



STATE OF WASHINGTON

STATE BUILDING CODE COUNCIL

1500 Jefferson Street SE • P.O. Box 41449 • Olympia, Washington 98504
(360) 407-9277 • fax (360) 586-9088 • e-mail sbcc@des.wa.gov • www.sbcc.wa.gov

Date: July 15 28, 2019

RE: Errors within and Council requested changes to the 2018 IBC CR-102

This is an Erratum to the CR-102 (WSR 19-11-092 Dated May 17, 2019) that will be addressed in the CR-103. Please replace the May 17, 2019 document with this one.

WAC 51-50-0308 Section 308—Institutional Group I.

308.2 Institutional Group I-1. Institutional Group I-1 occupancy shall include buildings, structures or portions thereof for more than sixteen persons, excluding staff, who reside on a twenty-four-hour basis in a supervised environment and receive custodial care. Buildings of Group I-1 shall be classified as one of the occupancy conditions specified in Section ~~308.3.1~~308.2.1 or ~~308.3.2~~308.2.2. This group shall include, but not be limited to, the following:

Alcohol and drug centers;

Assisted living facilities as licensed by Washington state under chapter 388-78A WAC;

Congregate care facilities;

Group homes;

Halfway houses;

Residential board and care facilities;

Social rehabilitation facilities;

Residential treatment facilities as licensed by Washington state under chapter 246-337 WAC.

WAC 51-50-0412 Section 412—Aircraft-related occupancies.

Commented [BR(1)]: This was not addressed in the 6/28/2019 Document

[F]412.87.3 Means of egress. The means of egress from heliports, heliports and helistops shall comply with the provisions of Chapter 10. Landing areas located on buildings or structures shall have two or more means of egress. For landing areas less than 60 feet in length or less than 2,000 square feet (186 m²) in area, the second means of egress is permitted to be a fire escape, alternating tread device or ladder leading to the floor below. On Group I-2 roofs with (~~helistops~~) heliports or helipads and helistops, rooftop structures enclosing exit stair enclosures or elevator shafts shall be enclosed with fire barriers and opening protectives that match the rating of their respective shaft enclosures below.

WAC 51-50-0420 Section 420—Groups I-1, R-1, R-2, R-3. 420.2 Separation walls. Walls separating dwelling units in the same building, walls separating sleeping units in the same building and walls separating dwelling or sleeping units from other occupancies contiguous to them in the same building shall be constructed as fire partitions in accordance with Section 708. Buildings containing multiple sleeping units with common use or central kitchens shall not be classified as a single dwelling.

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- EXCEPTIONS:**
1. Where sleeping units include private bathrooms, walls between bedrooms and the associated private bathrooms are not required to be constructed as fire partitions.
 2. Where sleeping units are constructed as suites, walls between bedrooms within the sleeping unit and the walls between the bedrooms and associated living spaces are not required to be constructed as fire partitions.
 3. In Groups R-3 and R-4 facilities, walls within the dwelling units or sleeping units are not required to be constructed as fire partitions.
 4. Groups R-2 and I-1 arranged into residential sleeping suites containing a maximum of five sleeping residents. Separation between bedrooms, living areas and toilet rooms within these residential sleeping suites shall not be required.
 5. Group I-1 sleeping areas arranged so that a dedicated staff member has direct observation over a multiple resident sleeping room, without intervening full height walls, shall not be required to provide fire partitions within the resident sleeping area.

WAC 51-50-0504 Section 504—Building height and number of stories. Table 504.3

Allowable Building Height in Feet Above Grade Plane^a

Occupancy Classification	Type of Construction												
	See	Type I		Type II		Type III		Type IV				Type V	
	Footnotes	A	B	A	B	A	B	A	B	C	HT	A	B
	NS ^b	UL	160	65	55	65	55	65	65	65	65	50	40

Occupancy Classification	Type of Construction												
	See Footnotes	Type I		Type II		Type III		Type IV				Type V	
		A	B	A	B	A	B	A	B	C	HT	A	B
A, B, E, F, M, S, U	S	UL	180	85	75	85	75	270	180	85	85	70	60
H-1, H-2, H-3, H-5	NS ^{c,d}	UL	160	65	55	65	55	120	90	65	65	50	40
	S												
H-4	NS ^{c,d}	UL	160	65	55	65	55	65	65	65	65	50	40
	S	UL	180	85	75	85	75	140	100	85	85	70	60
I-1 Condition 1, I-3	NS ^{d,e}	UL	160	65	55	65	55	65	65	65	65	50	40
	S	UL	180	85	75	85	75	180	120	85	85	70	60
I-1 Condition 2, I-2	NS ^{d,e,f}	UL	160	65	55	65	55	65	65	65	65	50	40
	S ⁱ	UL	180	85									
I-4	NS ^{d,g}	UL	160	65	55	65	55	65	65	65	65	50	40
	S	UL	180	85	75	85	75	180 270	120 180	85	85	70	60
R	NS ^d	UL	160	65	55	65	55	65	65	65	65	50	40
	S13R	60	60	60	60	60	60	60	60	60	60	60	60
	S	UL	180	85	75	85	75	270	180	85	85	70	60

For SI: 1 foot = 304.8 mm.

UL = Unlimited; NS = Buildings not equipped throughout with an automatic sprinkler system; S = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1; S13R = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.2.

- ^a See Chapters 4 and 5 for specific exceptions to the allowable height in this chapter.
- ^b See Section 903.2 for the minimum thresholds for protection by an automatic sprinkler system for specific occupancies.
- ^c New Group H occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.5.

Occupancy Classification	Type of Construction												
	See Footnotes	Type I		Type II		Type III		Type IV				Type V	
		A	B	A	B	A	B	A	B	C	HT	A	B
B	NS	UL	11	5	3	5	3	5	5	5	5	3	2
	S	UL	12	6	4	6	4	18	12	9	6	4	3
E	NS	UL	5	3	2	3	2	3	3	3	3	1	1
	S	UL	6	4	3	4	3	9	6	4	4	2	2
F-1	NS	UL	11	4	2	3	2	3	3	3		2	1
	S	UL	12	5	3	4	3	10	7	5	5	3	2
F-2	NS	UL	11	5	3	4	3	5	5	5	5	3	2
	S	UL	12	6	4	5	4	12	8	6	6	4	3
H-1	NS ^{c,d}	1	1	1	1	1	1	NP	NP	NP	1	1	NP
	S							1	1	1			
H-2	NS ^{c,d}	UL	3	2	1	2	1	1	1	1	2	1	1
	S							2	2	2			
H-3	NS ^{c,d}	UL	6	4	2	4	2	3	3	3	4	2	1
	S							4	4	4			
H-4	NS ^{c,d}	UL	7	5	3	5	3	5	5	5	5	3	2
	S	UL	8	6	4	6	4	8	7	6	6	4	3
H-5	NS ^{c,d}	4	4	3	3	3	3	2	2	2	3	3	2
	S							3	3	3			
I-1 Condition 1	NS ^{d,e}	UL	9	4	3	4	3	4	4	4	4	3	2
	S	UL	10	5	4	5	4	10	7	5	5	4	3
	NS ^{d,e}	UL	9	4	3	4	3	3	3	3	4	3	2

Occupancy Classification	Type of Construction												
	See Footnotes	Type I		Type II		Type III		Type IV				Type V	
		A	B	A	B	A	B	A	B	C	HT	A	B
	S13R	4	4									4	3
	S	UL	12	5	5	5	5	18	12	5	5	4	3
S-1	NS	UL	11	4	2	3	2	4	4	4	4	3	1
	S	UL	12	5	3	4	3	10	7	5	5	4	2
S-2	NS	UL	11	5	3	4	3	4	4	4	4	4	2
	S	UL	12	6	4	5	4	12	8	5	5	5	3
U	NS	UL	5	4	2	3	2	4	4	4	4	2	1
	S	UL	6	5	3	4	3	9	6	5	5	3	2

UL = Unlimited; NP = Not permitted; NS = Buildings not equipped throughout with an automatic sprinkler system; S = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1; S13R = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.2.

- ^a See Chapters 4 and 5 for specific exceptions to the allowable height in this chapter.
- ^b See Section 903.2 for the minimum thresholds for protection by an automatic sprinkler system for specific occupancies.
- ^c New Group H occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.5.
- ^d The NS value is only for use in evaluation of existing building height in accordance with the International Existing Building Code.
- ^e New Group I-1 and I-3 occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.6. For new Group I-1 occupancies Condition 1, see Exception 1 of Section 903.2.6.
- ^f New and existing Group I-2 occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.6 and Section 1103.5 of the *International Fire Code*.
- ^g For new Group I-4 occupancies, see Exceptions 2 and 3 of Section 903.2.6.
- ^h New Group R occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.8.
- ⁱ I-1, Condition 2 Assisted living facilities licensed per chapter 388-78A WAC and residential treatment facilities as licensed by Washington state under chapter 246-337 WAC shall be permitted to use the allowable number of stories for R-2 occupancies.

[I-1, Condition 2 Assisted living facilities licensed per chapter 388-78A WAC and residential treatment facilities as licensed by Washington state under chapter 246-337 WAC shall be permitted to use the allowable height above grade plane for R-2 occupancies.](#)

Commented [BR(3)]: This was not addressed in the 6/28/2019 Document

WAC 51-50-0506 Section 506—Building area. Table 506.2

Allowable Area Factor (At = NS, S1, S13R, S13D or SM, as applicable) In Square Feet^{a,b}

Occupancy Classification	See Footnotes	Type of Construction											
		Type I		Type II		Type III		Type IV				Type V	
		A	B	A	B	A	B	A	B	C	HT	A	B
A-1	NS	UL	UL	15,500	8,500	14,000	8,500	45,000	30,000	((18,000)) 18,750	15,000	11,500	5,500
	S1	UL	UL	62,000	34,000	56,000	34,000	180,000	120,000	75,000	60,000	46,000	22,000
	SM	UL	UL	46,500	25,500	42,000	25,500	135,000	90,000	56,250	45,000	34,500	16,500
A-2	NS	UL	UL	15,500	9,500	14,000	9,500	45,000	30,000	18,750	15,000	11,500	6,000
	S1	UL	UL	62,000	38,000	56,000	38,000	180,000	120,000	75,000	60,000	46,000	24,000
	SM	UL	UL	46,500	28,500	42,000	28,500	135,000	90,000	56,250	45,000	34,500	18,000
A-3	NS	UL	UL	15,500	9,500	14,000	9,500	45,000	30,000	18,750	15,000	11,500	6,000
	S1	UL	UL	62,000	38,000	56,000	38,000	180,000	120,000	75,000	60,000	46,000	24,000
	SM	UL	UL	46,500	28,500	42,000	28,500	135,000	90,000	56,000 5,625 56,250	45,000	34,500	18,000
A-4	NS	UL	UL	15,500	9,500	14,000	9,500	45,000	30,000	18,750	15,000	11,500	6,000
	S1	UL	UL	62,000	38,000	56,000	38,000	180,000	120,000	75,000	60,000	46,000	24,000
	SM	UL	UL	46,500	28,500	42,000	28,500	135,000	90,000	56,250	45,000	34,500	18,000
A-5	NS	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL
	S1												
	SM												
B	NS	UL	UL	37,500	23,000	28,500	19,000	108,000	75,000	45,000	36,000	18,000	9,000

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Occupancy Classification	Sec	Type of Construction											
		Type I		Type II		Type III		Type IV				Type V	
		A	B	A	B	A	B	A	B	C	HT	A	B
	S1	UL	UL	150,000	92,000	114,000	76,000	432,000	288,000	180,000	144,000	72,000	36,000
	SM	UL	UL	112,500	69,000	85,500	57,000	324,000	216,000	135,000	108,000	54,000	27,000
E	NS	UL	UL	26,500	14,500	23,500	14,500	76,500	51,000	31,875	25,500	18,500	9,500
	S1	UL	UL	106,000	58,000	94,000	58,000	306,000	204,000	127,500	102,000	74,000	38,000
	SM	UL	UL	79,500	43,500	70,500	43,500	229,500	153,000	95,625	76,500	55,500	28,500
F-1	NS	UL	UL	25,000	15,500	19,000	12,000	100,500	67,000	41,875	33,500	14,000	8,500
	S1	UL	UL	100,000	62,000	76,000	48,000	402,000	268,000	167,500	134,000	56,000	34,000
	SM	UL	UL	75,000	46,500	57,000	36,000	301,500	201,000	125,625	100,500	42,000	25,500
F-2	NS	UL	UL	37,500	23,000	28,500	18,000	151,500	101,000	63,125	50,500	21,000	13,000
	S1	UL	UL	150,000	92,000	114,000	72,000	606,000	404,000	252,500	202,000	84,000	52,000
	SM	UL	UL	112,500	69,000	85,500	54,000	454,500	303,000	189,375	151,500	63,000	39,000
H-1	NS ^c	21,000	16,500	11,000	7,000	9,500	7,000	10,500	10,500	10,000	10,500	7,500	NP
	S1												
H-2	NS ^c	21,000	16,500	11,000	7,000	9,500	7,000	10,500	10,500	10,000	10,500	7,500	3,000
	S1												
	SM												
H-3	NS ^c	UL	60,000	26,500	14,000	17,500	13,000	25,000 25,500	25,000 25,500	25,000 25,500	25,500	10,000	5,000
	S1												
	SM												
H-4	NS ^{c,d}	UL	UL	37,500	17,500	28,500	17,500	((75,000)) 72,000	54,000	40,500	36,000	18,000	6,500
	S1	UL	UL	150,000	70,000	114,000	70,000	288,000	216,000	162,000	144,000	72,000	26,000
	SM	UL	UL	112,500	52,500	85,500	52,500	216,000	162,000	121,500	108,000	54,000	19,500

Occupancy Classification	See Footnotes	Type of Construction											
		Type I		Type II		Type III		Type IV				Type V	
		A	B	A	B	A	B	A	B	C	HT	A	B
	S1	UL	UL	96,000	64,000	96,000	64,000	246,000	164,000	102,500	82,000	48,000	28,000
	SM	UL	UL	72,000	48,000	72,000	48,000	184,500	123,000	76,875	61,500	36,000	21,000
R-2	NS ^{d,h}	UL	UL	24,000	16,000	24,000	16,000	61,500	41,000	25,625	20,500	12,000	7,000
	S13R												
	S1	UL	UL	96,000	64,000	96,000	64,000	246,000	164,000	102,500	82,000	48,000	28,000
	SM	UL	UL	72,000	48,000	72,000	48,000	184,500	123,000	76,875	61,500	36,000	21,000
R-3	NS ^{d,h}	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL
	S13R												
	S1												
	SM												
R-4	NS ^{d,h}	UL	UL	24,000	16,000	24,000	16,000	((61,000)) 61,500	41,000	25,625	20,500	12,000	7,000
	S13R												
	S1	UL	UL	96,000	64,000	96,000	64,000	246,000	164,000	102,500	82,000	48,000	28,000
	SM	UL	UL	72,000	48,000	72,000	48,000	184,500	123,000	76,875	61,500	36,000	21,000
S-1	NS	UL	48,000	26,000	17,500	26,000	17,500	76,500	51,000	31,875	25,500	14,000	9,000
	S1	UL	192,000	104,000	70,000	104,000	70,000	306,000	204,000	127,500	102,000	56,000	36,000
	SM	UL	144,000	78,000	52,500	78,000	52,500	229,500	153,000	95,625	76,500	42,000	27,000
S-2	NS	UL	79,000	39,000	26,000	39,000	26,000	115,500	77,000	48,125	38,500	21,000	13,500
	S1	UL	316,000	156,000	104,000	156,000	104,000	462,000	308,000	192,500	154,000	84,000	54,000
	SM	UL	237,000	117,000	78,000	117,000	78,000	346,500	231,000	144,375	115,500	63,000	40,500
U	NS	UL	35,500	19,000	8,500	14,000	8,500	54,000	36,000	22,500	18,000	9,000	5,500
	S1	UL	142,000	76,000	34,000	56,000	34,000	216,000	144,000	90,000	72,000	36,000	22,000
	SM	UL	106,500	57,000	25,500	42,000	25,500	162,000	108,000	67,500	54,000	27,000	16,500

For SI: 1 square foot = 0.0929 m².

UL = Unlimited; NP = Not permitted; NS = Buildings not equipped throughout with an automatic sprinkler system; S1 = Buildings a maximum of one story above grade plane equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1; SM = Buildings two or more stories above grade plane equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1; S13R = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.2; S13D = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.3.

- ^a See Chapters 4 and 5 for specific exceptions to the allowable height in this chapter.
- ^b See Section 903.2 for the minimum thresholds for protection by an automatic sprinkler system for specific occupancies.
- ^c New Group H occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.5.
- ^d The NS value is only for use in evaluation of existing building area in accordance with the International Existing Building Code.
- ^e New Group I-1 and I-3 occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.6. For new Group I-1 occupancies Condition 1, see Exception 1 of Section 903.2.6.
- ^f New and existing Group I-2 occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.6 and Section 1103.5 of the *International Fire Code*.
- ^g For new Group I-4 occupancies, see Exceptions 2 and 3 of Section 903.2.6.
- ^h New Group R occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.8.
- ⁱ The maximum allowable area for a single-story nonsprinklered Group U greenhouse is permitted to be 9,000 square feet, or the allowable area shall be permitted to comply with Table C102.1 of Appendix C.

WAC 51-50-0510 Section 510—Special provisions. 510.2 Horizontal building separation allowance. A building shall be considered as separate and distinct buildings for the purpose of determining area limitations, continuity of fire walls, limitation of number of stories and type of construction where all of the following conditions are met:

1. The buildings are separated with a *horizontal assembly* having a *fire-resistance rating* of not less than 3 hours where vertical offsets are provided as part of a *horizontal assembly*, the vertical offset and the structure supporting the vertical offset shall have a *fire-resistance rating* of not less than 3 hours.
2. The building below the *horizontal assembly* is of Type IA construction.
3. *Shaft, stairway, ramp* and escalator enclosures through the *horizontal assembly* shall have not less than a 2-hour *fire-resistance rating* with opening protective in accordance with Section ((716.5)) 716.

EXCEPTION: Where the enclosure walls below the *horizontal assembly* have not less than a 3-hour *fire-resistance rating* with opening protectives in accordance with Section ~~((716.5))~~ 716, the enclosure walls extending above the *horizontal assembly* shall be permitted to have a 1-hour *fire-resistance rating* provided:

1. The building above the *horizontal assembly* is not required to be of Type I construction.
2. The enclosure connects fewer than four *stories*; and
3. The enclosure opening protective above the *horizontal assembly* have a *fire protection rating* of not less than 1 hour.

~~4. Interior exit stairways located within the Type IA building are permitted to be of combustible materials where both of the following requirements are met:~~

~~4.1. The building above the Type IA building is of Type III, IV, or V construction.~~

~~4.2. The stairway located in the Type IA building is enclosed by 3-hour *fire-resistance-rated* construction with opening protectives in accordance with Section 716.~~

~~4. Interior exit stairways located within the Type IA building are permitted to be of combustible materials where both of the following requirements are met:~~

~~4.1. The building above the Type IA building is of Type III, IV, or V construction.~~

~~4.2. The stairway located in the Type IA building is enclosed by 3-hour *fire-resistance-rated* construction with opening protectives in accordance with Section 716.~~

~~4. The building or buildings above the *horizontal assembly* shall be permitted to have multiple Group A occupancy uses, each with an *occupant load* of less 300, or Group B, Group I-1, Condition 2 licensed care facilities, and residential treatment facilities, M, R, or S occupancies.~~

~~5. The building below the *horizontal assembly* shall be protected throughout by an *approved automatic sprinkler system* in accordance with Section 903.3.1.1, and shall be permitted to be any occupancy allowed by this code except Group H.~~

~~6. The maximum *building height* in feet (mm) shall not exceed the limits set forth in Section 504.3 for the building having the smaller allowable height as measured from the grade plane. Group I-1, Condition 2 licensed care facilities and residential treatment facilities shall be permitted to use the values for maximum height in feet and stories for Group R-2 occupancies.~~

510.5 Group R-1 and R-2 buildings of Type IIIA construction. For buildings of Type IIIA construction in Groups R-1 and R-2 the maximum allowable height in Table 504.3 shall be increased by 10 feet and the maximum allowable number of stories in Table 504.4 shall be increased by one ~~foot~~ where the first floor assembly above the basement has a *fire-resistance rating* of not less than 3 hours and the floor area is subdivided by 2-hour *fire-resistance-rated* fire walls into areas of not more than 3,000 square feet (279 m²).

WAC 51-50-0602 Section 602—Construction classification. Table 602

602.4 Type IV. Type IV construction is that type of construction in which the building elements are mass timber or noncombustible materials and have fire-resistance ratings in accordance with Table 601. Mass timber elements shall meet the fire-resistance rating requirements of this section based on either the fire-resistance rating of the noncombustible protection, the mass timber, or a combination of both and shall be determined in accordance with Section 703.2 or 703.3. The minimum dimensions and permitted materials for building elements shall comply with the provisions of this section including [Table 602.4.4](#) and Section 2304.11. Mass timber elements of Types IV-A, IV-B and IV-C construction shall be protected with noncombustible protection applied directly to the mass timber in accordance with Sections 602.4.1 through 602.4.3. The time assigned to the noncombustible protection shall be determined in accordance with Section 703.8 and comply with 722.7.

Cross-laminated timber shall be labeled as conforming to ANSI/APA PRG ((~~320~~)) 320-18 as referenced in Section 2303.1.4.

Exterior load-bearing walls and nonload-bearing walls shall be mass timber construction, or shall be of noncombustible construction.

EXCEPTION: Exterior load-bearing walls and nonload-bearing walls of Type IV-HT Construction in accordance with Section 602.4.4.

The interior building elements, including nonload-bearing walls and partitions, shall be of mass timber construction or of noncombustible construction.

EXCEPTION: Interior building elements and nonload-bearing walls and partitions of Type IV-HT Construction in accordance with Section 602.4.4.

Combustible concealed spaces are not permitted except as otherwise indicated in Sections 602.4.1 through 602.4.4. Combustible stud spaces within light frame walls of Type IV-HT construction shall not be considered concealed spaces, but shall comply with Section 718.

In buildings of Type IV-A, B, and C, construction with an occupied floor located more than 75 feet above the lowest level of fire department access, up to and including 12 stories or 180 feet above grade plane, mass timber interior exit and elevator hoistway enclosures shall be protected in accordance with Section

Commented [BR(5): This table is not in the 2018 code.

602.4.1.2. In buildings greater than 12 stories or 180 feet above grade plane, interior exit and elevator hoistway enclosures shall be constructed of noncombustible materials.

602.4.4 Type IV-HT. Type IV-HT construction (Heavy Timber, HT) is that type of construction in which the exterior walls are of noncombustible materials and the interior building elements are of solid wood, laminated heavy timber or structural composite lumber (SCL), without concealed spaces. The minimum dimensions for permitted materials including solid timber, glued-laminated timber, structural composite lumber (SCL) and cross-laminated timber (CLT) and details of Type IV construction shall comply with the provisions of this section, including Table 602.4.4 and Section 2304.11. Exterior walls complying with Section 602.4.4.1 or 602.4.4.2 shall be permitted. Interior walls and partitions not less than 1 hour fire-resistance rating or heavy timber conforming with Section 602.4.4.8+2304.11.2.2 shall be permitted. Cross laminated timber (CLT) dimensions used in this section are actual dimensions. Lumber decking shall be in accordance with Section 2304.9.

602.4.4.3 Columns. Wood columns shall be sawn or glued laminated and shall be not less than 8 inches (203 mm), nominal, in any dimension where supporting floor loads and not less than 6 inches (152 mm) nominal in width and not less than 8 inches (203 mm) nominal in depth where supporting roof and ceiling loads only. Columns shall be continuous or superimposed and connected in an approved manner. Protection in accordance with Section 704.2 is not required.

602.4.4.4 Floor framing. Wood beams and girders shall be of sawn or glued laminated timber and shall be not less than 6 inches (152 mm) nominal in width and not less than 10 inches (254 mm) nominal in depth. Framed sawn or glued laminated timber arches, which spring from the floor line and support floor loads, shall be not less than 8 inches (203 mm) nominal in any dimension. Framed timber trusses supporting floor loads shall have members of not less than 8 inches (203 mm) nominal in any dimension.

602.4.4.5 Roof framing. Wood frame or glued laminated arches for roof construction, which spring from the floor line or from grade and do not support floor loads, shall have members not less than 6 inches (152 mm) nominal in width and have not less than 8 inches (203 mm) nominal in depth for the lower half of the height and not less than 6 inches (152 mm) nominal in depth for the upper half. Framed or glued laminated arches for roof construction that spring from the top of walls or wall abutments, framed timber trusses and other roof framing, which do not support floor loads, shall have members not less than 4 inches (102 mm) nominal in width and not less than 6 inches (152 mm) nominal in depth. Spaced members shall be permitted to be composed of two or more pieces not less than 3 inches (76 mm) nominal in thickness where blocked solidly throughout their intervening spaces or where spaces are tightly closed by a continuous wood cover plate of not less than 2 inches (51 mm) nominal in thickness

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secured to the underside of the members. Splice plates shall be not less than 3 inches (76 mm) nominal in thickness. Where protected by approved automatic sprinklers under the roof deck, framing members shall be not less than 3 inches (76 mm) nominal in width.

602.4.4.6 Floors. Floors shall be without concealed spaces. Wood floors shall be constructed in accordance with Section 602.4.4.6.1 or 602.4.4.6.2.

602.4.4.6.1 Sawn or glued laminated plank floors. Sawn or glued laminated plank floors shall be one of the following:

1. Sawn or glued laminated planks, splined or tongue and groove, of not less than 3 inches (76 mm) nominal in thickness covered with 1 inch (25 mm) nominal dimension tongue and groove flooring, laid crosswise or diagonally, 15/32 inch (12 mm) wood structural panel or 1/2 inch (12.7 mm) particleboard.

2. Planks not less than 4 inches (102 mm) nominal in width set on edge close together and well spiked and covered with 1 inch (25 mm) nominal dimension flooring or 15/32 inch (12 mm) wood structural panel or 1/2 inch (12.7 mm) particleboard.

The lumber shall be laid so that no continuous line of joints will occur except at points of support. Floors shall not extend closer than 1/2 inch (12.7 mm) to walls. Such 1/2 inch (12.7 mm) space shall be covered by a molding fastened to the wall and so arranged that it will not obstruct the swelling or shrinkage movements of the floor. Corbelling of masonry walls under the floor shall be permitted to be used in place of molding.

602.4.4.6.2 Cross laminated timber floors. Cross laminated timber shall be not less than 4 inches (102 mm) in thickness. Cross laminated timber shall be continuous from support to support and mechanically fastened to one another. Cross laminated timber shall be permitted to be connected to walls without a shrinkage gap providing swelling or shrinking is considered in the design. Corbelling of masonry walls under the floor shall be permitted to be used.

602.4.4.7 Roofs. Roofs shall be without concealed spaces and wood roof decks shall be sawn or glued laminated, splined or tongue and groove plank, not less than 2 inches (51 mm) nominal in thickness; 1 1/8 inch thick (32 mm) wood structural panel (exterior glue); planks not less than 3 inches (76 mm) nominal in width, set on edge close together and laid as required for floors; or of cross laminated timber. Other types of decking shall be permitted to be used if providing equivalent fire resistance and structural properties.

Cross laminated timber roofs shall be not less than 3 inches (76 mm) nominal in thickness and shall be continuous from support to support and mechanically fastened to one another.

~~602.4.4.8 Partitions and walls.~~ Partitions and walls shall comply with Section 602.4.4.8.1 or 602.4.4.8.2.

~~602.4.4.8.1 Interior walls and partitions.~~ Interior walls and partitions shall be of solid wood construction formed by not less than two layers of 1 inch (25 mm) matched boards or laminated construction 4 inches (102 mm) thick, or of 1 hour fire resistance rated construction.

~~602.4.4.8.2 Exterior walls.~~ Exterior walls shall be of one of the following:

1. Noncombustible materials.

2. Not less than 6 inches (152 mm) in thickness and constructed of one of the following:

2.1. Fire retardant treated wood in accordance with Section 2303.2 and complying with Section 602.4.4.1.

2.2. Cross laminated timber complying with Section 602.4.4.2.

~~602.4.4.94.4.3~~ **Exterior structural members.** Where a horizontal separation of 20 feet (6096 mm) or more is provided, wood columns and arches conforming to heavy timber sizes complying with ~~Table 602.4.4~~ [Section 2304.11](#) shall be permitted to be used externally.

WAC 51-50-0706 Section 706—Fire walls. (~~706.1 General.~~ Fire walls shall be constructed in accordance with Sections 706.2 through 706.11. The extent and location of such fire walls shall provide a complete separation. Where a fire wall also separates occupancies that are required to be separated by a fire barrier wall, the most restrictive requirements of each separation shall apply.) **706.6.1 Stepped buildings.** Where a fire wall also serves as an exterior wall for a building and separates buildings having different roof levels, such wall shall terminate at a point not less than 30 inches (762 mm) above the lower roof level. Exterior walls above the fire wall extending more than 30 inches above the lower roof shall be of not less than 1-hour *fire-resistance-rated* construction from both sides with openings protected by fire assemblies having a fire protection rating of not less than 3/4 hour. Portions of the exterior walls exceeding 15 feet above the lower roof shall be permitted to be of *nonfire-resistance-rated* construction unless otherwise required by other provisions of this code.

EXEMPTION: A fire wall serving as part of an exterior wall that separates buildings having different roof levels shall be permitted to terminate at the underside of the roof sheathing, deck or slab of the lower roof, provided items 1, 2, and 3 below are met.

The exterior wall above the fire wall is not required to be of *fire-resistance-rated* construction, unless required by other provisions of this code.

1. [The lower roof assembly within 10 feet \(3048 mm\) of the fire wall has not less than a 1-hour fire-resistance rating.](#)
2. [The entire length and span of supporting elements for the rated roof assembly has a fire-resistance rating of not less than 1-hour.](#)
3. [Openings in the lower roof are not be located within 10 feet \(3048 mm\) of the fire wall.](#)

WAC 51-50-0909 Section 909—Smoke control systems.

909.6.3 Pressurized stairways and elevator hoistways. Where stairways or elevator hoistways are pressurized, such pressurization systems shall comply with the requirements of Section 909.20 of this code [for stair pressurization](#) and 909.21 of the *International Building and Fire Codes* as necessary to determine that the stairway or elevator hoistways ~~shaft~~ meets the pressurization requirements of ~~IBC Section 909.20~~. [Stairway and elevator hoistway pressurization in other than high-rise or underground buildings](#) shall not be construed as a smoke control system as required in other portions of the *International Building Code* or *International Fire Code*. [Stairway pressurization in other than high-rise or underground buildings shall comply with IBC Sections in 909.10, 909.12, 909.13, 909.14, 909.15, 909.17, 909.18, and 909.19 in addition to 909.20.5. Elevator pressurization in other than high-rise or underground buildings shall comply with the following IBC Sections 909.10, 909.12, 909.13, 909.14, 909.15, 909.17, 909.18, and 909.19 in addition to 909.21 and the following IFC Sections 909.21, 909.21.1, 909.21.3, 909.21.4, 909.21.5, 909.21.6, 909.21.7, 909.21.8, 909.21.9, and 909.21.11.](#)

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WAC 51-50-1008 Means of Egress Illumination

Section 1008—~~Reserved. 1008.2.3 Exit discharge.~~

~~Illumination shall be provided along the path of travel for the exit discharge from each exit to the public way.~~

~~Exception: Illumination shall not be required where the path of the exit discharge meets both of the following requirements:~~

~~1. The path of exit discharge is illuminated from the exit to a safe dispersal area complying with Section 1028.5.~~

~~2. A dispersal area shall be illuminated to a level not less than 1 footcandle (11 lux) at the walking surface.~~

WAC 51-50-1107 Section 1107—Dwelling units and sleeping units.

1107.6.2.2.1 Type A units. In Group R-2 Occupancies containing more than 10 dwelling units or sleeping units, at least 5 percent, but not less than one, of the units shall be a Type A unit. All units on a site shall be considered to determine the total number of units and the required number of Type A units. Type A units shall be dispersed among the various classes of units, as described in Section 1107.6. Bedrooms in monasteries and convents shall be counted as *sleeping units* for the purpose of determining the number of units. Where the *sleeping units* are grouped into suites, only one *sleeping unit* in each suite shall count towards the number of required *Type A units*.

EXCEPTIONS: 1. The number of Type A units is permitted to be reduced in accordance with Section 1107.7.

~~2. Existing structures on a site shall not contribute to the total number of units on a site.~~

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WAC 51-50-1604 Section 1604—General design requirements.

Table 1604.5 Risk Category of Buildings and Other Structures

RISK CATEGORY	NATURE OF OCCUPANCY
I	Buildings and other structures that represent a low hazard to human life in the event of failure including, but not limited to: <ul style="list-style-type: none">• Agricultural facilities.• Certain temporary facilities.• Minor storage facilities.
II	Buildings and other structures except those listed in Risk Categories I, III, and IV.
III	Buildings and other structures that represent a substantial hazard to human life in the event of failure including, but not limited to: <ul style="list-style-type: none">• Buildings and other structures whose primary occupancy is public assembly with an occupant load greater than 300.

RISK CATEGORY	NATURE OF OCCUPANCY
	<ul style="list-style-type: none"> • Buildings and other structures containing Group E or Group I-4 occupancies with an occupant load greater than 250. • Buildings and other structures containing educational occupancies for students above the 12th grade with an occupant load greater than 500. • Group I-2 occupancies with an occupant load of 50 or more resident care recipients but not having surgery or emergency treatment facilities. • Group I-3 occupancies. • Any other occupancy with an occupant load greater than 5,000.^a • Power-generating stations, water treatment facilities for potable water, wastewater treatment facilities and other public utility facilities not included in Risk Category IV. • Buildings and other structures not included in Risk Category IV containing quantities of toxic or explosive materials that: <ul style="list-style-type: none"> Exceed maximum allowable quantities per control area as given in Table 307.1(1) or 307.1(2) or per outdoor control area in accordance with the <i>International Fire Code</i>; and Are sufficient to pose a threat to the public if released.^b
IV	<p>Buildings and other structures designated as essential facilities including, but not limited to:</p> <ul style="list-style-type: none"> • Group I-2 occupancies having surgery or emergency treatment facilities. • <u>Structures that house or support private emergency power generation, medical gas systems, HVAC systems or related</u>

RISK CATEGORY	NATURE OF OCCUPANCY
	<p data-bbox="613 365 1000 474"><u>infrastructure systems that support Group 1-2, Condition 2 or ambulatory care facilities having emergency surgery or emergency treatment facilities.</u></p> <ul style="list-style-type: none"> <li data-bbox="613 508 1000 562">• Fire, rescue, ambulance and police stations, and emergency vehicle garages. <li data-bbox="613 596 1000 651">• Designated earthquake, hurricane, or other emergency shelters. <li data-bbox="613 684 1000 793">• Designated emergency preparedness, communications and operations centers, and other facilities required for emergency response. <li data-bbox="613 827 1000 936">• Power-generating stations and other public utility facilities required as emergency backup facilities for Risk Category IV structures. <li data-bbox="613 970 1000 1306">• Buildings and other structures containing quantities of highly toxic materials that: <ul style="list-style-type: none"> <li data-bbox="639 1079 1000 1222">Exceed maximum allowable quantities per control area as given in Table 307.1(2) or per outdoor control area in accordance with the <i>International Fire Code</i>; and <li data-bbox="639 1255 1000 1306">Are sufficient to pose a threat to the public if released.^b <li data-bbox="613 1339 1000 1423">• Aviation control towers, air traffic control centers, and emergency aircraft hangars. <li data-bbox="613 1457 1000 1512">• Buildings and other structures having critical national defense functions. <li data-bbox="613 1545 1000 1629">• Water storage facilities and pump structures required to maintain water pressure for fire suppression.

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^a For purposes of occupant load calculation, occupancies required by Table 1004.1.2 to use gross floor area calculations shall be permitted to use net floor areas to determine the total occupant load.

^b Where approved by the building official, the classification of buildings and other structures as Risk Category III or IV based on their quantities

RISK CATEGORY	NATURE OF OCCUPANCY
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of toxic, highly toxic or explosive materials is permitted to be reduced to Risk Category II, provided it can be demonstrated by a hazard assessment in accordance with Section 1.5.3 of ASCE 7 that a release of the toxic, highly toxic or explosive materials is not sufficient to pose a threat to the public.

WAC 51-50-1613 Section 1613.4—Earthquake loads.

1613.4.1.ASCE 7 section 12.2.5.4. Amend ASCE 7 Section 12.2.5.4 to read as follows:

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12.2.5.4 Increased structural height limit for steel eccentrically braced frames, steel special concentrically braced frames, steel buckling-restrained braced frames, steel special plate shear walls, and special reinforced concrete shear walls. The limits on height, h_n , in Table 12.2-1 are permitted to be increased from 160 ft (50 m) to 240 ft (75 m) for structures assigned to Seismic Design Categories D or E and from 100 ft (30 m) to 160 ft (50 m) for structures assigned to Seismic Design Category F, provided that the seismic force-resisting systems are limited to steel eccentrically braced frames, steel special concentrically braced frames, steel buckling-restrained braced frames, steel special plate shear walls, or special reinforced concrete cast-in-place shear walls and all of the following requirements are met:

1. The structure shall not have an extreme torsional irregularity as defined in Table 12.3-1 (horizontal structural irregularity Type 1b).

2. The steel eccentrically braced frames, steel special concentrically braced frames, steel buckling-restrained braced frames, steel special plate shear walls or special reinforced concrete shear walls in any one plane shall resist no more than 60 percent of the total seismic forces in each direction, neglecting accidental torsional effects.

3. Where floor and roof diaphragms transfer forces from the vertical seismic force-resisting elements above the diaphragm to other vertical force-resisting elements below the diaphragm, these in-plane transfer forces shall be amplified by the overstrength factor, Ω_o for the design of the diaphragm flexure, shear, and collectors.

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34. The earthquake force demands in foundation mat slabs, grade beams, and pile caps supporting braced frames and/or walls arranged to form a shear-resisting core shall be amplified by 2

for shear and 1.5 for flexure. The redundancy factor, ρ , applies and shall be the same as that used for the structure in accordance with Section 12.3.4.

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4.5 The earthquake shear force demands in special reinforced concrete shear walls shall be amplified by the over-strength factor, Ω_o .

1613.4.2 ASCE 7 Section 12.6. Amend ASCE 7 Section 12.6 and Table 12.6-1 to read as follows:

12.6 ANALYSIS PROCEDURE SELECTION

12.6.1 Analysis Procedure. The structural analysis required by Chapter 12 shall consist of one of the types permitted in Table 12.6-1, based on the structure’s Seismic Design Category, structural system, dynamic properties, and regularity, or with the approval of the authority having jurisdiction, an alternative generally accepted procedure is permitted to be used. The analysis procedure selected shall be completed in accordance with the requirements of the corresponding section referenced in Table 12.6-1.

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Table 12.6-1

Permitted Analytical Procedures

<u>Seismic Design Category</u>	<u>Structural Characteristics</u>	<u>Equivalent Lateral Force Procedure, Section 12.8^a</u>	<u>Modal Response Spectrum Analysis, Section 12.9.1, or Linear Response History Analysis, Section 12.9.2^a</u>	<u>Linear Seismic Response History Procedures, Chapter 16^a</u>	<u>Nonlinear Seismic Response History Procedures, Chapter 16^{b,16^a}</u>
<u>B, C</u>	<u>All structures</u>	<u>P</u>	<u>P</u>	<u>P</u>	<u>P</u>
<u>D, E, F</u>	<u>Risk Category I or II buildings not exceeding two stories above the base</u>	<u>P</u>	<u>P</u>	<u>P</u>	<u>P</u>

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<u>Seismic Design Category</u>	<u>Structural Characteristics</u>	<u>Equivalent Lateral Force Procedure, Section 12.8^a</u>	<u>Modal Response Spectrum Analysis, Section 12.9.1, or Linear Response History Analysis, Section 12.9.2</u> ^a	<u>Linear Seismic Response History Procedures, Chapter 16^a</u>	<u>Nonlinear Seismic Response History Procedures, Chapter 16^{b,16^a}</u>
	Structures of light frame construction	P	P	P	P
	Structures with no structural irregularities and not exceeding 160 ft in structural height	P	P	P	P
	Structures exceeding 160 ft in structural height with no structural irregularities and with $T < 3.5T_s$	P	P	P	P
	Structures not exceeding 160 ft in structural height and having only horizontal irregularities of Type 2, 3, 4, or 5 in Table 12.3-1 or vertical irregularities of Type 4, 5a, or 5b in Table 12.3-2	P	P	P	P
	All other structures \leq 240 ft in height	NP	P	P	P
	All structures $>$ 240 ft in height	NP	NP	NP	P ^e

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^a P: Permitted; NP: Not Permitted; $T_s = S_{D1}/S_{D5}$.

^b When nonlinear response history procedure is used, one of the linear procedures shall also be performed.

* Refer to Section 12.6.2 for additional requirements.

1613.5.4 Nonlinear response history procedure for buildings in excess of 240 ft (75 m) in height.

Modify ASCE 7 Section 12.6.2 as follows:

In addition to any of the linear analysis procedures in Table 12.6-1, a nonlinear dynamic analysis in accordance with ASCE 7 Chapter 16 shall be performed, except that analysis shall be conducted for MCER ground motions. Acceptance criteria shall be compatible with providing not greater than a 10 percent, 5 percent or 2.5 percent risk of collapse for Risk Category II, III and IV structures, respectively. In addition, proportioning of the seismic force resisting system shall incorporate a capacity based approach that identifies the mechanism of nonlinear lateral displacement of the structure, those structural actions expected to yield, and those intended to remain elastic. Design shall be subject to an approved independent structural design review.

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WAC 51-50-1705 Section 1705—Required special inspections and tests.

1705.5.3 Mass timber construction. Special inspections of mass timber elements in Types IV-A, IV-B and IV-C construction in buildings, structures, or portions thereof greater than 85 feet above grade plane

shall be in accordance with Table 1705.5.3.

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Table 1705.5.3

Required Special Inspections of Mass Timber

Construction

Type	Continuous Special Inspection	Periodic Special Inspection
1. Inspection of anchorage and connections of mass timber construction to timber deep foundation systems.		X
2. Inspect erection and sequence of mass timber construction.		X

Type	Continuous Special Inspection	Periodic Special Inspection
3. Inspection of connections where installation methods are required to meet design loads.		
a 3.1. Threaded fasteners.		
3.1.1. Verify use of proper installation equipment.		X
3.1.2. Verify use of predrilled holes where required.		X
3.1.3. Inspect screws, including diameter, length, head type, spacing, installation angle, and depth.		X
b 3.2. Adhesive anchors installed in horizontal or upwardly inclined orientation to resist sustained tension loads.	X	
3.3. Adhesive anchors not defined in 3.2		X
e 3.4. Bolted connections.		X
d 3.5. Other proprietary concealed-Concealed connection.		X

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1705.12.6 Plumbing, mechanical and electrical components. Periodic special inspection of plumbing, mechanical and electrical components shall be required for the following:

6. Installation of mechanical and electrical equipment, including ductwork, piping systems and their structural supports, where automatic fire sprinkler systems are installed in ~~risk~~Risk Category IV structures assigned to Seismic Design Category C, D, E or F to verify one of the following:

WAC 51-50-11090 Section 1109—Other features and facilities.

1109.5.1 Minimum number. Not fewer than two drinking fountains shall be provided. One drinking fountain shall comply with the requirements for people who use a wheelchair and one drinking fountain shall comply with the requirements for standing persons.

- EXCEPTIONS:
1. A single drinking fountain with two separate spouts that complies with the requirements for people who use a wheelchair and standing persons shall be permitted to be substituted for two separate drinking fountains.
 2. Where drinking fountains are primarily for children's use, drinking fountains for people using wheelchairs shall be permitted to comply with the children's provisions in ICC A117.1 and drinking fountains for standing children shall be permitted to provide the spout at 30 inches (762 mm) minimum above the floor.
 3. In all occupancies that require more than two drinking fountains per floor or secured area, bottle filling stations shall be allowed to be substituted in accordance with Section 2902.5.4

NEW SECTION

WAC 51-50-2304 General construction requirements

2304.10 Connectors and fasteners. Connectors and fasteners shall comply with the applicable provisions of Sections 2304.10.1 through 2304.10.78.

2304.10.8 Connection fire resistance rating. Fire resistance ratings for connections in Type IV-A, IV-B, or IV-C construction shall be determined by one of the following:

1. Testing in accordance with Section 703.2 where the connection is part of the fire resistance test.
2. Engineering analysis that demonstrates that the temperature rise at any portion of the connection is limited to an average temperature rise of 250°F (139°C), and a maximum temperature rise of 325°F (181°C), for a time corresponding to the required fire resistance rating of the structural element being connected. For the purposes of this analysis, the connection includes connectors, fasteners, and portions of wood members included in the structural design of the connection.

WAC 51-50-2900 Chapter 29—Plumbing systems.

2902.1.2-4 Family or assisted-use toilet and bath fixtures. Fixtures located within family or assisted-use toilet and bathing rooms required by Section 1109.2.1 are permitted to be included in the number of required fixtures for either the male or female occupants in assembly and mercantile occupancies.

WAC 51-50-3500 Chapter 35—Referenced standards. Add the reference standards as follows:

Standard reference number	Title	Referenced in code section number
ANSI/APA PRG-320-18	Standard for Performance-Rated Cross-Laminated	602.4, 2303.1.4

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Standard reference number	Title	Referenced in code section number
	Timber (revised 2018)	
NFPA 130- 2017	Standard for Fixed Guideway Transit and Passenger Rail Systems	3101.1, ((3112)) <u>3114</u>

Note to SBCC Staff: OTS reissued OTS-1327. Use the most recent when filing the CR-103