- Min. clear width between rows for the rows between the 2 aisles shall be 12" + 0.6" for each additional seat above 7 in the row between aisles.
- Smoke-protected seating: 40 seats min.; Clear width 12" + 0.3"

153



2018 CSBC – 2015 IBC Section 1029 – Assembly

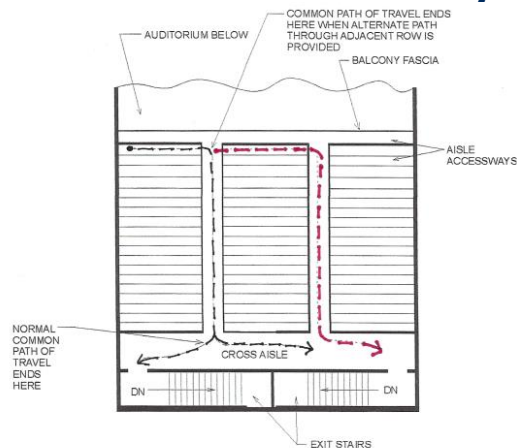


Figure 1029.8.1
PATH THROUGH ADJACENT ROWS

154

2018 CSBC – 2015 IBC Section 1029 – Assembly

1029.9 Assembly aisles are required.

- If space contains seats, tables, displays, similar fixtures or equipment, there must be aisles leading to exits or exit access doorways.

155

2018 CSBC – 2015 IBC Section 1029 – Assembly

1029.9.1 Minimum aisle width, comply with one of the following:

1. 48" for stepped aisles w/ seating on each side
 - 36" where aisles serve <50 seats.
2. 36" for stepped aisles w/ seating on one side
 - 23" where aisle serves 5 rows max on one side.

156

2018 CSBC – 2015 IBC Section 1029 – Assembly

1029.9.1 Minimum aisle width (continued):

3. 23" between stepped aisle handrail/guard & seating where aisle subdivided by mid-aisle handrail.
4. 42" for level/ramped aisles w/ seating on both sides
 - 36" where aisle serves <50 seats.
5. 36" for level/ramped aisles w/ seating on one side.
 4. 30" where ramped aisle serves 14 seats max. (not an accessible route)

157



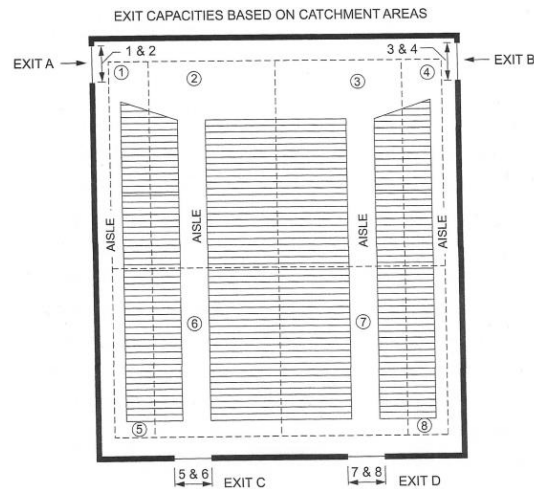
2018 CSBC – 2015 IBC Section 1029 – Assembly

1029.9.2 Aisle catchment area:

- Catchment area is portion of total space served by a section of aisle.
- Balanced use of all means of egress w/ number of person in proportion to egress capacity.

158

2018 CSBC – 2015 IBC Section 1029 – Assembly



159

2018 CSBC – 2015 IBC Section 1029 – Assembly

1029.9.3 Converging aisles:

- Req'd capacity not less than combined req'd capacity of the converging aisles.

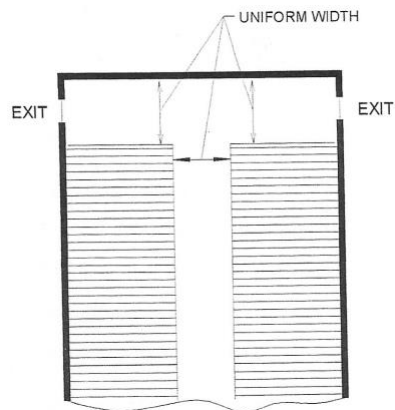


160

2018 CSBC – 2015 IBC Section 1029 – Assembly

1029.9.4 Uniform width & capacity:

- Uniform width & capacity where egress is possible in either of 2 directions.



161

2018 CSBC – 2015 IBC Section 1029 – Assembly

1029.9.5 Dead end aisles:

- 20' max. in length
- Permitted to be longer than 16 rows permitted where seats beyond the 16th row are not more than 24 seats from another aisle.
- Smoke-protected seating, not exceed 21 rows; longer where seats beyond 21st row are not more than 40 seats from another aisle.

162

2018 CSBC – 2015 IBC Section 1029 – Assembly

1029.9.5 Dead end aisles:

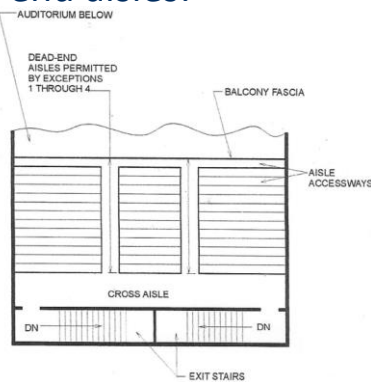


Figure 1029.9.5
TYPICAL BALCONY ARRANGEMENT

163

2018 CSBC – 2015 IBC Section 1029 – Assembly

1029.10 Transitions:

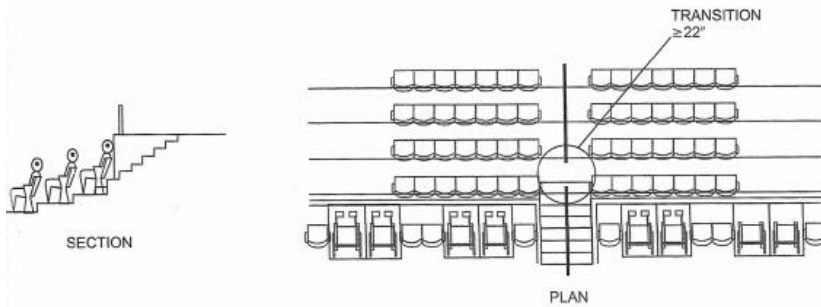


Figure 1029.10.2.1(1)
TRANSITION BETWEEN STAIRWAY AND STEPPED AISLE AT THE HIGHER END OF THE FLIGHT

164

2018 CSBC – 2015 IBC Section 1029 – Assembly

1029.10 Transitions:

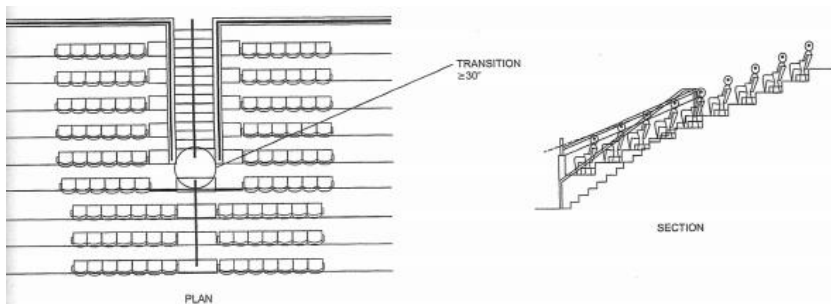


Figure 1029.10.2.1(2)
TRANSITION BETWEEN STEPPED AISLE AND STAIRWAY AND THE LOWER END OF THE FLIGHT

165

2018 CSBC – 2015 IBC Section 1029 – Assembly

1029.10 Transitions:

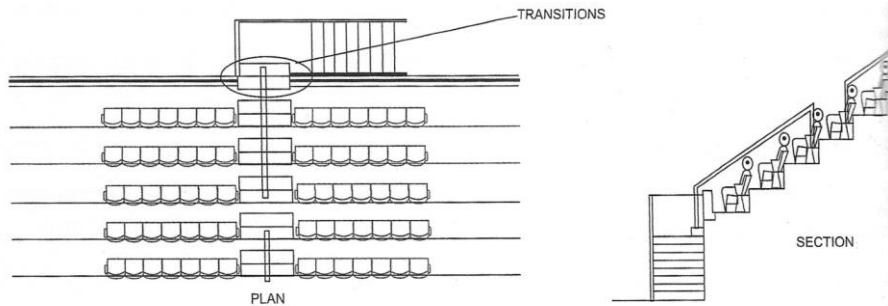


Figure 1029.10.2.2(1)
EXAMPLE OF A STEPPED AISLE TURNING TO A STAIRWAY

166

2018 CSBC – 2015 IBC Section 1029 – Assembly

1029.10 Transitions:

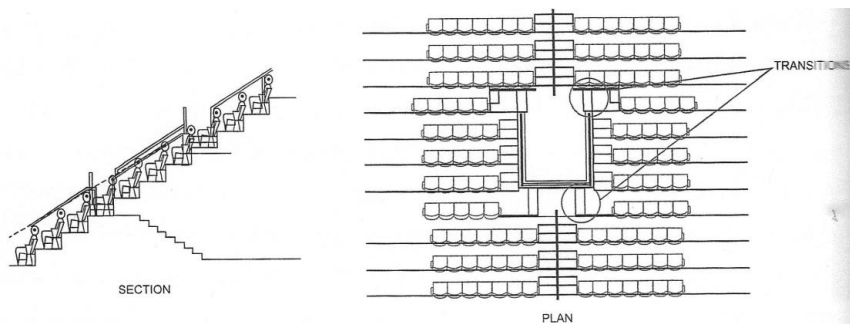


Figure 1029.10.2.2(2)
EXAMPLE OF TURNS IN A STEPPED AISLE

167

2018 CSBC – 2015 IBC Section 1029 – Assembly

1029.12 Aisle accessways for seating at tables:

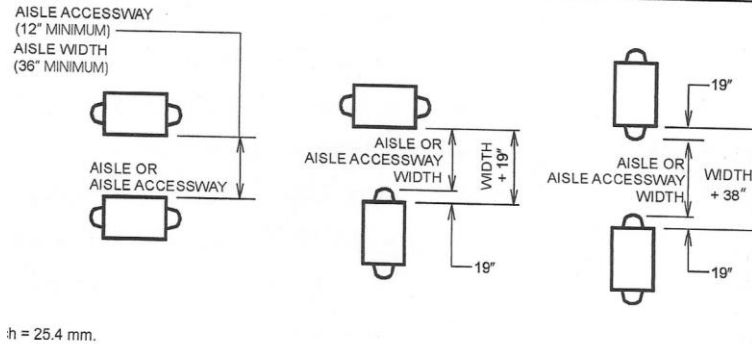


Figure 1029.12.1
AISLE AND AISLE ACCESSWAY MEASUREMENT WITH SEATING AND TABLES

168

2018 CSBC – 2015 IBC Section 1029 – Assembly

1029.12 Aisle accessways for seating at tables:

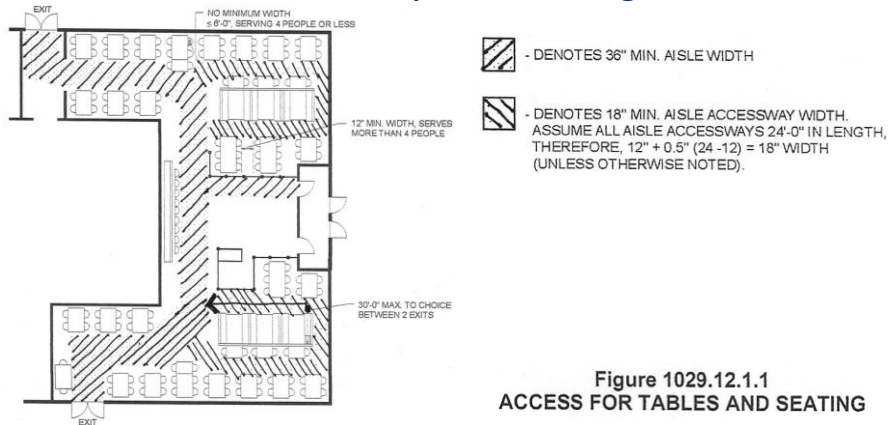


Figure 1029.12.1.1
ACCESS FOR TABLES AND SEATING

169

2018 CSBC – 2015 IBC Section 1029 – Assembly

1029.12 Aisle accessways for seating in rows:

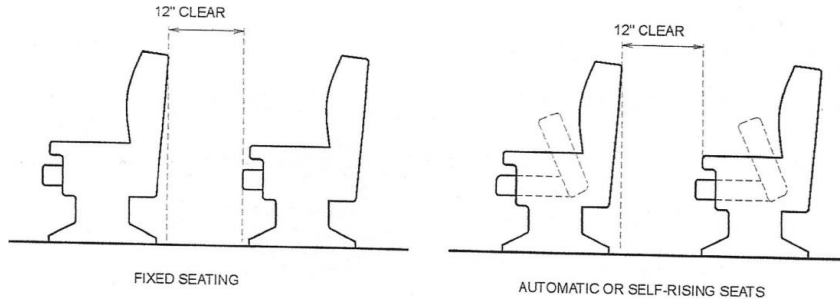


Figure 1029.12.2(1)
MINIMUM REQUIRED ROW WIDTH CLEARANCE FOR AISLE ACCESSWAYS

170

2018 CSBC – 2015 IBC Section 1029 – Assembly

1029.12 Aisle accessways for seating in rows:

TABLE 1029.12.2.1
SMOKE-PROTECTED ASSEMBLY AISLE ACCESSWAYS

TOTAL NUMBER OF SEATS IN THE SMOKE-PROTECTED ASSEMBLY SEATING	MAXIMUM NUMBER OF SEATS PER ROW PERMITTED TO HAVE A MINIMUM 12-INCH CLEAR WIDTH AISLE ACCESSWAY			
	Aisle or doorway at both ends of row		Aisle or doorway at one end of row only	
	Seats with backrests	Seats without backrests	Seats with backrests	Seats without backrests
Less than 4,000	14	21	7	10
4,000	15	22	7	10
7,000	16	23	8	11
10,000	17	24	8	11
13,000	18	25	9	12
16,000	19	26	9	12
19,000	20	27	10	13
22,000 and greater	21	28	11	14

171



2018 CSBC – 2015 IBC Section 1029 – Assembly

1029.12.2.1 Dual access rows of seating:

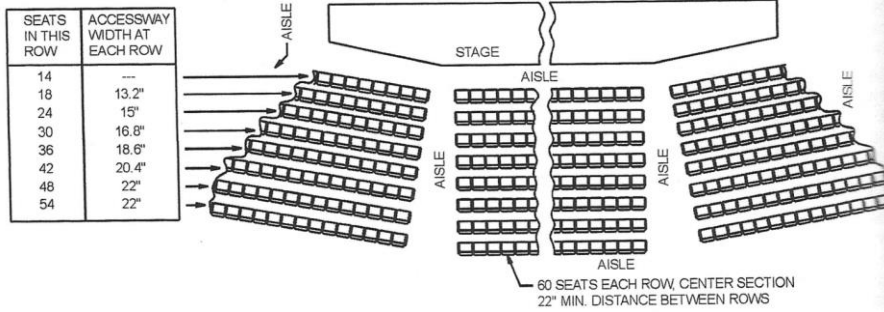
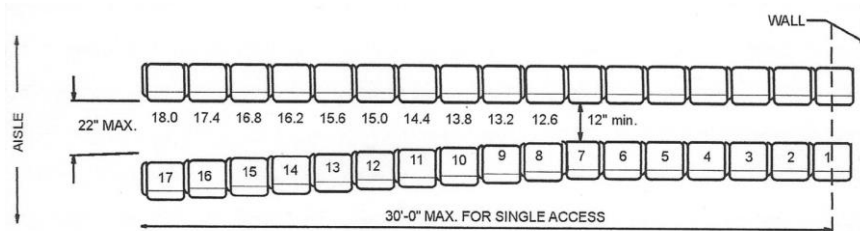


Figure 1029.12.2.1
TYPICAL DUAL-ACCESS ROW—MINIMUM AISLE ACCESSWAY WIDTH

172

2018 CSBC – 2015 IBC Section 1029 – Assembly

1029.12.2.2 Single access rows of seating:



For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm.

Figure 1029.12.2.2
TYPICAL SINGLE-ACCESS ROW—MINIMUM AISLE ACCESSWAY WIDTH FOR SEATS WITH BACKRESTS

173

2018 CSBC – 2015 IBC Section 1029 – Assembly

1029.13.2 Stepped aisles:

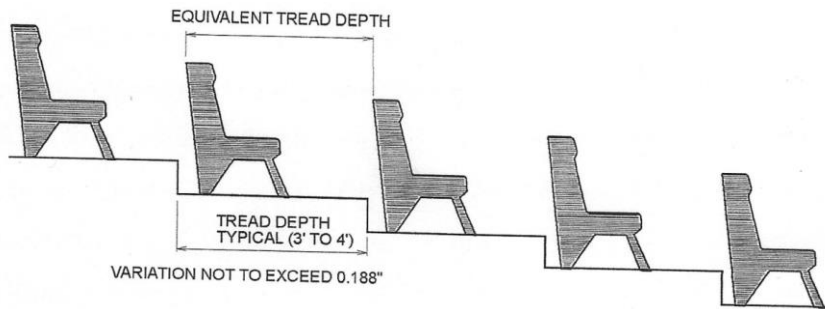


Figure 1029.13.2.1
TYPICAL SEATING PLATFORMS ALSO USED AS STEPPING AISLES

174

2018 CSBC – 2015 IBC Section 1029 – Assembly

1029.13.2 Stepped aisles:

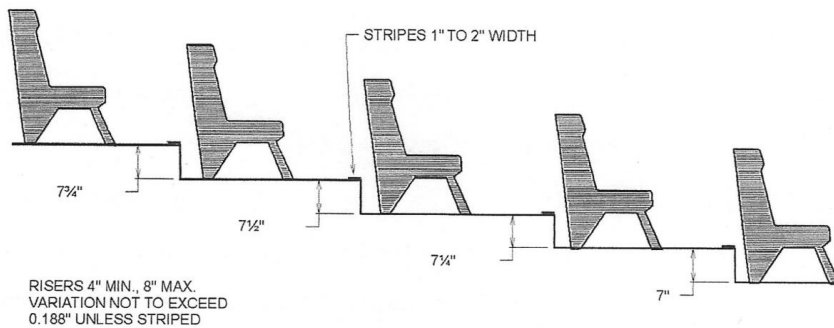
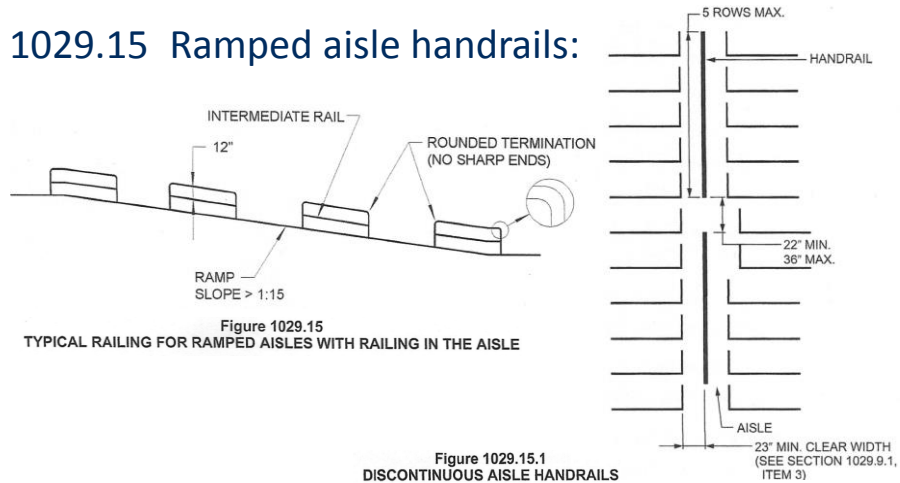


Figure 1029.13.2.2
TYPICAL RISER CONSTRUCTION IN STEPPED AISLES

175

2018 CSBC – 2015 IBC Section 1029 – Assembly

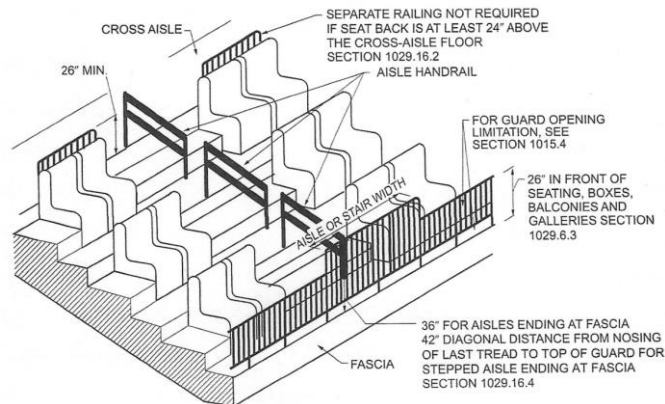
1029.15 Ramped aisle handrails:



176

2018 CSBC – 2015 IBC Section 1029 – Assembly

1029.16 Guards:



177

2018 CSBC – 2015 IBC Section 1103 – Accessibility Scoping

1103.2.8 Exception for place of religious worship
Raised or lowered areas < 300 SF & 7" or more
change in elevation, used primarily for the
performance of religious ceremonies

178

2018 CSBC – 2015 IBC Section 1104 – Accessible Route

1104.3.2 Press boxes

Exceptions:

- Press boxes in bleachers, 500 SF max.
- Freestanding press boxes > 12' AFG,
500 SF max. aggregate area



179

2018 CSBC – 2015 IBC Section 1108 – Special Occupancies

1108.2 Assembly area seating

Assembly areas with **fixed seating**:

1108.2.1 Equal provision of services

1108.2.2 Provide wheelchair spaces per Table 1108.2.2.1

1108.2.2.2 Luxury boxes, club boxes & suites shall have wheelchair spaces per Table 1108.2.2.1

1108.2.2.3 Other boxes to have wheelchair spaces per Table 1108.2.2.1 in at least 20% of boxes

180

2018 CSBC – 2015 IBC Section 1108 – Special Occupancies

TABLE 1108.2.2.1
ACCESSIBLE WHEELCHAIR SPACES

CAPACITY OF SEATING IN ASSEMBLY AREAS	MINIMUM REQUIRED NUMBER OF WHEELCHAIR SPACES
4 to 25	1
26 to 50	2
51 to 100	4
101 to 300	5
301 to 500	6
501 to 5,000	6, plus 1 for each 150, or fraction thereof, between 501 through 5,000
5,001 and over	36 plus 1 for each 200, or fraction thereof, over 5,000

181



2018 CSBC – 2015 IBC Section 1108 – Special Occupancies

1108.2 Assembly area seating

Assembly areas with **fixed seating**: (continued)

1108.2.3 Companion seats: min. 1 per required wheelchair space.

1108.2.4 Disperse wheelchair spaces on the main level & one of each 2 additional levels, & each box or suite. (3 exceptions)

1108.2.5 At least 5%, but not less than 1, of the total aisle seats shall be designated aisle seats & closest to accessible routes.

182

2018 CSBC – 2015 IBC Section 1108 – Special Occupancies

1108.2 Assembly area seating

1108.2.6 Lawn seating areas & exterior overflow seating areas (w/o fixed seats) shall connect to accessible route

183



2018 CSBC – 2015 IBC Section 1108 – Special Occupancies



184

2018 CSBC – 2015 IBC Section 1108 – Special Occupancies

1108.2.7 Assistive listening systems

Required where audible communications are integral to the use of the assembly space



185

2018 CSBC – 2015 IBC Section 1108 – Special Occupancies

TABLE 1108.2.7.1
RECEIVERS FOR ASSISTIVE LISTENING SYSTEMS

CAPACITY OF SEATING IN ASSEMBLY AREAS	MINIMUM REQUIRED NUMBER OF RECEIVERS	MINIMUM NUMBER OF RECEIVERS TO BE HEARING-AID COMPATIBLE
50 or less	2	2
51 to 200	2, plus 1 per 25 seats over 50 seats*	2
201 to 500	2, plus 1 per 25 seats over 50 seats*	1 per 4 receivers*
501 to 1,000	20, plus 1 per 33 seats over 500 seats*	1 per 4 receivers*
1,001 to 2,000	35, plus 1 per 50 seats over 1,000 seats*	1 per 4 receivers*
Over 2,000	55, plus 1 per 100 seats over 2,000 seats*	1 per 4 receivers*

186

2018 CSBC – 2015 IBC Section 1108 – Special Occupancies

1108.2 Assembly area seating

1108.2.8 Performance areas

An accessible route shall connect performance areas to assembly seating if there is a circulation path.

An accessible route shall connect performance areas and backstage areas.

187



2018 CSBC – 2015 IBC Section 1108 – Special Occupancies

1108.2 Assembly area seating

1108.2.9 Dining and drinking areas.

Interior & exterior floor areas shall be accessible & on an accessible route. (4 exceptions)

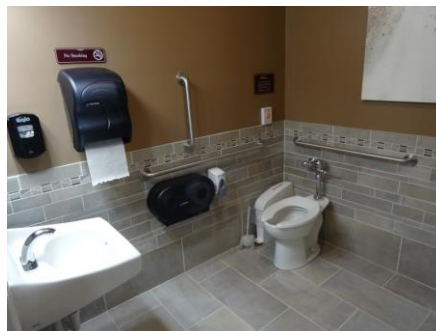


188

2018 CSBC – 2015 IBC Section 1108 – Special Occupancies

1108.2.1 Family or assisted-use toilet rooms

Required in assembly occupancies, where 6 or more M & F WC's are required.



189

2018 CSBC – 2015 IBC Section 1607 – Live Loads

TABLE 1607.1
MINIMUM UNIFORMLY DISTRIBUTED LIVE LOADS, L_o , AND
MINIMUM CONCENTRATED LIVE LOADS⁹

4. Assembly areas		
Fixed seats (fastened to floor)	60 ^m	
Follow spot, projections and control rooms	50	
Lobbies	100 ^m	—
Movable seats	100 ^m	
Stage floors	150 ^m	
Platforms (assembly)	100 ^m	
Other assembly areas	100 ^m	
9. Dining rooms and restaurants	100 ^m	—
19. Libraries		
Corridors above first floor	80	1,000
Reading rooms	60	1,000
Stack rooms	150 ^{b,m}	1,000

190

2018 CSBC – 2015 IBC Section 1607 – Live Loads

TABLE 1607.1
MINIMUM UNIFORMLY DISTRIBUTED LIVE LOADS, L_o , AND
MINIMUM CONCENTRATED LIVE LOADS⁹

OCCUPANCY OR USE	UNIFORM (psf)	CONCENTRATED (pounds)
24. Recreational uses:		
Bowling alleys, poolrooms and similar uses	75 ^m	
Dance halls and ballrooms	100 ^m	
Gymnasiums	100 ^m	
Ice skating rink	250 ^m	—
Reviewing stands, grandstands and bleachers	100 ^{c,m}	
Roller skating rink	100 ^m	
Stadiums and arenas with fixed seats (fastened to floor)	60 ^{c,m}	

191



2018 CSBC – 2015 IBC Section 2902 – Minimum Plumbing Facilities

[P] TABLE 2902.1
MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES*
(See Sections 2902.1.1 and 2902.2)

No.	CLASSIFICATION	OCCUPANCY	DESCRIPTION	WATER CLOSETS (URINALS SEE SECTION 419.2 OF THE INTERNATIONAL PLUMBING CODE)		LAVATORIES		BATHTUBS/SHOWERS	DRINKING FOUNTAINS (SEE SECTION 410 OF THE INTERNATIONAL PLUMBING CODE)	OTHER
				Male	Female	Male	Female			
1	Assembly	A-1 ^d	Theaters and other buildings for the performing arts and motion pictures	1 per 125	1 per 65	1 per 200		—	1 per 500	1 service sink
		A-2 ^d	Nightclubs, bars, taverns, dance halls and buildings for similar purposes	1 per 40	1 per 40	1 per 75		—	1 per 500	1 service sink
			Restaurants, banquet halls and food courts	1 per 75	1 per 75	1 per 200		—	1 per 500	1 service sink
		A-3 ^d	Auditoriums without permanent seating, art galleries, exhibition halls, museums, lecture halls, libraries, arcades and gymnasiums	1 per 125	1 per 65	1 per 200		—	1 per 500	1 service sink
			Passenger terminals and transportation facilities	1 per 500	1 per 500	1 per 750		—	1 per 1,000	1 service sink
			Places of worship and other religious services	1 per 150	1 per 75	1 per 200		—	1 per 1,000	1 service sink

192

2018 CSBC – 2015 IBC Section 2902 – Minimum Plumbing Facilities

[P] TABLE 2902.1
MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES*
(See Sections 2902.1.1 and 2902.2)

No.	CLASSIFICATION	OCCUPANCY	DESCRIPTION	WATER CLOSETS (URINALS SEE SECTION 419.2 OF THE INTERNATIONAL PLUMBING CODE)		LAVATORIES		BATHTUBS/SHOWERS	DRINKING FOUNTAINS (SEE SECTION 410 OF THE INTERNATIONAL PLUMBING CODE)	OTHER
				Male	Female	Male	Female			
		A-4	Coliseums, arenas, skating rinks, pools and tennis courts for indoor sporting events and activities	1 per 75 for the first 1,500 and 1 per 120 for the remainder exceeding 1,500	1 per 40 for the first 1,520 and 1 per 60 for the remainder exceeding 1,520	1 per 200	1 per 150	—	1 per 1,000	1 service sink
		A-5	Stadiums, amusement parks, bleachers and grandstands for outdoor sporting events and activities	1 per 75 for the first 1,500 and 1 per 120 for the remainder exceeding 1,500	1 per 40 for the first 1,520 and 1 per 60 for the remainder exceeding 1,520	1 per 200	1 per 150	—	1 per 1,000	1 service sink

193





Use of OEDM Training Materials

Use of Office of Education and Data Management (OEDM) training materials must be approved in writing by the State of Connecticut, Department of Administrative Services' Office of Communications. In approving of such use, the State of Connecticut assumes no liability associated with such use, including, but not limited to, the user's dissemination of any inaccurate information or interpretation in connection with its use of these training materials. Use of the training materials is at the sole risk of the user, and the State's approval of the use does not constitute an endorsement of the user or its intended use.

194

Milton Gregory "Greg" Grew, AIA

Licensed Architect Building Official Codes Consultant

Town of East Hartford

Department of Permits & Inspections

740 Main St, East Hartford, CT 06108

Tel (860) 291-7345

Email mggrew@easthartfordct.gov

www.easthartfordct.gov/inspections-and-permits

Connecticut Code Consultants

241 Main St South, Woodbury, CT 06798

Tel (203) 217-1074

Email: mggrew@grewdesign.com

www.ctbuildingcodes.com

www.grewdesign.com

195

