State of Oregon
Building Codes Division
Better Buildings for Oregon

2014 Oregon Structural Specialty Code
New Oregon Amendments

This document outlines all new Oregon Amendments adopted during the code promulgation process for the 2014 Oregon Structural Specialty Code (OSSC), based on the 2012 International Building Code (IBC). This document may be useful for those seeking a synopsis of only the new Oregon Amendments.

CHAPTER 1
ADMINISTRATION

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SECTION 202
DEFINITIONS

BRACED WALL LINE. A series of braced wall panels in a single story that meets the requirements of Section **2308.6.1** ~~2308.3 or 2308.12.4~~. **A straight line through the building plan that represents the location of the lateral resistance provided by the wall bracing.**

BRACED WALL PANEL. A section of wall braced in accordance with Section 2308.6.2 ~~2308.9.3 or 2308.12.4~~. **A full-height section of wall constructed to resist in-plane shear loads through interaction of framing members, sheathing material and anchors. The panel's length meets the requirements of its particular bracing method, and contributes toward the total amount of bracing required along its braced wall line.**

DESIGN FLOOD. The flood associated with **an area designated as a flood hazard area by the Flood Plain Administrator** ~~the greater of the following two areas:~~
~~1. Area with a flood plain subject to a 1 percent or greater chance of flooding in any year; or~~
~~2. Area designated as a flood hazard area on a community's flood hazard map, or otherwise legally designated.~~

DESIGN FLOOD ELEVATION. The elevation of the "*design flood*," including wave height, relative to the datum specified on the community's legally designated flood hazard map. ~~In areas designated as Zone AO, the *design flood elevation* shall be the elevation of the highest existing grade of the *building's* perimeter plus the depth number (in feet) specified on the flood hazard map. In areas designated as Zone AO where a depth number is not specified on the map, the depth number shall be taken as being equal to 2 feet (610 mm).~~

DIAPHRAGM. A horizontal or sloped system acting to transmit lateral forces to the vertical-resisting elements. When the term "diaphragm" is used, it shall include horizontal bracing systems.

~~**Diaphragm flexible.** A diaphragm is flexible for the purpose of distribution of story shear and torsional moment where so indicated in Section 12.3.1 of ASCE 7.~~

~~**Diaphragm, rigid.** A diaphragm is rigid for the purpose of distribution of story shear and torsional moment when the lateral deformation of the diaphragm is less than or equal to two times the average story drift.~~

FIRE CODE. For the purpose of the *Oregon Structural Specialty Code*, fire code shall mean **those portions of** the *Oregon Fire Code* ~~(OFC) as adopted by OAR 837-040-0010.~~ **which include construction, reconstruction, alteration, repair or installation of materials and equipment that is covered by the *State Building Code*.**

FLOOD HAZARD AREA. The area designated as a flood hazard area by the Flood Plain Administrator. ~~The greater of the following two areas:~~

~~1. The area within a flood plain subject to a 1 percent or greater chance of flooding in any year.~~

~~2. The area designated as a flood hazard area on a community's flood hazard map, or otherwise legally designated.~~

FLOOD HAZARD AREA SUBJECT TO HIGH-VELOCITY WAVE ACTION. Area within the flood hazard area that is subject to high-velocity wave action, **as determined by the Flood Plain Administrator.** ~~and shown on a Flood Insurance Rate Map (FIRM) or other flood hazard map as Zone V, VO, VE or V1-30.~~

SPECIAL FLOOD HAZARD AREA. The land area subject to flood hazards and shown on a Flood Insurance Rate Map or other flood hazard map **as established by the Flood Plain Administrator** ~~Zone A, AE, A1-30, A99, AR, AO, AH, V, VO, VE or V1-30~~.

STATE BUILDING CODE. The combined specialty codes adopted pursuant to ORS 455 and any code regulation or requirement in effect at the time of construction – regardless of when the building or structure was built.

SUBSTANTIAL IMPROVEMENT. Any *repair*, reconstruction, rehabilitation, *addition* or improvement of a building or structure, the cost of which equals or exceeds 50 percent of the market value of the structure before the improvement or *repair* is started ~~as determined by the local governing authority~~. If the structure has sustained *substantial damage*, any repairs are considered substantial improvement regardless of the actual *repair* work performed. **The Flood Plain Administrator shall make all final determinations in the application of this definition.** The term does not, however, include either:

1. Any project for improvement of a building required to correct existing health, sanitary or safety code violations identified by the *building official* and that are the minimum necessary to assure safe living conditions.
2. Any alteration of a historic structure provided that the alteration will not preclude the structure's continued designation as a historic structure.

CHAPTER 3
USE AND OCCUPANCY CLASSIFICATION

308.3 Institutional Group I-1. This occupancy shall include buildings, structures or portions thereof for more than 16 persons**, excluding staff,** who reside on a 24 hour basis in a supervised environment and receive *custodial car*. ~~the persons receiving care are capable of self preservation.~~ **Buildings of Group l-1 shall be classified as one of the occupancy conditions indicated in Sections 308.3.1 or 308.3.2.** ~~This group shall include, but not be limited to, the following:~~

~~Alcohol and drug centers~~
~~Assisted living facilities~~
~~Congregate care facilities~~
~~Convalescent facilities~~
~~Group homes~~
~~Halfway houses~~
~~Residential board and custodial care facilities~~
~~Social rehabilitation facilities~~

~~**308.3.1 Five or fewer persons receiving care.**~~
~~A facility such as the above with five or fewer persons receiving such care shall be classified as Group R-3 or shall comply with the *International Residential Code* provided an *automatic sprinkler system* is installed in accordance with Section 903.3.1.3 or with Section P2904 of the *International Residential Code*.~~

308.3.1 Condition 1. This occupancy condition shall include buildings in which all persons receiving custodial care who, without any assistance, are capable of responding to an emergency situation to complete building evacuation. This group shall include, but not be limited to, the following:

Congregate living facilities
Halfway houses
Social rehabilitation facilities

~~**308.3.2 Six to sixteen persons receiving care.**~~
~~A facility such as above, housing not fewer than six and not more than 16 persons receiving such care, shall be classified as Group R-4.~~

308.3.2 Condition 2. This occupancy condition shall include buildings subject to licensure by the Oregon Department of Human Services in which there are any persons receiving custodial care who require limited verbal or physical assistance while responding to an emergency situation to complete building evacuation. This group shall include, but not be limited to, the following:

Alcohol and drug centers
Assisted living facilities with or without a Memory Care Endorsement
Residential care facilities with or without a Memory Care Endorsement
Residential treatment facilities
Group homes and facilities

~~308.3.2~~ **308.3.3** Six to sixteen persons receiving **custodial care.** A facility ~~such as above~~, housing not fewer than six and not more than 16 persons receiving ~~such~~ **custodial** care, shall be classified as Group R-4.

~~308.3.1~~ **308.3.4** Five or fewer persons receiving **custodial care**. A facility ~~such as the above~~ **with five or fewer persons receiving** ~~such~~ **custodial** care, shall be classified as Group R-3 or shall comply with the ~~International Residential Code~~ ***Residential Code*** provided an *automatic sprinkler system* is installed in accordance with Section 903.3.1.3. ~~or with Section P2904 of the International Residential Code.~~ **or with Appendix T of the *Residential Code.***

308.4 Institutional Group I-2. This occupancy shall include buildings and structures used for *medical care* on a 24-hour basis for more than five persons who are *incapable of self preservation.* This group shall include, but not be limited to, the following:

Foster care facilities
Detoxification facilities
Hospitals
Nursing homes
Psychiatric hospitals

308.4.1 Five or fewer persons receiving **medical** care. A facility ~~such as the above~~ with five or fewer persons receiving ~~such~~ **medical** care shall be classified as Group R-3 or shall comply with the ~~International Residential Code~~ ***Residential Code*** provided an automatic sprinkler system is installed in accordance with Section 903.3.1.3. ~~or with Section P2904 of the International Residential Code.~~ **or with Appendix T of the *Residential Code*.**

308.6.5 Family Childcare Homes. Family Child Care Homes (located in a private residence) as defined in Section 202 shall be classified as a Group R-3 or shall comply with the Residential Code in accordance with Section 101.2.

310.5.1 Care facilities within a dwelling. Care facilities for five or fewer persons receiving care that are within a single-family dwelling are permitted to comply with the ~~*International Residential Code*~~ ***Residential Code*** provided an automatic sprinkler system is installed in accordance with Section 903.3.1.3. ~~*or with section P2904 of the International Residential Code.*~~ **or with Appendix T of the *Residential Code.***

310.6 Residential Group R-4. This occupancy shall include buildings, structures or portions thereof for more than five but not more than 16 persons, excluding staff, who reside on a 24-hour basis in a supervised residential environment and receive *custodial care.* ~~The persons receiving care are capable of self preservation.~~ **Buildings of Group R-4 shall be classified as one of the occupancy conditions indicated in Sections 310.6.1 or 310.6.2 .** ~~This group shall include, but not be limited to, the following:~~

~~Alcohol and drug centers~~
~~Assisted living facilities~~
~~Congregate care facilities~~
~~Convalescent facilities~~
~~Group homes~~
~~Halfway houses~~
~~Residential board and custodial care facilities Social rehabilitation facilities~~

Group R-4 occupancies shall meet the requirements for construction as defined for Group R-3, except as otherwise provided for in this code.

310.6.1 Condition 1. This occupancy condition shall include buildings in which all persons receiving custodial care, who without any assistance, are capable of responding to an emergency situation to complete building evacuation. This group shall include, but not be limited to, the following:

Congregate living facilities
Halfway houses
Social rehabilitation facilities

310.6.2 Condition 2. This occupancy condition shall include buildings subject to licensure by the Oregon Department of Human Services in which there are any persons receiving custodial care who require limited verbal or physical assistance while responding to an emergency situation to complete building evacuation. This group shall include, but not be limited to, the following:

Alcohol and drug centers
Assisted living facilities with or without a Memory Care Endorsement

Residential care facilities with or without a Memory Care Endorsement
Residential treatment facilities
Group homes and facilities

412.4.6 Fire suppression.
Aircraft hangars shall be provided with a fire suppression system designed in accordance with NFPA 409, based upon the classification for the hangar given in Table 412.4.6.

Exceptions:

1. Where a *fixed base operator* has separate repair facilities on site, Group II hangars operated by a *fixed base operator* used for storage of *transient aircraft* only shall have a fire suppression system, but the system is exempt from foam requirements.

2. Aircraft Hangars that have an aircraft access door height less than 28 feet (8534mm), and do not have provisions for housing aircraft with a tail height over 28 feet (8534 mm), are exempt from foam requirements provided the building complies with all of the following criteria:

2.1. The building is surrounded and adjoined by public ways or yards not less than 60 feet (18 288 mm) in width.

2.2. The building is provided with an automatic sprinkler system throughout with a design density of 0.25 gal/min.(0.016L/s).

2.3. The total fuel capacity of all aircraft located within a single fire area does not exceed 5,000 gallons (18,927 L).

2.4. No single fire area exceeds 65,000 square feet (3716 m2).

2.5. The gross building area does not exceed 75,000 square feet (4288 m2).

420.1 General. Occupancies in Groups I-1, R-1, R-2, ~~and~~ R-3 **and R-4** shall comply with the provisions of Sections 420.1 through ~~420.5~~ **420.6** and other applicable provisions of this code.

420.4 Smoke barriers in Group I-1 Condition 2. Smoke barriers shall be provided in Group I-1 Condition 2 to subdivide every story used by persons receiving care, treatment or sleeping and to provide other stories with an occupant load of 50 or more persons, into no fewer than two smoke compartments. Such stories shall be divided into smoke compartments with an area of not more than 22,500 square feet (2092 m^2) and the travel distance from any point in a smoke compartment to a smoke barrier door shall not exceed 200 feet (60 960 mm). The smoke barrier shall be in accordance with Section 709.

420.4.1 Refuge area. Refuge areas shall be provided within each smoke compartment. The size of the refuge area shall accommodate the occupants and care recipients from the adjoining smoke compartment. Where a smoke compartment is adjoined by two or more smoke compartments, the minimum area of the refuge area shall accommodate the largest occupant load of the adjoining compartments. The size of the refuge area shall provide the following:

1. Not less than 15 net square feet (1.4 m^2) for each care recipient.

2. Not less than 6 net square feet (0.56 m^2) for other occupants.

Areas or spaces permitted to be included in the calculation of the refuge area are corridors, lounge or dining areas and other low hazard areas.

CHAPTER 5
GENERAL BUILDING HEIGHTS AND AREAS

[F] 501.2 Address identification.
New and existing buildings shall be provided with *approved* address numbers or letters. Each character shall be not less than 4 inches (102 mm) in height and not less than 0.5 inch (12.7 mm) in width. They shall be installed on a contrasting background and be plainly visible from the street or road fronting the property. When required by the fire code official, address numbers shall be provided in additional *approved* locations to facilitate emergency response. Where access is by means of a private road and the building address cannot be viewed from the *public way*, a monument, pole or other *approved* sign or means shall be used to identify the structure. ~~Address numbers shall be maintained.~~

TABLE 503—continued
ALLOWABLE BUILDING HEIGHTS AND AREAS[a, b]

GROUP		TYPE OF CONSTRUCTION								
		TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V	
		A	B	A	B	A	B	HT	A	B
	HEIGHT (feet)	UL	160	65	55	65	55	65	50	40
	STORIES(S) AREA (A)									
M	S	UL	11	4	2	4	2	4	3	1
	A	UL	UL	21,500	12,500	18,500	12,500	20,500	14,000	9,000
R-1	S	UL	11	4	4	4	4	4	3	2
	A	UL	UL	24,000	16,000	24,000	16,000	20,500	12,000	7,000
R-2	S	UL	11	4	4	4	4	4	3	2
	A	UL	UL	24,000	16,000	24,000	16,000	20,500	12,000	7,000
R-3	S	UL	11	4	4	4	4	4	3	3
	A	UL	UL	UL	UL	UL	UL	UL	UL	UL
R-4	S	UL	11	4	4	4	4	4	3	2
	A	UL	UL	24,000	16,000	24,000	16,000	20,500	12,000	7,000
S-1	S	UL	11	4	2	3	2	4	3	1
	A	UL	48,000	26,000	17,500	26,000	17,500	25,500	14,000	9,000
S-2**, S-3**	S	UL	11	5	3	4	3	5	4	2
	A	UL	79,000	39,000	26,000	39,000	26,000	38,500	21,000	13,500
U	S	UL	5	4	2	3	2	4	2	1
	A	UL	35,500	19,000	8,500	14,000	8,500	18,000	9,000	5,500

504.2 Automatic sprinkler system increase. Where a building is equipped throughout with an *approved automatic sprinkler system* in accordance with Section 903.3.1.1, the value specified in Table 503 for maximum *building height* is increased by 20 feet (6096 mm) and the maximum number of *stories* is increased by one. These increases are permitted in addition to the *building area* increase in accordance with Sections 506.2 and 5063. For Group R buildings equipped throughout with an *approved automatic sprinkler system* in accordance with Section 903.3.1.2, the value specified in Table 503 for maximum *building height* is increased by 20 feet (6096 mm) and the maximum number of *stories* is increased by one, but shall not exceed 60 feet (18 288 mm) or four *stories*, respectively.

Exception: The use of an *automatic sprinkler system* to increase *building heights* shall not be permitted for the following conditions:

1. Buildings, or portions of buildings, classified as a **Group I-1 Condition 2, of Type IIB, III, IV or V construction or** Group I-2 ~~occupancy~~ **occupancies** of Type IIB, III, IV or V construction.
2. Buildings, or portions of buildings, classified as a Group H-1, H-2, H-3 or H-5 occupancy.
3. Buildings where an automatic sprinkler system is substituted for fire-resistance rated construction in accordance with Table 601, Note d.

TABLE 508.4
REQUIRED SEPARATION OF OCCUPANCIES (HOURS)

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

CHAPTER 6
TYPES OF CONSTRUCTION

TABLE 601
FIRE-RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS (HOURS)

BUILDING ELEMENT	TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V	
	A	B	A[d]	B	A[d]	B	HT	A[d]	B
Primary structural frame[g (see Section 202)]	3[a]	2[a]	1	0	1	0	HT	1	0
Bearing walls									
Exterior[f,g]	3	2	1	0	2	2	2	1	0
Interior	3[a]	2[a]	1	0	1	0	1/HT	1	0
Nonbearing walls and partitions Exterior	See Table 602								
Nonbearing walls and partitions Interior[e]	0	0	0	0	0	0	See Section 602.4.6	0	0
Floor construction and associated secondary members (see Section 202)	2	2	1	0	1	0	HT	1	0
Roof construction and associated secondary members (see Section 202)	1 1/2[b]	1[b, c]	1[b, c]	0[c]	1[b, c]	0	HT	1[b, c]	0

For SI: 1 foot = 304.8 mm.

a. Roof supports: Fire-resistance ratings of primary structural frame and bearing walls are permitted to be reduced by 1 hour where supporting a roof only. **This reduction is not applicable to roofs supporting rooftop structures governed by Section 1509, roof gardens and landscaped roofs.**

b. Except in Group F-1, H, M and S-1 occupancies, fire protection of structural members shall not be required, including protection of roof framing and decking where every part of the roof construction is 20 feet or more above any floor immediately below. Fire-retardant-treated wood members shall be allowed to be used for such unprotected members.

c. In all occupancies, heavy timber shall be allowed where a 1-hour or less fire-resistance rating is required.

d. An approved automatic sprinkler system in accordance with Section 903.3.1.1 shall be allowed to be substituted for 1-hour fire-resistance-rated construction, provided such system is not otherwise required by other provisions of the code or used for an allowable area increase in accordance with Section 506.3 or an allowable height increase in accordance with Section 504.2. The 1-hour substitution for the fire resistance of exterior walls shall not be permitted.

e. Not less than the fire-resistance rating required by other sections of this code.

f. Not less than the fire-resistance rating based on fire separation distance (see Table 602).

g. Not less than the fire-resistance rating as referenced in Section 704.10.

TABLE 602
FIRE-RESISTANCE RATING REQUIREMENTS FOR EXTERIOR WALLS BASED ON FIRE SEPARATION DISTANCE[a, e, h]

FIRE SEPARATION DISTANCE = X (feet)	TYPE OF CONSTRUCTION	OCCUPANCY GROUP H[f]	OCCUPANCY GROUP F-1, M, S-1[g]	OCCUPANCY GROUP A, B, E, F-2, I, R, S-2, S-3[g], U[b]
X < 5[c]	All	3	2	1
5 < X < 10	IA	3	2	1
	Others	2	1	1
10< X < 30	IA, IB	2	1	1[d]
	IIB, VB	1	0	0
	Others	1	1	1[d]
X<30	All	0	0	0

CHAPTER 7
FIRE AND SMOKE PROTECTION FEATURES

TABLE 705.2
MINIMUM DISTANCE OF PROJECTION

FIRE SEPARATION DISTANCE (FSD)	MINIMUM DISTANCE FROM LINE USED TO DETERMINE FSD
0 feet to ~~less than~~ 2 feet	Projections not permitted
Greater than 2 feet to ~~less than 5~~ 3 feet	24 inches
~~5 feet or~~ Greater **than 3 feet to less than 30 feet**	~~40 inches~~ **24" plus 8" for every foot of FSD beyond 3' or fraction thereof.**
30 feet or greater	**20 feet**

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

705.2.3 Combustible projections.
Combustible projections extending to within 5 feet (1524 mm) of the line used to determine the *fire separation distance*, ~~or located where openings are not permitted, or where protection of some openings is required~~ shall be of at least 1-hour fire-resistance-rated construction, Type IV construction, fire-retardant-treated wood or as required by Section 1406.3.

Exception: Type VB construction shall be allowed for combustible projections in Group R-3 and U occupancies with a fire separation distance greater than or equal to 5 feet (1524 mm).

709.5 Openings. Openings in a *smoke barrier* shall be protected in accordance with Section 716.

Exceptions:

1. In **Group I-1 Condition 2,** Group I-2 and ambulatory care facilities, where doors are installed across corridors, a pair of opposite- swinging doors without a center mullion shall be installed having vision panels with fire-protection- rated glazing materials in fire-protection-rated frames, the area of which shall not exceed that tested. The doors shall be close fitting within operational tolerances, and shall not have undercuts in excess of 3/4-inch, louvers or grilles. The doors shall have head and jamb stops, astragals or rabbets at meeting edges and shall be automatic-closing by smoke detection in accordance with Section 716.5.9.3. Where permitted by the door manufacturer's listing, positive-latching devices are not required.
2. In **Group I-1 Condition 2,** Group I-2 and ambulatory care facilities, horizontal sliding doors installed in accordance with Section 1008.1.4.3 and protected in accordance with Section 716.

CHAPTER 8
INTERIOR FINISHES

801.5 Applicability. For buildings in flood hazard areas as established **by the Flood Plain Administrator** ~~in Section 1612.3~~, interior finishes, trim and decorative materials below the elevation required by Section 1612 shall be flood-damage-resistant materials.

CHAPTER 9
FIRE PROTECTION SYSTEMS

901.1 Scope. The provisions of this chapter shall specify where *fire protection systems* are required and shall apply to the design, installation, **repair** and operation of *fire protection systems*. Fire department access, fire-fighting water supply and fire hydrants ~~shall be according to the Fire Code.~~ **are not part of the *State Building Code*.**

Any fire protection system or portion thereof not required by this code shall be permitted to be installed for partial or complete protection provided that such system meets the requirements of the *State Building Code*.

901.1.2 Fire protection system shop drawings. Shop drawings, plans, specifications or sketches for the fire protection system(s) shall be submitted to the building official pursuant to the requirements of the *State Building Code* and ORS Chapter 455 or ORS 479.155 to determine compliance with the *State Building Code*, including but not limited to fire and life-safety standards which are part of the *State Building Code*. Shop drawings, plans, specifications or sketches shall be *approved* prior to the start of system installation and shall contain all information as required by the referenced installation standards in Chapter 9.

901.2 Fire protection systems. *Fire protection systems* shall be installed, repaired **and** operated ~~and maintained~~ in accordance with this code **including those areas under the *State Building Code* which are printed for convenience in** the *Fire Code.*

~~Any *fire protection system* for which an exception or reduction to the provisions of this code has been granted shall be considered to be a required system.~~

~~**Exception:** Any *fire protection system* or portion thereof not required by this code shall be permitted to be installed for partial or complete protection provided that such system meets the requirements of this code.~~

903.2.6 Group I. An automatic sprinkler system shall be provided throughout buildings with a Group I fire area.

Exceptions:

1. An automatic sprinkler system installed in accordance with Section 903.3.1.2 shall be permitted in Group I-1 **Condition 1** facilities.

   ~~2. An automatic sprinkler system installed in accordance with Section 903.3.1.3 shall be allowed in Group I-1 facilities when in compliance with all of the following:~~

   ~~2.1. A hydraulic design information sign is located on the system riser~~

   ~~2.2. Exception 1 of Section 903.4 is not applied, and~~

   ~~2.3. Systems shall be maintained in accordance with the requirements of Section 903.3.1.2.~~

2 ~~3.~~ An automatic sprinkler system is not required where **Group I-4** day care facilities are at the level of exit discharge and where every room where care is provided has at least one exterior exit door.

3 ~~4.~~ In buildings where Group I-4 day care is provided on levels other than the level of exit discharge, an automatic sprinkler system in accordance with 903.3.1.1 shall be installed on the entire floor where care is provided and all floors between the level of care and the level of exit discharge, all floors below the level of exit discharge, other than areas classified as an open parking garage.

903.2.7 Group M. An *automatic sprinkler system* shall be provided throughout buildings containing a Group M occupancy where one of the following conditions exists:

1. A Group M *fire area* exceeds 12,000 square feet (1115m^2).
2. A Group M *fire area* is located more than three stories above *grade plane.*
3. The combined area of all Group M *fire areas* on all floors, including any mezzanines, exceeds 24,000 square feet (2230 m^2).

~~4. A Group M occupancy used for the display and sale of upholstered furniture or mattresses exceeds 5,000 square feet (464 m^2)~~

903.2.7.2 Display and sale of upholstered furniture or mattresses. An automatic sprinkler system shall be provided throughout the fire area of a Group M occupancy used for the display and sale of upholstered furniture or mattresses with an aggregate display area exceeding 5,000 square feet (464 m^2).

903.2.8 Group R. An *automatic sprinkler system* installed in accordance with Section 903.3 shall be provided throughout all buildings with a Group R *fire area*. **For distance requirements to access roads and fire hydrants, see the *Fire Code*.**

903.2.8.1 Group R-3 ~~or R-4 congregate residence~~. An automatic sprinkler system installed in accordance with 903.3.1.3 shall be permitted in Group R-3.~~ or R-4 congregate residence with 16 or fewer residents.~~

903.2.8.2 Group R-4 Condition 1. An automatic sprinkler system installed in accordance with 903.3.1.3 shall be permitted in Group R-4 Condition 1.

903.2.8.3 Group R-4 Condition 2. An automatic sprinkler system installed in accordance with 903.3.1.2 shall be permitted in Group R-4 Condition 2. Attics shall be protected in accordance with Sections 903.2.8.3.1 or 903.2.8.3.2.

903.2.8.3.1 Attics used for living purposes, storage or fuel fired equipment. Attics used for living purposes, storage or fuel fired equipment shall be protected throughout with automatic sprinkler system installed in accordance with 903.3.1.2.

903.2.8.3.2 Attics not used for living purposes, storage or fuel fired equipment . Attics not used for living purposes, storage or fuel fired equipment shall be protected in accordance with one of the following:

1. **Attics protected throughout by a heat detector system arranged to activate the building fire alarm system in accordance with Section 907.2.10.**
2. **Attics constructed of non-combustible materials.**
3. **Attics constructed of fire-retardant-treated wood framing complying with Section 2303.2.**
4. **The automatic fire sprinkler system shall be extended to provide protection throughout the attic space.**

~~903.2.8.2~~ 903.2.8.4 Care facilities. An automatic sprinkler system installed in accordance with 903.3.1.3 shall be permitted in care facilities with 5 or fewer individuals in a single-family dwelling.

903.3.1.3 NFPA 13D sprinkler systems. Automatic sprinkler systems installed in one and two-family dwellings, Group R-3, ~~and~~ R-4 ~~congregate residences~~ **Condition 1** and townhouses shall be permitted to be installed throughout in accordance with NFPA 13D.

907.2.3 Group E. A manual fire alarm system that initiates the occupant notification signal utilizing an emergency voice/alarm communication system meeting the requirements of section 907.5.2.2 and installed in accordance with Section 907.6 shall be installed in Group E occupancies. When *automatic sprinkler systems* or smoke detectors are installed, such systems or detectors shall be connected to the building fire alarm system.

Exceptions:

1. A manual fire alarm system is not required in Group E occupancies with an *occupant load* of ~~less than~~ 50 **or less**.
2. **Emergency voice/alarm communication systems meeting the requirements of Section 907.5.2.2 and installed in accordance with Section 907.6 shall not be required in Group E occupancies with occupant loads of 100 or less, provided that activation of the manual fire alarm system initiates an *approved* occupant notification signal in accordance with Section 907.5.**
3. Manual fire alarm boxes are not required in Group E occupancies where all of the following apply:
   3.1. Interior *corridors* are protected by smoke detectors.
   3.2. Auditoriums, cafeterias, gymnasiums and similar areas are protected by *heat detectors* or other *approved* detection devices.

3.3. Shops and laboratories involving dusts or vapors are protected by *heat detectors* or other *approved* detection devices.

4. Manual fire alarm boxes shall not be required in Group E occupancies where the building is equipped throughout with an *approved automatic sprinkler system* installed in accordance with Section 903.3.1.1, **and where** the emergency voice/alarm communication system ~~will~~ activate**s** on sprinkler water flow and manual activation is provided from a normally occupied location.

907.2.6.1 Group I-1. In Group I-1 occupancies, an automatic smoke detection system shall be installed in *corridors*, waiting areas open to *corridors* and *habitable spaces* other than *sleeping units* and kitchens. The system shall be activated in accordance with Section 907.5.

Exceptions:

1. **For Group I-1 Condition 1 smoke** ~~Smoke~~ detection in habitable spaces is not required where the facility is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.

2. Smoke detection is not required for exterior balconies.

907.5.2.3.3 Groups I-1, ~~and~~ R-1 and R-4. Group I-1**,** ~~and~~ R-1 **and R-4** *dwelling units* or *sleeping units* ~~in accordance with Table 907.5.2.3.3~~ shall be provided with a visible alarm notification appliance, activated by both the in-room smoke alarm and the building fire alarm system **in accordance with Table 907.5.2.3.3 and the accessibility requirements of ICC A117.1.**

907.5.2.3.4 Group R-2. In Group R-2 occupancies required by Section 907 to have a fire alarm system, ~~all dwelling units and sleeping units shall be provided with the capability to support visible alarm notification appliances in accordance with ICC A117.1 Such capability shall be permitted to include the potential for future interconnection of the building fire alarm system with t he unit smoke alarms, replacement of audible appliances with combination audible/visible appliances, or future extension of the existing wiring from the unit smoke alarm locations to required locations for visible appliances.~~ **visual alarms shall be provided within common and public areas, but are not required within individual dwelling units.**

908.7 Carbon monoxide alarms. Approved carbon monoxide alarms in new buildings and structures shall be provided in the locations described in Sections 908.7.1 and 908.7.2.

908.7.1 ~~Carbon Monoxide Alarms~~ Group I. Group I ~~or R~~ occupancies located in a building containing a fuel-burning appliance or a building which has an attached garage shall be equipped with single station carbon monoxide alarms. The carbon monoxide alarms shall be listed as complying with UL 2034 and be installed and maintained in accordance with NFPA 720 and the manufacturer's instructions. An open parking garage, as defined in Chapter 2, or enclosed parking garage ventilated in accordance with Section 404 of the International Mechanical Code shall not be considered an attached garage.

Exception: Sleeping units ~~or dwelling units~~ which do not themselves contain a fuel-burning appliance or have an attached garage, but which are located in a building with a fuel-burning appliance or an attached garage, need not be equipped with single-station carbon monoxide alarms provided that:

1. The sleeping unit ~~or dwelling units~~ is located more than one story above or below any story that contains a fuel-burning appliance or an attached garage.
2. The sleeping unit ~~or dwelling units~~ is not connected by ductwork or ventilation shafts to any room containing a fuel-burning appliance or to an attached garage.
3. The building is equipped with a common-area carbon monoxide alarm system.

908.7.1.1 Carbon Monoxide Detection Systems. Carbon monoxide detection systems, that include carbon monoxide detectors and audible notification appliances installed and maintained in accordance with this section for carbon monoxide alarms and NFPA 720 shall be permitted. The carbon monoxide detectors shall be listed as complying with UL 2075.

908.7.2 Group R. Carbon monoxide alarms or a household carbon monoxide detection system shall be installed in Group R Occupancies.

908.7.2.1 Installation Location. Carbon monoxide alarms shall be located in each bedroom or within 15 feet outside of each bedroom door. Bedrooms on separate floor levels in a structure consisting of two or more stories shall have separate carbon monoxide alarms serving each story.

908.7.2.1.2 Three or More Dwelling Units. In addition to the locations required by section 908.7.2.1, a carbon monoxide alarm shall be installed in any enclosed common areas within buildings containing three or more dwelling units.

908.7.2.2 Alarm requirements.

908.7.2.2.1 Single station alarm requirements. Single station carbon monoxide alarms shall be listed as complying with ANSI/UL 2034 and shall be installed in accordance with this code and the manufacturer's installation instructions.

908.7.2.2.2 Household carbon monoxide detection systems. Household carbon monoxide detection systems, that include carbon monoxide detectors and audible notification appliances, installed and maintained in accordance with this section for carbon monoxide alarms and NFPA 720 shall be permitted. The carbon monoxide detectors shall be listed as complying with ANSI/UL 2075.

908.7.2.2.3 Combination smoke/carbon monoxide alarm/detector requirements. Combination smoke/carbon monoxide alarms shall be listed as complying with ANSI/UL 2034 and ANSI/UL 217. Combination smoke/carbon monoxide detectors shall be listed as complying with ANSI/UL 2075 and ANSI/UL 268. See section 907.2.11 of this code for additional requirements specific to the installation of smoke alarms.

908.7.2.3 Power Source.

908.7.2.3.1 Carbon Monoxide Alarms. Single station carbon monoxide alarms shall be battery operated, or may receive their primary power from the building wiring system. Plug in devices securely fastened to the structure and installed in accordance with the manufacturer's installation instructions are deemed to satisfy this requirement. Hard wired and plug in carbon monoxide alarms shall be equipped with battery back up.

908.7.2.3.2 Household carbon monoxide detection systems. Required power supply sources for household carbon monoxide detection systems shall be in accordance with NFPA 720.

908.7.2.3.3 Combination smoke/carbon monoxide alarms/detectors. Combination smoke/carbon monoxide alarms/detectors shall receive their power source in accordance with Section 907.2.11.4 and NFPA 72. Smoke alarm features of combination smoke/carbon monoxide alarms shall be interconnected.

Exception: Interconnection and hard-wiring of combination smoke/carbon monoxide alarms/detectors in existing areas shall not be required where the alterations or repairs do not result in the removal of interior wall or ceiling finishes exposing the structure.

908.7.2.4 Where required in existing affected occupancies. Where a new carbon monoxide source is introduced or work requiring a structural permit occurs in existing Group R occupancies, carbon monoxide alarms shall be provided in accordance with Sections 908.7.2.1 through 908.7.2.3 of this code.

Exception: Work involving the exterior surfaces of affected occupancies, such as the replacement of roofing or siding, or the *addition* or replacement of windows or doors, or the *addition* of a porch or deck, are exempt from the requirements of this section.

909.18.8.3.1 Report filing. A copy of the final report shall be filed with the ~~fire~~ **building** official and an identical copy shall be maintained in an approved location at the building.

CHAPTER 10
MEANS OF EGRESS

1001.2 ~~Minimum requirements~~ Alterations to existing means of egress.
It shall be unlawful to alter a building or structure in a manner that will reduce the number of *exits* or the capacity of the *means of egress* to less than required by this code.

1001.4 Fire safety and evacuation plans.
Fire safety and evacuation plans shall be provided for all occupancies and buildings where required by the ~~*International* *Fire Code*~~. Such fire safety and evacuation plans shall comply with the applicable provisions of Sections 401.2 and 404 of the ~~*International* *Fire Code*~~ ***as approved by the Fire Code Official*.**

1008.1.9.6 Special locking arrangements in doors in Groups I-1, ~~and~~ I-2, R-4, and R-3 facilities providing care. In facilities subject to licensure by the State, ~~*A*~~***a****pproved* special egress locks shall be permitted in a Group **I-1,** I-2, **R-4 or R-3 facilities providing care** ~~occupancy~~ where the clinical needs of persons receiving care require such locking. Special egress locks shall be permitted in such occupancies where the building is equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.**1 in Groups I-1 and I-2, 903.3.1.2 in Group R-4 and 903.3.1.3 in Group R-3 facilities providing care,** or an *approved* automatic smoke or heat detection system installed in accordance with Section 907, provided that the doors are installed and operate in accordance with Items 1 through 7 below.

1. The doors unlock upon actuation of the *automatic sprinkler system* or automatic fire detection system.
2. The doors unlock upon loss of power controlling the lock or lock mechanism.
3. The door locks shall have the capability of being unlocked by a signal from the *fire command center*, a nursing station or other *approved* location.
4. A building occupant shall not be required to pass through more than ~~one~~ **two** door**s** equipped with a special egress lock before entering an *exit*.
5. The procedures for the operation(s) of the unlocking system shall be described and approved as part of the emergency planning and preparedness required by Chapter 4 of the ~~International~~ Fire Code.
6. All clinical staff shall have the keys, codes or other means necessary to operate the locking devices.
7. Emergency lighting shall be provided at the door.

Exceptions**:**

1. Items 1 through 4 shall not apply to doors to areas where persons, which because of clinical needs, require restraint or containment as part of the function of a psychiatric treatment area.

2. In Groups I-1 Condition 2, Group R-4 Condition 2 and Group R-3 facilities providing care, where the refuge area is located in a fenced or walled yard, special egress locks located on doors or gates in the fence or wall need not automatically deactivate when the refuge area is exterior to and not less than 50 feet (15 240 mm) away from the building and access to the public way is provided. Except where provided in a public way, each refuge area shall have a minimum of 15 square feet (1.41 m^2) of net clear area for each occupant.

1009.15 Handrails.
Stairways shall have *handrails* on each side and shall comply with Section 1012. Where glass is used to provide the *handrail*, the *handrail* shall also comply with Section 2407.

Exceptions:

1. *Handrails* for *aisle stairs* provided in accordance with Section 1028.13.
2. *Stairways* within dwelling units and s*piral stairways* are permitted to have a *handrail* on one side only.
3. Decks, patios and walkways that have a single change in elevation where the landing depth on each side of the change of elevation is greater than what is required for a landing do not require *handrails*.

4. In Group R-3 occupancies, decks, patios and walkways that have a change in elevation consisting of a flight of stairs with three or fewer risers where the landing depth on each side of

the change of elevation is greater than what is required for a landing do not require *handrails*.

5. In Group R-3 occupancies, a change in elevation consisting of a ~~single~~ **flight of stairs with three or fewer risers** ~~riser~~ at an entrance or egress door does not require *handrails*.

6. Changes in room elevations ~~of~~ **consisting of a flight of stairs with** three or fewer risers within dwelling units and sleeping units in Groups R-2 and R-3 do not require *handrails*.

CHAPTER 11
ACCESSIBILITY

1101.2.2.9 Recreational Facilities – ICC A117.1 Chapter 11. ICC A117.1 Chapter 11 is adopted as follows;

1. **Section 1101.2.1 General Exceptions.** Section 1101.2.1 is adopted in its entirety.
2. **Section 1101.2.2 Area of Sport Activity.** Section 1101.2.2 is adopted but is restricted in application to sites where buildings and facilities meeting the definition of "Affected Buildings" are constructed. See ORS 447.210(1).
3. **Section 1101.2.3 Recreational Boating Facilities.** Section 1101.2.3 is adopted but is restricted in application to fixed (non-floating) docks and piers.
4. **Section 1101.2.4 Exercise Machines and Equipment.** Section 1101.2.4 is not adopted.
5. **Section 1101.3 Protruding Objects.** Section 1101.3 is adopted in its entirety.
6. **Section 1102 Amusement Rides.** Section 1102 is adopted but is restricted in application to those provisions providing accessibility to an amusement ride which is accessory to an "*Affected Building.*" Amusement rides are regulated exclusively through Oregon Building Codes Division's "*Elevator and Amusement Ride Safety Program.*"
7. **Section 1103 Recreational Boating Facilities.** Section 1103 is adopted but is restricted in application to fixed (non-floating) docks and piers.
8. **Section 1104. Exercise Machines and Equipment.** Section 1104 is not adopted.
9. **Section 1105 Fishing Piers and Platforms.** Section 1105 is adopted but is restricted in application to fixed (non-floating) fishing piers and platforms.
10. **Section 1106 Golf Facilities.** Section 1106 is not adopted.
11. **Section 1107 Miniature Golf Facilities.** Section 1107 is adopted but is restricted in application to sites where buildings and facilities meeting the definition of "Affected Buildings" are constructed. See ORS 447.210(1).
12. **Section 1108 Play Areas.** Section 1108 is adopted but is restricted in application to *Children's play structures* as governed by Section 402.6.3.
13. **Section 1109 Swimming Pools, Wading Pools, Hot Tubs and Spas.** Section 1109 is not adopted.
14. **Section 1110 Shooting Ranges.** Section 1110 is adopted but is restricted in application to sites where buildings and facilities meeting the definition of "Affected Buildings" are constructed. See ORS 447.210(1).

1104.4 Multilevel buildings and facilities. At least one *accessible* route shall connect each *story* and *mezzanine* in multi-*story buildings* and *facilities*.

Exceptions:

1. In private buildings or *facilities* that are less than three *stories* and that have less than 3000 square feet (279 m2) per *story*, an *accessible* route shall not be required to connect *stories* provided that the *building* or *facility* is not a shopping center, a shopping mall, the professional office of a health care provider, a terminal, depot or other station used for specified public transportation or airport passenger terminal.

~~At least one *accessible route* shall connect each *accessible* level, including *mezzanines*, in multilevel buildings and facilities.~~

~~1. An *accessible route* is not required to stories and *mezzanines* that have an aggregate area of not more than 3,000 square feet (278.7 m^2 and are located above and below accessible levels. This exception shall not apply to:~~

~~**Exceptions:**~~

~~1.1. Multiple tenant facilities of Group M occupancies containing five or more tenant spaces;~~
~~1.2. Levels containing offices of health care providers (Group B or I); or~~
~~1.3 Passenger transportation facilities and airports (Group A-3 or B). ; or~~
~~Passenger transportation facilities and airports Group A-3 or B).~~
~~1.4 Government buildings covered by Title II of the Americans With Disabilities Act.~~

2. Levels that do not contain *accessible* elements or other spaces as determined by Section 1107 or 1108

are not required to be served by an *accessible route* from an *accessible* level.

3. In air traffic control towers, an *accessible route* is not required to serve the cab and the floor immediately below the cab.
4. Where a two-story **public** building or facility has one *story* with an *occupant load* of five or fewer persons that does not contain *public use* space, that *story* shall not be required to be connected by an *accessible route* to the *story* above or below.
5. Vertical access to elevated employee work stations within a courtroom is not required at the time of initial construction, provided a *ramp*, lift or elevator can be installed without requiring reconfiguration or extension of the courtroom or extension of the electrical system.
6. **In a parking garage of fewer than three stories, an accessible route need not be provided to an upper or lower floor level provided that all of the accessible parking spaces are provided on a floor level with an accessible route to an accessible building entrance or to another building.**
7. **In a building of fewer than three stories, an accessible route need not be provided in the portion of the building that is of the following occupancy classifications:**
   7.1. Group F-1 and 2;
   7.2. Group H-1, 2, 3, 4 and 5;
   7.3. Group S-1 and 2; and
   7.4. Group U.
8. **In a mixed-occupancy building of fewer than three stories, containing a Group B or M occupancy mixed with Group F-1 or 2; Group H-, 2, 3, 4 or 5; Group S-1, or 2; or Group U occupancies, an accessible route need not be provided, if the Group B or M occupancy is less than 3,000 square feet (279 m2) on any floor level without an accessible route.**
9. **In a building or occupancy of fewer than two stories, an elevator need not be provided to a mezzanine that is less than 3,000 square feet (279 m2).**
10. **In a building of fewer than three stories, an accessible route need not be provided where ramps, grade-level entries or accessible horizontal connections from adjacent buildings are provided to each floor level provided all facilities, elements and spaces are connected to an accessible route.**

1104.5 Elevators Required.
Elevators shall be provided in all shopping centers, shopping malls, professional offices of health care providers (B or I occupancies), a terminal, depot or other station used for specified public transportation or airport passenger terminals and government buildings that are covered by Title II of the Americans with Disabilities Act.

Exceptions:

1. **Elevators need not be provided in buildings and spaces listed in ORS 447.247(1)(a), which are exempt from the accessible route provisions identified Section 1104.4 exception 4.**
2. **Elevators need not be provided in buildings and spaces listed in ORS 447.247(1)(b), which are exempt from the accessible route provisions of Section 1104.4.**
3. **Elevators are not required where a terminal, depot or other station used for specified public transportation or airport passenger terminals are provided with an accessible route to all portions of the facilities.**

1107.5 Group I. *Accessible units***, *Type A units*,** and *Type B units* shall be provided in Group I occupancies in accordance with Sections 1107.5.1 through 1107.5.5.

1107.5.1 Group I-1. *Accessible units***, *Type A units*,** and *Type B units* shall be provided in Group I-1 occupancies in accordance with Sections 1107.5.1.1 through 1107.5.1.2**3. All Group I-1 Condition 2 assisted living facilities and residential care facilities shall be provided with one standard roll-in-type shower compartment, in each *dwelling* or *sleeping unit*, where bathing facilities are provided inside the *dwelling* or *sleeping unit*. All Group I-1 Condition 2 residential care facilities shall be provided with a standard roll-in-type shower compartment, in each bathing facility provided outside the dwelling or sleeping unit, except in a bathing room where an accessible tub is provided.**

1107.5.1.1 Accessible units. In Group I-1, Condition 1, at least 4 percent, but not less than one, of the *dwelling units* and *sleeping units* shall be *Accessible units*. In Group I-1 Condition 2, ~~A~~at least ~~4~~10 percent, but not less than one, of the *dwelling units* and *sleeping units* shall be *Accessible units*.

1107.5.1.2 Type A units. In Group I-1 Condition 2 assisted living facilities and residential care facilities, every *dwelling unit* or *sleeping unit* shall be a *Type A unit*.

1107.5.1.~~2~~ 3 Type B units. In structures with four or more *dwelling units* or *sleeping units intended to be occupied as a residence*, every *dwelling unit* or *sleeping unit intended to be occupied as a residence* shall be a *Type B unit*.

Exception: The number of *Type B units* is permitted to be reduced in accordance with Section 1107.7.

1107.6.4 Group R-4. *Accessible units*, ***Type A units*,** and *Type B units* shall be provided in Group R-4 occupancies in accordance with Sections 1107.6.4.1 through 1107.6.4.~~2~~ **3. All Group R-4 Condition 2 assisted living facilities and residential care facilities shall be provided with one standard roll-in-type shower compartment, in each dwelling or sleeping unit, where bathing facilities are provided inside the *dwelling* or *sleeping unit*. All Group R-4 Condition 2 residential care facilities shall be provided with a standard roll-in-type shower compartment, in each bathing facility provided outside the *dwelling* or *sleeping unit*, except in a bathing room where an accessible tub is provided.**

1107.6.4.1 Accessible units. In Group R-4, Condition 1, ~~A~~ at least one of the *dwelling* or *sleeping units* shall be an *Accessible unit*. **In Group R-4 Condition 2, at least 10 percent, but not less than one, of the *dwelling units* and *sleeping units* shall be *Accessible units*.**

1107.6.4.2 Type A units. In Group R-4 Condition 2 assisted living facilities and residential care facilities, every *dwelling unit* or *sleeping unit* shall be a *Type A unit*.

1107.6.4.~~2~~ 3 Type B units. In structures with four or more *dwelling units* or *sleeping units intended to be occupied as a residence*, every *dwelling unit* or *sleeping unit intended to be occupied as a residence* shall be a *Type B unit*.

Exception: The number of Type B units is permitted to be reduced in accordance with Section 1107.7.

1203.3.2 Exceptions. The following are exceptions to Sections 1203.3 and 1203.3.1:

1. Where warranted by climatic conditions, ventilation openings to the outdoors are not required if ventilation openings to the interior are provided.
2. The total area of ventilation openings is permitted to be reduced to 1/1,500 of the under-floor area where the ground surface is covered with a Class I vapor retarder material and the required openings are placed so as to provide cross ventilation of the space. The installation of operable louvers shall not be prohibited.
3. Ventilation openings are not required where continuously operated mechanical ventilation is provided at a rate of 1.0 cubic foot per minute (cfm) for each 50 square feet (1.02 L/s for each 10 m2) of crawl space floor area and the ground surface is covered with a Class I vapor retarder.
4. Ventilation openings are not required where the ground surface is covered with a Class I vapor retarder, the perimeter walls are insulated and the space is conditioned in accordance with the International Energy Conservation Code.
5. For buildings in flood hazard areas as established **by the Flood Plain Administrator** ~~in Section 1612.3~~, the openings for under-floor ventilation shall be deemed as meeting the flood opening requirements of ASCE 24 provided that the ventilation openings are designed and installed in accordance with ASCE 24.

~~[P]~~ 1210.1 Required fixtures.
The number and type of plumbing fixtures provided in any occupancy shall comply with Chapter 29. **See Chapter 11 for accessibility requirements.**

1210.4 Fixture Clearances.
The centerline of water closets or bidets shall be 15 inches (381 mm) minimum to any side wall or obstruction, and at a spacing of 30 inches (762 mm) minimum from center to center of any fixture. The clear space in front of water closets and bidets in residential structures shall be 21 inches (533 mm) minimum. For all other occupancies, the clear space in front of water closets and bidets shall be 24 inches (610 mm) minimum. The centerline of urinals shall be 12 inches (305 mm) minimum from any side wall or partition and at a spacing of 24 inches (610 mm) minimum center to center of other urinals. The clear space from the front of urinals shall be 24 inches (610 mm) minimum. Where plumbing fixtures are required to meet the accessibility provisions of this code, the installation shall comply with the requirements of Chapter 11 and ICC/ANSI A117.1.

1403.5 Vertical and lateral flame propagation.
Exterior walls on buildings of Type I, II, III or IV construction that are greater than 40 feet (12 192 mm) in height above grade plane and contain a combustible water-resistive barrier shall be tested in accordance with and comply with the acceptance criteria of NFPA 285. **For the purpose of this section, fenestration products and flashing of fenestrations shall not be considered part of the water resistive barrier.**

Exceptions:

1. **Walls in which the water-resistive barrier is the only combustible component and the exterior wall has a wall covering of brick, concrete, stone, terra cotta, stucco or steel with minimum thicknesses in accordance with Table 1405.2.**

2. **Walls in which the water-resistive barrier is the only combustible component and the water-resistive barrier has a Peak Heat Release Rate of less than 150 kW/m2, a Total Heat Release of less than 20 MJ/m2 and an Effective Heat of Combustion of less than 18 MJ/kg as determined in accordance with ASTM E1354 and has a flame spread index of 25 or less and a smoke-developed index of 450 or less as determined in accordance with ASTM E84 or UL 723. The ASTM E1354 test shall be conducted on specimens at the thickness intended for use, in the horizontal orientation and at an incident radiant heat flux of 50 kW/m2.**

1403.6 Flood resistance. For buildings in flood hazard areas as established **by the Flood Plain Administrator** ~~in Section 1612.3~~, exterior walls extending below the elevation required by Section 1612 shall be constructed with flood-damage-resistant materials. Wood shall be pressure-preservative treated in accordance with AWPA U1 for the species, product and end use using a preservative listed in Section 4 of AWPA U1 or decay-resistant heartwood of redwood, black locust or cedar.

1403.7 Flood resistance for high-velocity wave action areas. For buildings in flood hazard areas subject to high-velocity wave action as established **by the Flood Plain Administrator** ~~in Section 1612.3~~, electrical, mechanical and plumbing system components shall not be mounted on or penetrate through exterior walls that are designed to break away under flood loads.

1507.17 Photovoltaic modules/shingles.
The installation of photovoltaic modules/shingles shall comply with the provisions of this section **and the Oregon Solar Installation Specialty Code**.

1507.17.3 Wind resistance.
Photovoltaic modules/shingles shall be tested in accordance with procedures and acceptance criteria in ASTM D 3161. Photovoltaic modules/shingles shall comply with the classification requirements of Table 1507.2.7.1(2) for the appropriate maximum nominal design wind speed **V_{asd} of Chapter 16**. Photovoltaic modules/shingle packaging shall bear a label to indicate compliance with the procedures in ASTM D 3161 and the required classification from Table 1507.2.7.1(2).

1509.7 Photovoltaic systems.
Rooftop mounted photovoltaic systems shall be designed in accordance with this section **and the Oregon Solar Installation Specialty Code.**

1509.7.1 Wind resistance.
Rooftop mounted photovoltaic systems shall be designed for wind loads for component and cladding in accordance with Chapter 16 using an effective wind area ~~based on the dimensions of a single unit frame determined~~ **in accordance with Chapter 16 and ASCE 7 Section 26.2.**

EXCEPTION: Installations meeting the prescriptive requirements of Section 305.4 of the Oregon Solar Installation Specialty Code.

1509.7.2 Structural Fire Resistance. ~~Fire classification. Rooftop mounted photovoltaic systems shall have the same fire classification as the roof assembly required by Section 1505.~~ **The structural frame and roof construction supporting the load imposed upon the roof by the photovoltaic panels/modules shall comply with the requirements of Table 601.**

~~**1509.7.3 Installation.**~~
~~Rooftop mounted photovoltaic systems shall be installed in accordance with the manufacturer's installation instructions.~~

~~**1509.7.4 Photovoltaic panels and modules.**~~
~~Photovoltaic panels and modules mounted on top of a roof shall be listed and labeled in accordance with UL 1703 and shall be installed in accordance with the manufacturer's installation instructions.~~

1510.3.1 Reroofing inspection. When required by the building official, an inspection prior to the installation of new roofing shall be performed to verify the existing roofing meets the conditions of Section 1510.3. The building official may accept an inspection report of the above listed conditions prepared by an approved special inspector.

1510.3.2 Final inspection. A final inspection and approval shall be obtained from the building official when the reroofing is complete.

CHAPTER 16
STRUCTURAL DESIGN

1603.1 General. Construction documents shall show the size, section and relative locations of structural members with floor levels, column centers and offsets dimensioned. The design loads and other information pertinent to the structural design required by Sections 1603.1.1 through 1603.1.9 shall be indicated on the construction documents.

Exception: Construction documents for buildings constructed in accordance with the conventional light-frame construction provisions of Section 2308 shall indicate the following structural design information:

1. Floor and roof live loads.
2. Ground snow load, Pg.
3. Ultimate design wind speed, V_{ult}, (3-second gust), miles per hour (mph) (km/hr) and nominal design wind speed, V_{asd}, as determined in accordance with Section 1609.3.1 and wind exposure.
4. Seismic design category and site class.
~~5. Flood design data, if located in flood hazard areas established in Section 1612.3.~~
~~6~~ **5**. Design load-bearing values of soils.

1603.1.7 Reserved. ~~**Flood design data.** For buildings located in whole or in part in flood hazard areas as established in Section 1612.3, the documentation pertaining to design, if required in Section 1612.5, shall be included and the following information, referenced to the datum on the community's Flood Insurance Rate Map (FIRM), shall be shown, regardless of whether flood loads govern the design of the building:~~

~~1. In flood hazard areas not subject to high-velocity wave action, the elevation of the proposed lowest floor, including the basement.~~
~~2. In flood hazard areas not subject to high-velocity wave action, the elevation to which any nonresidential building will be dry flood proofed.~~
~~3. In flood hazard areas subject to high-velocity wave action, the proposed elevation of the bottom of the lowest horizontal structural member of the lowest floor, including the basement.~~

1604.4 Analysis. Load effects on structural members and their connections shall be determined by methods of structural analysis that take into account equilibrium, general stability, geometric compatibility and both short- and long-term material properties.
Members that tend to accumulate residual deformations under repeated service loads shall have included in their analysis the added eccentricities expected to occur during their service life.
Any system or method of construction to be used shall be based on a rational analysis in accordance with well-established principles of mechanics. Such analysis shall result in a system that provides a complete load path capable of transferring loads from their point of origin to the load-resisting elements.

The total lateral force shall be distributed to the various vertical elements of the lateral force-resisting system in proportion to their rigidities, considering the rigidity of the horizontal bracing system or diaphragm. Rigid elements assumed not to be a part of the lateral force-resisting system are permitted to be incorporated into buildings provided their effect on the action of the system is considered and provided for in the design. ~~Except where diaphragms are flexible, or are permitted to be analyzed as flexible,~~ **A diaphragm is rigid for the purpose of distribution of story shear and torsional moment when the lateral deformation of the diaphragm is less than or equal to two times the average story drift. Where required by ASCE 7,** provisions shall be made for the increased forces induced on resisting elements of the structural system resulting from torsion due to eccentricity between the center of application of the lateral forces and the center of rigidity of the lateral force-resisting system.

Every structure shall be designed to resist the overturning effects caused by the lateral forces specified in this chapter. See Section 1609 for wind loads, Section 1610 for lateral soil loads and Section 1613 for earthquake loads

1605.2.1 Other loads. ~~Where flood loads, Fa, are to be considered in the design, the load combinations of Section~~

~~2.3.3 of ASCE 7 shall be used.~~ Where self-straining loads, T, are considered in design, their structural effects in combination with other loads shall be determined in accordance with Section 2.3.5 of ASCE 7. Where an ice-sensitive structure is subjected to loads due to atmospheric icing, the load combinations of Section 2.3.4 of ASCE 7 shall be considered.

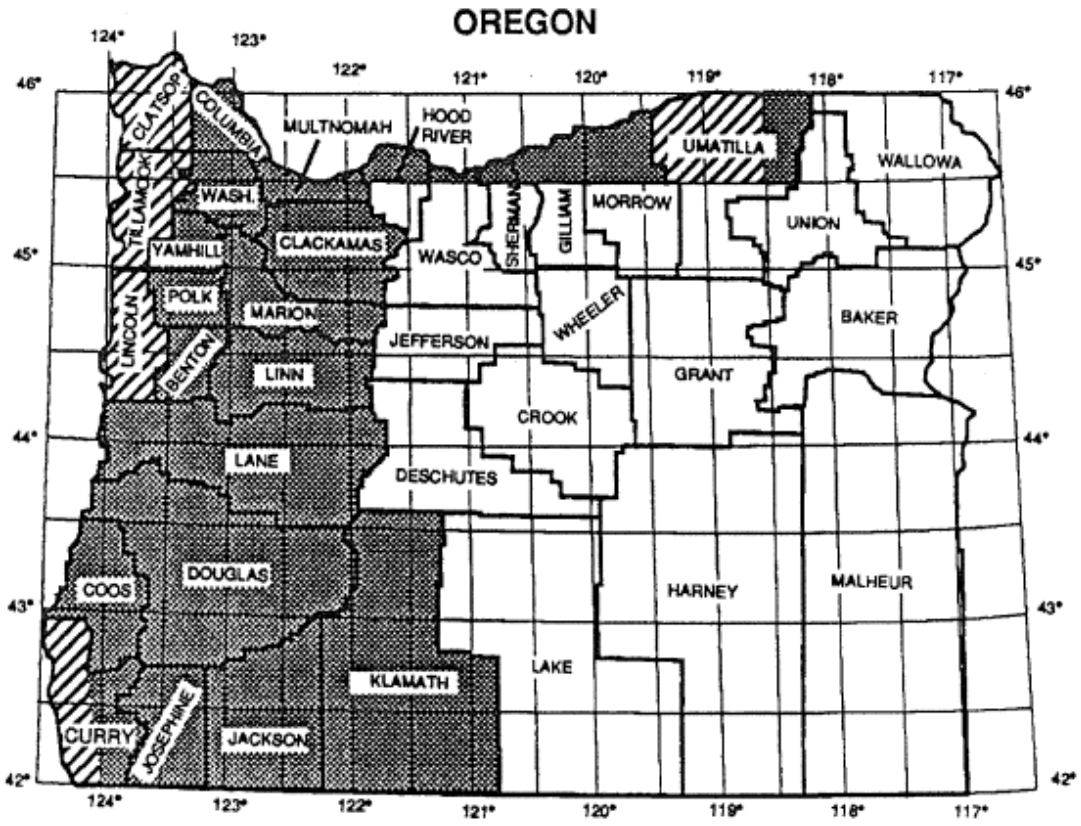
1605.3.1.2 Other loads. ~~Where flood loads, Fa, are to be considered in design, the load combinations of Section 2.4.2 of ASCE 7 shall be used.~~ Where self-straining loads, T, are considered in design, their structural effects in combination with other loads shall be determined in accordance with Section 2.4.4 of ASCE 7. Where an ice-sensitive structure is subjected to loads due to atmospheric icing, the load combinations of Section 2.4.3 of ASCE 7 shall be considered.

1605.3.2.1 Other loads.
Where *F*, *H* or *T* are to be considered in the design, each applicable load shall be added to the combinations specified in Section 1605.3.2. Where self-straining loads, *T*, are considered in design, their structural effects in combination with other loads shall be determined in accordance with Section 2.4.4 of ASCE 7. **Where an ice-sensitive structure is subjected to loads due to atmospheric icing, Di and Wi, the alternate basic load combinations of Section 1605.3.2 shall not be used.**

TABLE 1607.1—continued
MINIMUM UNIFORMLY DISTRIBUTED LIVE LOADS, *Lo*, AND MINIMUM CONCENTRATED LIVE LOADS$_g$

OCCUPANCY OR USE	UNIFORM (psf)	CONCENTRATED (lbs.)
30.Stairs and exits		
One- and two-family dwellings	40	300[f]
All other	100	300[f]
31.Storage ~~warehouses~~ **except for one and two-family dwellings**(shall be designed for heavier loads if required for anticipated storage)		
Heavy	250[m]	—
Light	125[m]	
32.Stores		
Retail		
First floor	100	1,000
Upper floors	75	1,000
Wholesale, all floors	125[m]	1,000
33.Vehicle barriers	See Section 1607.8.3	
34.Walkways and elevated platforms (other than exitways)	60	—
35.Yards and terraces, pedestrians	100[m]	—
~~41~~ **36. Exterior foot bridge (when part of the**	**100**	**1000**

means of egress or an accessible route)		



135

1. All areas with full exposure to ocean winds shall be designed ~~105~~ mph areas.
2. Areas in Multnomah and Hood River Counties with full exposure to Columbia River Gorge winds shall be designed ~~105~~ mph areas.

135

135

~~105~~ mph

~~95~~ mph **120**

~~85~~ mph

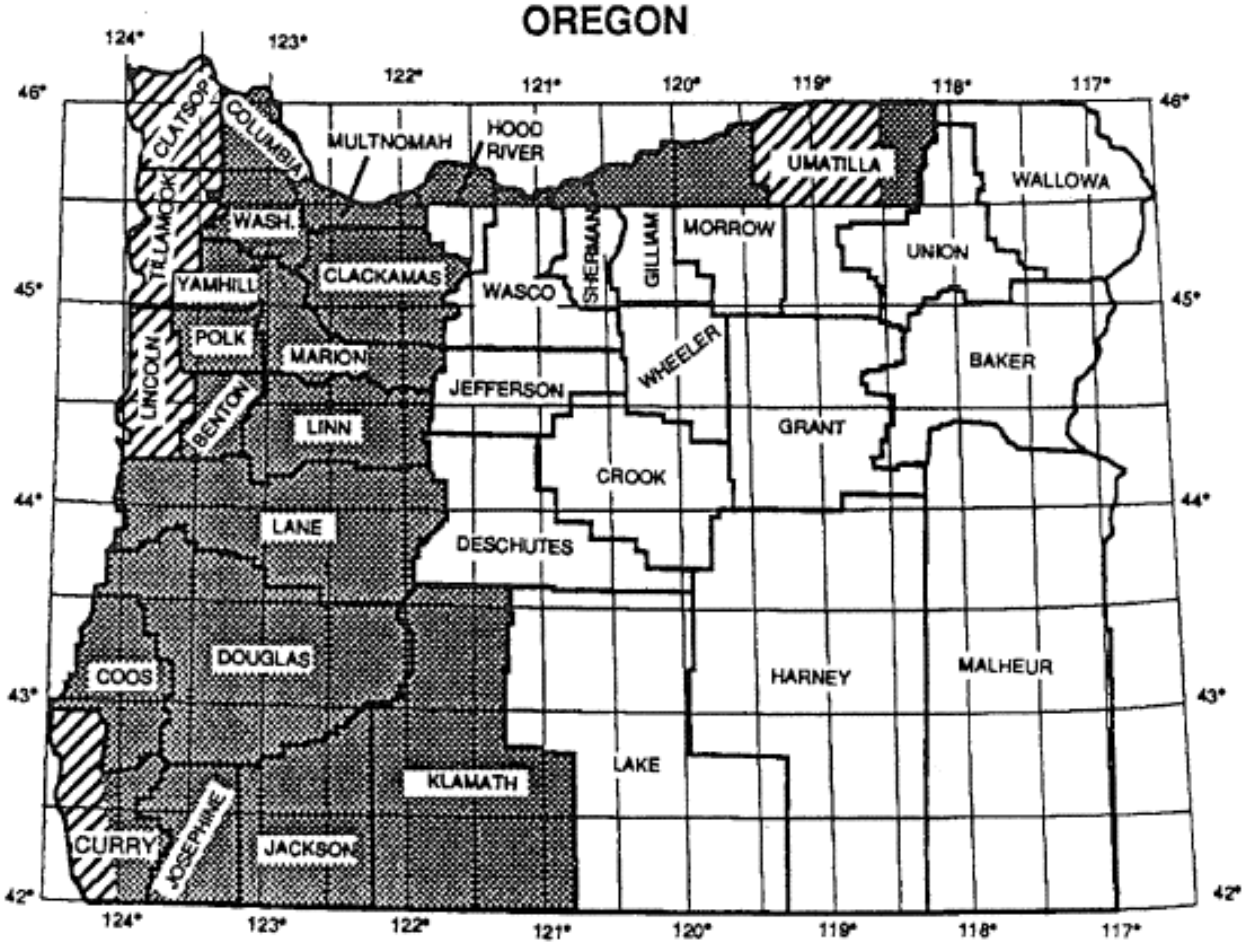
110

For SI: 1 mile per hour = 0.44 m/s

FIGURE 1609**A**

~~BASIC WIND SPEED (3-SECOND GUST) IN MILES PER HOUR (×1.61 for km/h)~~

ULTIMATE DESIGN WIND SPEED, V_{ULT} FOR RISK CATEGEORY II BUILIDINGS AND OTHER STRUCTURES



145

1. All areas with full exposure to ocean winds shall be designed ~~105~~ mph areas.
2. Areas in Multnomah and Hood River Counties with full exposure to Columbia River Gorge winds shall be designed ~~105~~ mph areas.

145

145

~~105~~ mph

~~95~~ mph **130**

~~85~~ mph

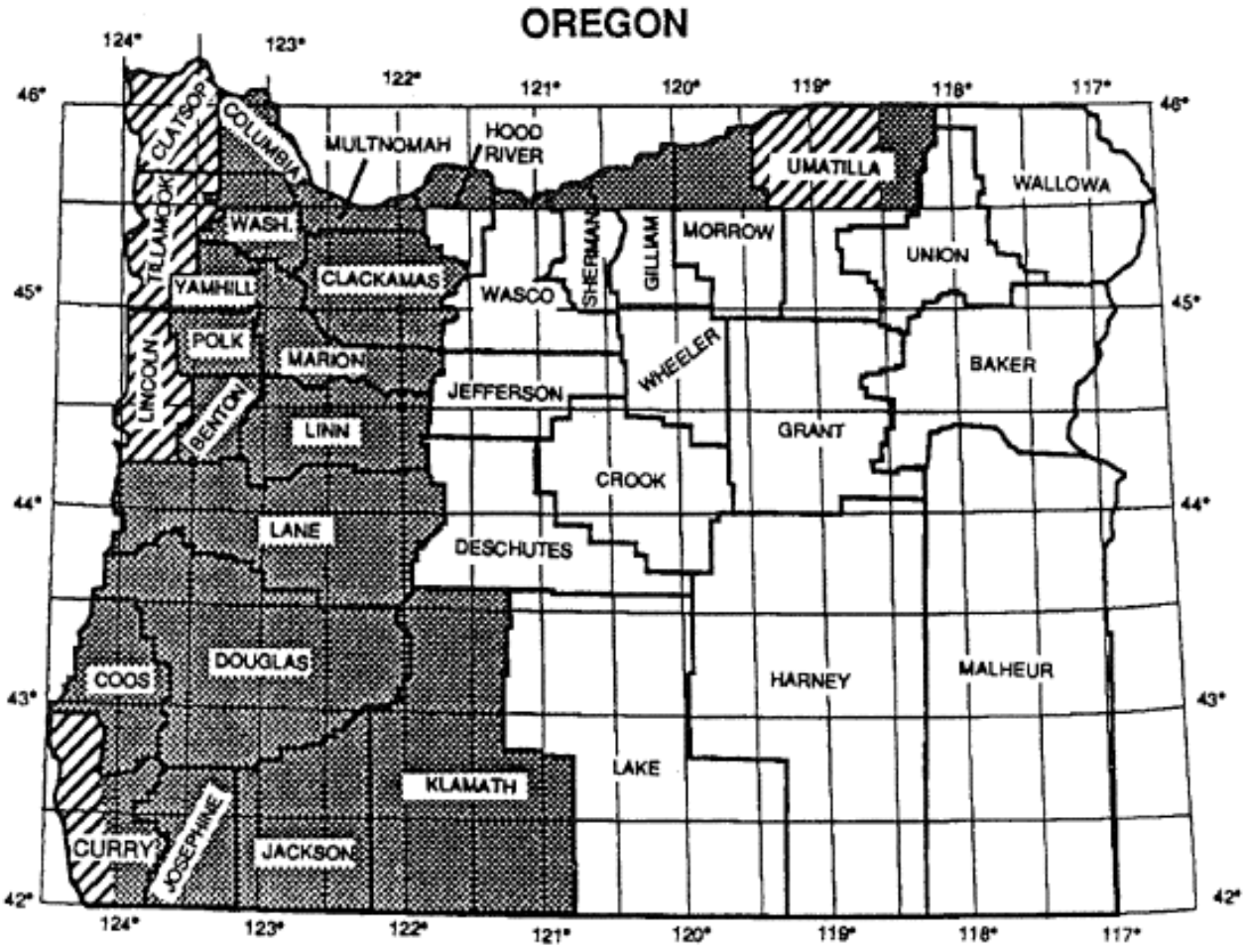
115

For SI: 1 mile per hour = 0.44 m/s

FIGURE 1609 **B**

~~BASIC WIND SPEED (3-SECOND GUST) IN MILES PER HOUR (×1.61 for km/h)~~

ULTIMATE DESIGN WIND SPEED, V_{ULT} FOR RISK CATEGEORY III AND IV BUILIDINGS AND OTHER STRUCTURES



125

1. All areas with full exposure to ocean winds shall be designed ~~105~~ mph areas.
2. Areas in Multnomah and Hood River Counties with full exposure to Columbia River Gorge winds shall be designed ~~105~~ mph areas.

125

125

~~105~~ mph

~~95~~ mph**115**

~~85~~ mph

100

For SI: 1 mile per hour = 0.44 m/s

FIGURE 1609**C**

~~BASIC WIND SPEED (3-SECOND GUST) IN MILES PER HOUR (×1.61 for km/h)~~

ULTIMATE DESIGN WIND SPEED, V_{ULT} FOR RISK CATEGEORY I BUILIDINGS AND OTHER STRUCTURES

1610.1 General.

Foundation walls and retaining walls shall be designed to resist lateral soil loads. Soil loads specified in Table 1610.1 shall be used as the minimum design lateral soil loads unless determined otherwise by a geotechnical investigation in accordance with Section 1803. Foundation walls and other walls in which horizontal movement is restricted at the top shall be designed for at-rest pressure. Retaining walls free to move and rotate at the top shall be permitted to be designed for active pressure. Design lateral pressure from surcharge loads shall be added to the

lateral earth pressure load. Design lateral pressure shall be increased if soils at the site are expansive **or the retaining wall will support an ascending backfill slope**. Foundation walls shall be designed to support the weight of the full hydrostatic pressure of un-drained backfill unless a drainage system is installed in accordance with Sections 1805.4.2 and 1805.4.3.

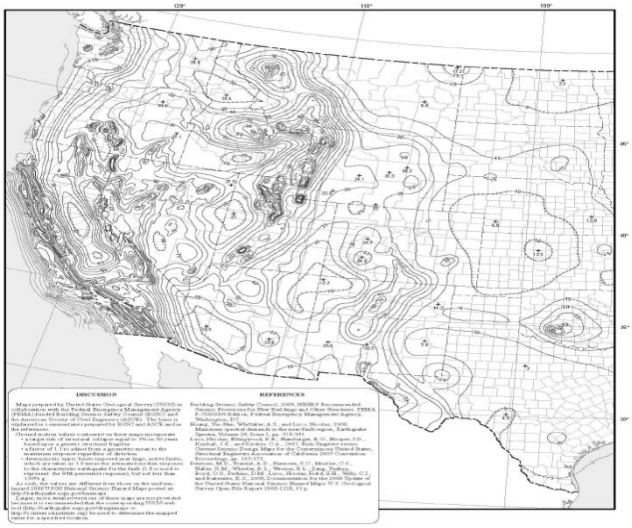
Exception: Foundation walls extending not more than 8 feet (2438 mm) below grade and laterally supported at the top by flexible diaphragms shall be permitted to be designed for active pressure.

1612.3 Establishment of flood hazard areas.
~~To establish *flood hazard areas*, the applicable~~ **Where the local** governing authority ~~shall~~ **has** adopt**ed** a flood hazard map and supporting data **the structure design and construction shall be in conformance with Section 1612.4**. ~~The flood hazard map shall include, at a minimum, areas of special flood hazard as identified by the Federal Emergency Management Agency in an engineering report entitled "The Flood Insurance Study for **[INSERT NAME OF JURISDICTION],**" dated **[INSERT DATE OF ISSUANCE],** as amended or revised with the accompanying Flood Insurance Rate Map (FIRM) and Flood Boundary and Floodway Map (FBFM) and related supporting data along with any revisions thereto. The adopted flood hazard map and supporting data are hereby adopted by reference and declared to be part of this section.~~

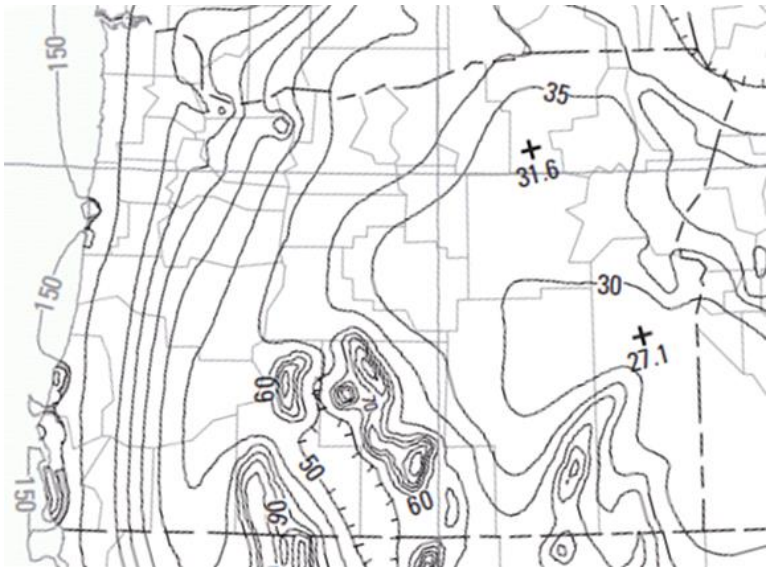
~~**1612.3.1 Design flood elevations.** Where design flood elevations are not included in the flood hazard areas established in Section 1612.3, or where floodways are not designated, the building official is authorized to require the applicant to:~~
~~1. Obtain and reasonably utilize any design flood elevation and floodway data available from a federal, state or other source; or~~
~~2. Determine the design flood elevation and/or floodway in accordance with accepted hydrologic and hydraulic engineering practices used to define special flood hazard areas. Determinations shall be undertaken by a registered design professional who shall document that the technical methods used reflect currently accepted engineering practice.~~

~~**1612.3.2 Determination of impacts.** In riverine flood hazard areas where design flood elevations are specified but floodways have not been designated, the applicant shall provide a floodway analysis that demonstrates that the proposed work will not increase the design flood elevation more than 1 foot (305 mm) at any point within the jurisdiction of the applicable governing authority.~~

1612.4 Design and construction. The design and construction of buildings and structures located in flood hazard areas **as established by the Flood Plain Administrator**, including flood hazard areas subject to high-velocity wave action, shall be in accordance with Chapter 5 of ASCE 7 and with ASCE 24.

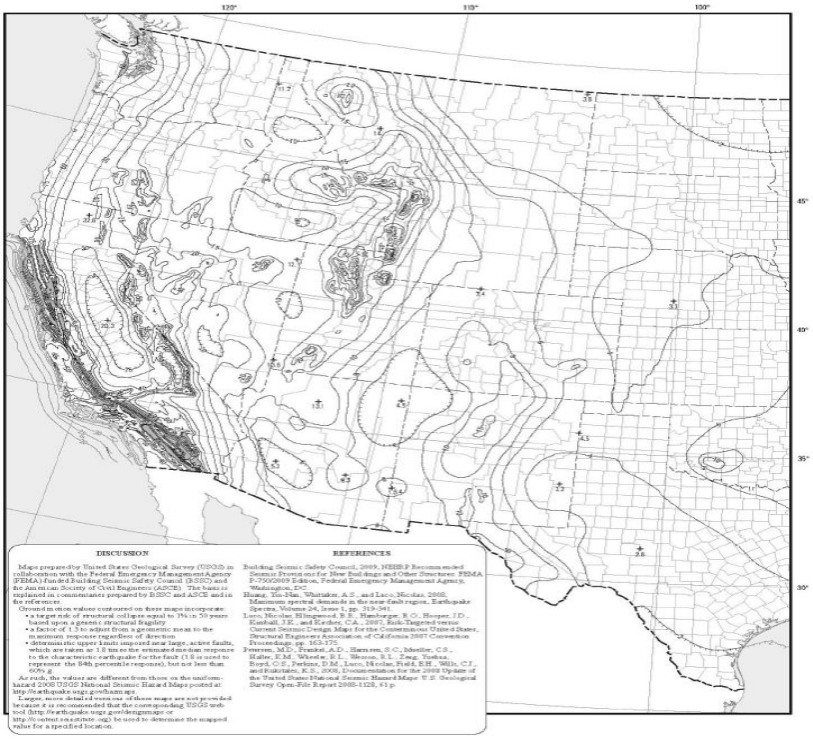


~~**Overall map to be replaced**~~

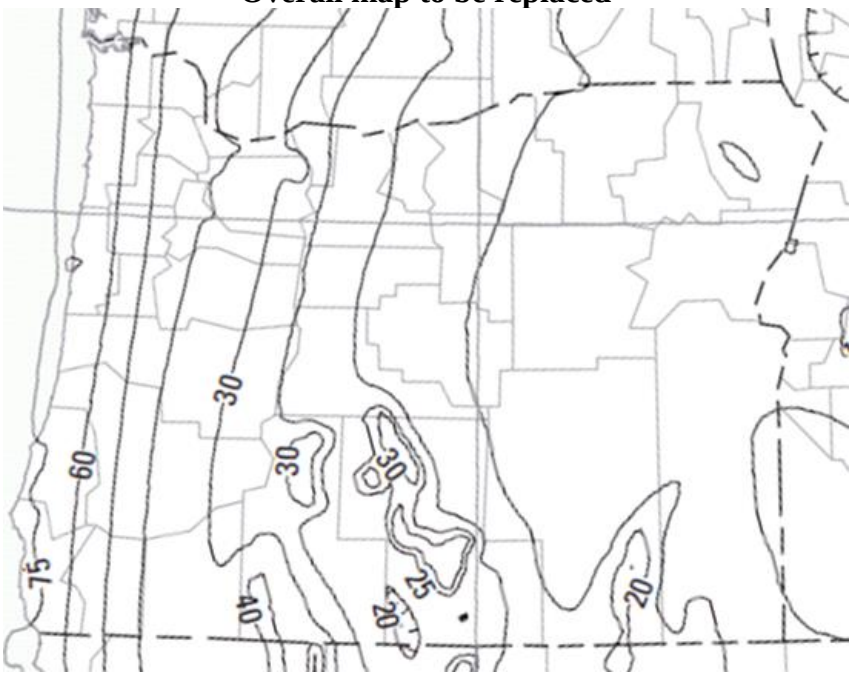


Enlarged map to replace overall map

FIGURE 1613.3.1(1)
RISK-TARGETED MAXIMUM CONSIDERED EARTHQUAKE (MCE$_R$) GROUND MOTION RESPONSE ACCELERATIONS FOR THE CONTERMINOUS UNITED STATES OF 0.2-SECOND SPECTRAL RESPONSE ACCELERATION (5% OF CRITICAL DAMPING), SITE CLASS B



~~Overall map to be replaced~~



Enlarged map to replace overall map

FIGURE 1613.3.1(2)
RISK-TARGETED MAXIMUM CONSIDERED EARTHQUAKE (MCE$_R$) GROUND MOTION RESPONSE ACCELERATIONS FOR THE CONTERMINOUS UNITED STATES OF 1-SECOND SPECTRAL RESPONSE ACCELERATION (5% OF CRITICAL DAMPING), SITE CLASS B

1613.3.1 Mapped acceleration parameters. The parameters S_s, and S_i shall be determined from the 0.2 and 1-second spectral response accelerations shown on Figures 1613.3.1(1) ~~through~~ **and** 1613.3.1(~~6~~2) **by using the USGS U.S. Seismic Design Maps Web Application**

(http://geohazards.usgs.gov/designmaps/us/application.php) and selecting 2012 IBC as the Design Code Reference Document. Where S_1 is less than or equal to 0.04 and S_s is less than 0.15, the structure is permitted to be assigned to Seismic Design Category A. ~~The parameters S_s and S_1 shall be, respectively, 1.5 and 0.6 for Guam and 1.0 and 0.4 for American Samoa.~~

1613.3.5.1 Alternative seismic design category determination. Where S1 is less than 0.75, the seismic design category is permitted to be determined from Table 1613.3.5(1) alone when all of the following apply:

1. In each of the two orthogonal directions, the approximate fundamental period of the structure, Ta, in each of the two orthogonal directions determined in accordance with Section 12.8.2.1 of ASCE 7, is less than 0.8 T_s determined in accordance with Section 11.4.5 of ASCE 7.
2. In each of the two orthogonal directions, the fundamental period of the structure used to calculate the story drift is less than T_s.
3. Equation 12.8-2 of ASCE 7 is used to determine the seismic response coefficient, Cs.
4. The diaphragms are rigid **or are permitted to be idealized as rigid in accordance with** ~~as defined~~ in Section 12.3.1 of ASCE 7 or, for diaphragms ~~that are flexible~~, **permitted to be idealized as flexible in accordance with Section 12.3.1 of ASCE 7**, the distances between vertical elements of the seismic force-resisting system do not exceed 40 feet (12 192 mm).

1613. 5 Modifications to ASCE 7-10.

1613.5.1 ASCE 7-10, Section 12.2.3.2, Item e. Modify ASCE 7-10, Section 12.2.3.2, Item e to read as follows:

e. The upper portion is analyzed with the equivalent lateral force or modal response spectrum procedure, and the lower portion is analyzed with the equivalent lateral force procedure. The lower rigid portion, analyzed independently, need not comply with the structural characteristic limitations of ASCE 7, Table 12.6-1.

1613.5.2 ASCE 7-10,Table 12.2-1.Modify Note j as follows:

Steel ordinary concentrically braced frames are permitted in penthouse structures not exceeding 20 feet in height (6.07 m), and in single story buildings up to a height of 60 feet (18.3 m), provided the total seismic mass tributary to the roof, including the mass of the walls, does not exceed 20 psf (0.96 kN/m2). The mass of the wall included in the 20 psf (0.96 kN/m2) noted above shall be the seismic mass of the wall tributary to the roof divided by the roof area. Additionally, the weight of the exterior wall more than 35 feet (10.6 m) above the base and tributary to the braced frame shall not exceed 20 psf (0.96 kN/m2).

1613.5.3 ASCE 7-10, Section 12.2.5.6. Modify ASCE 7, Section 12.2.5.6 to read as follows:

12.2.5.6 Single story steel ordinary and intermediate moment frames in structures assigned to Seismic Design Category D or E. Single story steel ordinary moment frames and intermediate moment frame in structures assigned to Seismic Design Category D or E are permitted up to a height of 65 feet (20 m) provided the total seismic mass tributary to the roof including the mass of walls does not exceed 20 psf (0.96 kN/m2). The mass of the wall included in the 20 psf (0.96 kN/m2) noted above shall be the seismic mass of the wall tribuatry to the roof divided by the roof area. Additionally, the weight of the exterior wall more than 35 feet (10.6 m) above the base and tribuatry to the moment frame shall not exceed 20 psf (0.96 kN/m2).

1613.5. 4 ASCE7-10 Section 12.2.5.7. Modify ASCE 7, Section 12.2.5.7 to read as follows:

12.2.5.7 Other steel ordinary and intermediate moment frames in structures assigned to Seismic Design Category D or E. Steel ordinary moment frames in structures assigned to Seismic Design Category D or E not meeting the limitations set forth in Section 12.2.5.6 are permitted in penthouse structures not exceeding 20 feet (6.07 m) in height and within light-frame construction up to 35 feet (10.6 m) provided neither the roof nor the floor dead load supported by and tributary to the moment frames exceeds 35 psf (1.68 KN/m2). Additionally, tributary to the moment frame shall not exceed 20 psf (0.96kN/m2). Steel intermediate moment frames in structures assigned to Seismic Design Category D or E not meeting the limitations set forth in Section 12.2.5.6 are permitted as follows:

1. In Seismic Design Category D, intermediate moment frames are permitted to a height of 35 feet (10.6m).

2. In Seismic Decsign Category E, intermediate moment frames are permitted to a height of 35 feet (10.6 m), provided neither the roof nor the floor dead load supported by and tributary to the moment frames exceeds 35 psf (1.68 kN/m2). Additionally, the dead load of the exterior walls tributary to the moment frame shall not exceed 20 psf (0.96 kN/m2).

1613.5.5 Clarification of component anchorage requirements. Modify Exception 6 of ASCE 7-10, Section 13.1.4 to read as follows:

6. Mechanical and electrical components in Seismic Design Categories D, E and F where all the following conditions apply:

a. The component importance factor, Ip, is equal to 1.0 and both of

b. Flexible connections between the components and associated ductwork, piping and conduit are provided; and either

i. Components are mounted at 4 feet (1.22 m) or less above a floor or roof level and weigh 400 pounds (1780 N) or less.

ii. The components weigh 75 pounds (333 N) or less or, for distribution systems, weighing 5lb/ft (73 N/ft) or less.

1613.5.6 Delete ASCE 7-10, Table 12.2-1 Item C.12 and delete footnotes o and p:

~~12. Cold Formed steel special belted moment frame[p]~~	~~14.1~~	~~3 ½~~	~~3[o]~~	~~3 ½~~	~~35~~	~~35~~	~~35~~	~~35~~	~~35~~

~~o. Alternatively, the seismic load effect with overstrength, E_{mh}, is permitted to be based on the expected strength determined in accordance with AISI S110~~

~~p. Cold formed steel special bolted moment frames shall be limited to one story in height in accordance with AISI S110.~~

1613.5.7 ASCE 7-10, Section 12.2.3.2, Item e. Modify ASCE 7-10, Section 12.2.3.2, Item e to read as follows:

e. The upper portion is analyzed with the equivalent lateral force or modal response spectrum procedure, and the lower portion is analyzed with the equivalent lateral force procedure. The lower rigid portion, analyzed independently, need not comply with the structural characteristic limitations of ASCE 7, Table 12.6-1.

1613.5.8 ASCE 7-10, Modify Table 12.2-1 Item G.2 and add footnote q as follows:

2. Steel Ordinary Cantilever Column Systems	**14.1**	**1 ¼**	**1 ¼**	**1 ¼**	**35**	**35**	**NP[iq]**	**NP[iq]**	**NP[iq]**

q. Single-story steel ordinary cantilever column systems in structures assigned to Seismic Design Category D, E or F are permitted in penthouse structures not exceeding 20 feet (6.07 m) in height and in single story buildings up to a structural height h_n, of 35ft (10.67m) provided the total effective seismic weight tributary to the roof including the weight of walls does not exceed 20psf (0.96 kN/m^2). The weight of the wall included in the 20psf (0.96 kN/m^2) noted above shall be the seismic weight of the wall tributary to the roof divided by the roof area.

1613.5.9 Modify ASCE 7-10, Section 12.2.5.6 Steel Ordinary Moment Frames Sub-section 12.2.5.6.1

12.2.5.6.1 Seismic Design Category D or E

a. Single-story steel ordinary moment frames in structures assigned to Seismic Design Category D or E are permitted in penthouses not exceeding 20ft (6.07m) in height and in buildings up to a structural height h_n, of 65ft (20m) provided the total effective seismic weight tributary to the roof including the weight of walls does not exceed 20 psf (0.96 kN/m^2). The weight of the wall

included in the 20 psf (0.96 kN/m^2) noted above shall be the seismic weight of the wall tributary to the roof divided by the roof area. In addition the weight of the exterior wall more than 35ft (10.6m) above the base and tributary to the moment frame shall not exceed 20 psf (0.96 kN/
Exception : Single-story structures with steel ordinary moment frames whose purpose is to enclose equipment or machinery (including cranes) and whose occupants are engaged in maintenance or monitoring of that equipment, machinery, or their associated processes shall be permitted to be of unlimited height provided the total effective seismic weight tributary to the roof, including contribution from walls, equipment or machinery, does not exceed 20 psf (0.96 kN/m^2) over the area of the roof. In addition, the dead load of the exterior wall system including exterior columns more than 35ft (10.6m) above the base shall not exceed 20 psf (0.96 kN/m^2). For determining compliance with effective seismic weight limitations of the roof and exterior walls, equipment and machinery, including cranes, not self supporting for all loads, shall be treated as fully tributary to either the roof or adjacent exterior wall (but not both) when located in an exterior bay, or as fully tributary to the adjacent roof when located in an interior bay. The tributary area used for weight distribution of equipment and machinery shall not exceed 600 ft^2(55.8m^2).

1613.5.10 Modify ASCE 7-10, Section 12.2.5.6 Steel Ordinary Moment Frames
Sub-section 12.2.5.6.2

12.2.5.6.2 Seismic Design Category F. Single-story steel ordinary moment frames in structures assigned to Seismic Design category F are permitted in penthouses not exceeding 20ft (6.07m) in height and in buildings up to a structural height h_n, of 65ft (20m) provided the total effective seismic weight tributary to the roof including the weight of walls does not exceed 20psf (0.96kN/m^2). The weight of the wall included in the 20psf (0.96 kN/m^2) noted above shall be the seismic weight of the wall tributary to the roof divided by the roof area. In addition the weight of the exterior wall more than 35ft (10.6m) above the base and tributary to the moment frame shall not exceed 20 psf (0.96 kN/m^2)

1613.5.11 Modifications to ASCE 7-10, ASCE 7-10 Table 12.2-1 footnote (j). Modify ASCE 7-10, Table 12.2-1 footnote (j) to read as follows:

j. Steel ordinary concentrically braced frames are permitted in penthouses not exceeding 20ft (6.07m) in height and in single-story buildings up to a structural height h_n, of 60ft (18.3m) provided the total effective seismic weight tributary to the roof including the weight of walls does not exceed 20psf (0.96kN/m^2). The weight of the wall included in the 20psf (0.96 kN/m^2) noted above shall be the seismic weight of the wall tributary to the roof divided by the roof area. In addition the weight of the exterior wall more than 35ft (10.6m) above the base and tributary to the braced frame shall not exceed 20 psf (0.96 kN/m^2)

1613.5.12 Modifications to ASCE 7-10, 12.2.5.7 Steel Intermediate Moment Frames
Section 12.2.5.7.1, 12.2.5.7.2 and 12.2.5.7.3:
Modify ASCE 7, Section 12.2.5.7.1

12.2.5.7.1 Seismic Design Category D

a. Single-story steel intermediate moment frames in structures assigned to Seismic Design Category D or E are permitted in penthouses not exceeding 20ft (6.07m) in height and in buildings up to a structural height h_n, of 65ft (20m) provided the total effective seismic weight tributary to the roof including the weight of walls does not exceed 20psf (0.96 kN/m^2). The weight of the wall included in the 20psf (0.96 kN/m^2) noted above shall be the seismic weight of the wall tributary to the roof divided by the roof area. In addition the weight of the exterior wall more than 35ft (10.6m) above the base and tributary to the moment frame shall not exceed 20psf (0.96 kN/m^2).

Exception : Single-story structures with steel intermediate moment frames whose purpose is to enclose equipment or machinery (including cranes) and whose occupants are engaged in maintenance or monitoring of that equipment, machinery, or their associated processes shall be

permitted to be of unlimited height provided the total effective seismic weight tributary to the roof, including contribution from walls, equipment or machinery, does not exceed 20 psf (0.96 kN/m^2) over the area of the roof. In addition, the dead load of the exterior wall system including exterior columns more than 35ft (10.6 m) above the base shall not exceed 20 psf (0.96 kN/m^2). For determining compliance with effective seismic weight limitations of the roof and exterior walls, equipment and machinery, including cranes, not self supporting for all loads, shall be treated as fully tributary to either the roof or adjacent exterior wall (but not both) when located in an exterior bay, or as fully tributary to the adjacent roof when located in an interior bay. The tributary area used for weight distribution of equipment and machinery shall not exceed 600 ft^2(55.8m^2).

Modify ASCE 7, Section 12.2.5.7.2

12.2.5.7.2 Seismic Design Category E.

Single-story steel intermediate moment frames in structures assigned to Seismic Design Category E are permitted in penthouses not exceeding 20ft (6.07m) in height and in buildings up to a structural height hn, of 65ft (20m) provided the total effective seismic weight tributary to the roof including the weight of walls does not exceed 20 psf (0.96kN/m^2). The weight of the wall included in the 20 psf (0.96 kN/m^2) noted above shall be the seismic weight of the wall tributary to the roof divided by the roof area. In addition the weight of the exterior wall more than 35ft (10.6m) above the base and tributary to the moment frame shall not exceed 20 psf(0.96 kN/m^2)

Exception: Single-story structures with steel intermediate moment frames whose purpose is to enclose equipment or machinery (including cranes) and whose occupants are engaged in maintenance or monitoring of that equipment, machinery, or their associated processes shall be permitted to be of unlimited height provided the total effective seismic weight tributary to the roof, including contribution from walls, equipment or machinery, does not exceed 20 psf (0.96 kN/m^2) over the area of the roof. In addition, the dead load of the exterior wall system including exterior columns more than 35ft (10.6 m) above the base shall not exceed 20 psf (0.96 kN/m^2). For determining compliance with effective seismic weight limitations of the roof and exterior walls, equipment and machinery, including cranes, not self supporting for all loads, shall be treated as fully tributary to either the roof or adjacent exterior wall (but not both) when located in an exterior bay, or as fully tributary to the adjacent roof when located in an interior bay. The tributary area used for weight distribution of equipment and machinery shall not exceed 600 ft^2(55.8m^2).

Modify ASCE 7, Section 12.2.5.7.3

12.2.5.7.3 Seismic Design Category F.

Single-story steel intermediate moment frames in structures assigned to Seismic Design Category F are permitted in penthouses not exceeding 20ft (6.07m) in height and in buildings up to a structural height hn, of 65ft (20m) provided the total effective seismic weight tributary to the roof including the weight of walls does not exceed 20psf (0.96kN/m^2). The weight of the wall included in the 20 psf (0.96 kN/m^2) noted above shall be the seismic weight of the wall tributary to the roof divided by the roof area. In addition the weight of the exterior wall more than 35ft (10.6m) above the base and tributary to the moment frame shall not exceed 20 psf (0.96 kN/m^2)

1613.5.13 ASCE 7-10, Modify ASCE 7-10, Section 12.7.2 Item 1

1. In areas used for storage, or in library stack rooms, a minimum of 25 percent of the floor live load shall be included.

Exceptons:

a. Where the inclusion of storage loads or library stack loads adds no more than 5% to the effective seismic weight at that level, it need not be included in the effective seismic weight.

b. Floor live load in public garages and open parking structures need not be included.

1613.5.14 ASCE 7-10, Modify ASCE 7-10, Section 12.14.8.1 Item 1

1. In areas used for storage, or in library stack rooms, a minimum of 25 percent of the floor live load shall be included.

Exceptions:

a. **Where the inclusion of storage loads or library stack loads adds no more than 5% to the effective seismic weight at that level, it need not be included in the effective seismic weight.**

b. **Floor live load in public garages and open parking structures need not be included.**

1613.5.15 ASCE 7-10, Section 13.4
Modify ASCE 7-10, Section 13.4 NONSTRUCTURAL COMPONENT ANCHORAGE

Nonstructural components and their supports shall be attached (or anchored) to the structure in accordance with the requirements of this section and the attachment shall satisfy the requirements for the parent material as set forth elsewhere in this standard.

Component attachments shall be bolted, welded, or otherwise positively fastened without consideration of frictional resistance produced by the effects of gravity. A continuous load path of sufficient strength and stiffness between the component and the supporting structure shall be provided. Local elements of the structure including connections shall be designed and constructed for the component forces where they control the design of the elements or their connections. The component forces shall be those determined in section 13.3.1, except that modifications to F_p and R_p due to anchorage conditions need not be considered. The design documents shall include sufficient information relating to the attachments to verify compliance with the requirements of this section.

Exception : Solar PV panels or modules installed on a roof as a ballasted system need not be rigidly attached to the roof or supporting structure . Ballasted systems shall be designed to resist sliding and uplift resulting from lateral and vertical forces using a coefficient of friction determined by acceptable engineering practices. In sites where the seismic design category is C or above, the system shall be designed to accommodate seismic displacement determined by approved analysis or shake-table testing, using input motions consistent with ASCE 7 lateral and vertical seismic forces for non-structural components on roofs.

1613.5.16 ASCE 7-10, Section 15.4.3, Modify ASCE 7-10, Section 15.4.3
The seismic effective weight W for non-building structures shall include the dead load and other loads as defined for structures in Section 12.7.2. For purposes of calculating design seismic forces in non-building structures, W also shall include all normal operating contents for items such as tanks, vessels, bins, hoppers, and the contents of piping. W shall include 20 percent of snow or ice loads where the flat roof snow load, P_f, or weight of ice, D_i, exceeds 30 psf (1.44 kN/m^2), regardless of actual roof or top of structure slope.

1613.5.17 ASCE 7, Section 15.6.1, Modify ASCE 7, Section 15.6.1 Paragraph 2
The risk category shall be determined by the proximity of the earth-retaining structure to other buildings and structures. If failure of the earth-retaining structure would affect the adjacent building or structure, the risk category shall not be less than that of the adjacent building or structure. Earth-retaining walls are permitted to be designed for seismic loads as either yielding or non-yielding walls. Cantilevered reinforced concrete or masonry retaining walls shall be assumed to be yielding walls and shall be designed as simple flexural wall elements.

1705.2 Steel construction.

The *special inspections* for steel elements of buildings and structures shall be as required in this section.

Exception: *Special inspection* of the steel fabrication process shall not be required where the fabricator does not perform any welding, thermal cutting or heating operation of any kind as part of the fabrication process. In such cases, the fabricator shall be required to submit a detailed procedure for material control that demonstrates the fabricator's ability to maintain suitable records and procedures such that, at any time during the fabrication process, the material specification, and grade for the main stress-carrying elements are capable of being determined. Mill test reports shall be identifiable to the main stress-carrying elements when required by the approved construction documents.

1705.2.1 Structural steel.

Special inspection for structural steel shall be in accordance with the quality assurance inspection requirements of AISC 360.

1705.2.2 Steel construction other than structural steel.

Special inspection for steel construction other than structural steel shall be in accordance with Table 1705.2.2 and this section.

TABLE 1705.2.2
REQUIRED VERIFICATION AND INSPECTION OF STEEL CONSTRUCTION OTHER THAN STRUCTURAL STEEL

VERIFICATION AND INSPECTION	CONTINUOUS		PERIODIC	REFERENCED STANDARD[a]
1. Material verification of cold-formed steel deck:				
a. Identification markings to conform to ASTM standards specified in the approved construction documents.	—		X	Applicable ASTM material standards
b. Manufacturer's certified test reports.	—		X	-
2. Inspection of welding:				
a. Cold-formed steel deck:				
1) Floor and roof deck welds.	—		X	AWS D1.3
b. Reinforcing steel:	-		-	-
1) Verification of weldability of reinforcing steel other than ASTM A 706.	—		X	AWS D1.4 ACI 318: Section 3.5.2
2) Reinforcing steel resisting flexural and axial forces in intermediate and special moment frames, and boundary elements of special structural walls of concrete and shear reinforcement.		X	—	
3) Shear reinforcement.		X	—	
4) Other reinforcing steel.		—	X	

For SI: 1 inch = 25.4 mm.

a. Where applicable, see also Section 1705.11, Special inspections for seismic resistance.

1705.2.2.1 Welding.

Welding inspection and welding inspector qualification shall be in accordance with this section.

1705.2.2.1.1 Cold-formed steel.

Welding inspection and welding inspector qualification for cold-formed steel floor and roof decks shall be in accordance with AWS D1.3.

~~**1705.2.2.1.2 Reinforcing steel.**~~

~~Welding inspection and welding inspector qualification for reinforcing steel shall be in accordance with AWS D1.4 and ACI 318.~~

~~**1705.2.2.2 Cold-formed steel trusses spanning 60 feet or greater.**~~

~~Where a cold-formed steel truss clear span is 60 feet (18 288 mm) or greater, the special inspector shall verify that the temporary installation restraint/bracing and the permanent individual truss member restraint/bracing are installed in accordance with the *approved* truss submittal package.~~

1705.2 Steel construction. The *special inspections* for steel elements of buildings and structures shall be as required by Section 1705.2 and Table 1705.2.

Exceptions:

1. **Special inspection of the steel fabrication process shall not be required where the fabricator does not perform any welding, thermal cutting or heating operation of any kind as part of the fabrication process. In such cases, the fabricator shall be required to submit a detailed procedure for material control that demonstrates the fabricator's ability to maintain suitable records and procedures such that, at any time during the fabrication process, the material specification, grade and mill test reports for the main stress-carrying elements are capable of being determined.**
2. **The special inspector need not be continuously present during welding of the following items, provided the materials, welding procedures and qualifications of welders are verified prior to the start of the work; periodic inspections are made of the work in progress and a visual inspection of all welds is made prior to completion or prior to shipment of shop welding.**
   - **2.1. Single-pass fillet welds not exceeding 5/16 inch (7.9 mm) in size.**
   - **2.2. Floor and roof deck welding.**
   - **2.3. Welded studs when not installed with an automatically timed stud welding machine in accordance with Section 7 of AWS D1.1.**
   - **2.4. Welded sheet steel for cold-formed steel members.**
   - **2.5. Welding of stairs and railing systems.**
3. **For welded studs installed with an automatically timed stud welding machine and in accordance with Section 7 of AWS D1.1; the special inspector need not be continuously present during installation of welded studs subject to the following provisions:**
   - **3.1. The special inspector shall perform a visual inspection of all welded studs in accordance with Sections 7 and 7.8.1 of AWS D1.1. Visual inspection of welded studs installed with an automatically timed stud welding machine may take place either in the fabrication shop p1ior to completion or prior to shipment, or on-site prior to coverage.**
   - **3.2. The fabricator shall submit a certificate of compliance to the building official stating that the work was performed in accordance with the approved construction documents.**

1705.2.1 Structural steel. Special inspection for structural steel shall be in accordance with the quality assurance inspection requirements of AISC 360.

Exception:The following provisions in AISC 360, Chapter N, are not adopted:

- **N4, Item 2. (Quality Assurance Inspector Qualifications)**
- **N5, Item 2. (Quality Assurance)**
- **N5, Item 3. (Coordinated Inspection)**
- **N5, Item 4. (Inspection of Welding)**
- **N7 (Approved Fabricators and Erectors)**
- **N8 (Nonconforming Material and Workmanship)**

1705.2.1.1 High strength bolting.

In addition to the quality assurance inspection requirements contained in AISC 360, Section N5, Item 6 (Inspection of High Strength Bolting), the requirements of Table 1705.2 of the Oregon Structural Specialty Code shall apply.

1705.2.1.2 Composite construiction.

In addition to the quality assurance requirements contained in AISC 360, Section N6 (Minimum Requirements for Inspection of Composite Construction), the requirements of Table 1705.2 of the Oregon Structural Specialty Code shall apply.

1705.2.2 Steel construction other than structural steel.
Special inspection for steel construction other than structural steel shall be in accordance with Table 1705.2 and this section.

1705.2.2.1 Welding. Welding inspection and welding inspector qualification shall be in accordance with this section.

1705.2.2.1.1 Cold-formed steel. Welding inspection and welding inspector qualification for cold-formed steel floor and roof decks shall be in accordance with AWS D1.3.

1705.2.2.1.2 Reinforcing steel. Welding inspection and welding inspector qualification for reinforcing steel shall be in accordance with AWS D1.4 and ACI 318.

1705.2.2.2 Cold-formed steel trusses spanning 60 feet or greater. Where a cold-formed steel truss clear span is 60 feet (18 288 mm) or greater, the special inspector shall verify that the temporary installation restraint/bracing and the permanent individual truss member restraint/bracing are installed in accordance with the *approved* truss submittal package.

TABLE 1705.2
REQUIRED VERIFICATION AND INSPECTION OF STEEL CONSTRUCTION

VERIFICATION AND	CONTINUOUS	PERIODIC	REFERENCED STANDARD
1. Material verification of high-strength bolts, nuts and washers:			
a. Identification markings to conform to ASTM standards and specified in the approved construction documents.	—	X	AISC 360, Section A3.3 and Applicable ASTM material standards
b. Manufacturer's certificate of compliance required.	—	X	—
2. Inspection of high-strength bolting:			
a. Snug-tight joints.	—	X	AISC 360, Section M2.5
b. Pretensioned and slip-critical joints using turn-of-nut with matchmarking, twist-off bolt or direct tension indicator methods of installation	—	X	
c. Pretensioned and slip-critical joints using turn-of-nut without matchmarking or calibrated wrench methods of installation.	X	—	
3. Material verification of structural steel			
a. For structural steel, identification markings to conform to AISC 360.	—	X	AISC 360, Section M5.5
b. For other steel, identification markings to conform to ASTM standards specified in the approved construction documents.	—	X	Applicable ASTM material standards
c. Manufacturer's certified test reports.	—	X	
4. Material verification of cold-formed steel deck:			
a. Manufacturer's certified test reports.	—	X	—

5. Material verification of weld filler materials:			
a. Identification markings to conform to AWS specification in the approved construction documents.	—	**X**	**AISC 360, Section A3.5 and applicable AWS A5 documents**
b. Manufacturer's certificate of compliance required.	—	**X**	—
6. Inspection of welding:			
a. Structural steel and cold-formed steel deck:			
1) Complete and partial joint penetration groove welds.	**X**	—	**AWS D1.1**
2) Multipass fillet welds.	**X**	—	
3) Single-pass fillet welds>5/16"	**X**	—	
4) Plug and slot welds.	**X**	—	
5) Single-pass fillet welds ≤ 5/16"	—	**X**	
6) Floor and roof deck welds.	—	**X**	**AWS D1.3**
b. Reinforcing steel:			
1) Verification of weldability of reinforcing steel other than ASTM A 7 06.	—	**X**	**AWS D1.4 ACI318: Section3.5.2**
2) Reinforcing steel resisting flexural and axial forces in intermediate and special moment frames, and boundary elements of special structural walls of concrete and shear reinforcement.	**X**	—	
3) Shear reinforcement.	**X**	—	
4) Other reinforcing steel.	—	**X**	
7. Inspection of steel frame joint details for compliance:			
a. Details such as bracing and stiffening.	—	**X**	—
b. Member locations.	—	**X**	
c. Application of joint details at each connection.	—	**X**	

For SI: 1 inch = 25.4 mm.
a. Where applicable, see also Section 1705.11, Special inspections for seismic resistance.

1705.11 Special inspections for seismic resistance.
Special inspections **for structures in** ~~Occupancy~~ **Risk Categories III and IV** itemized in Sections 1705.11.1 through 1705.11.8, unless exempted by the exceptions of Section 1704.2, are required for the following:

1. The seismic force-resisting systems in structures assigned to *Seismic Design Category* C, D, E or F in accordance with Sections 1705.11.1 through 1705.11.3, as applicable.
2. Designated seismic systems in structures assigned to *Seismic Design Category* C, D, E or F in accordance with Section 1705.11.4.
3. Architectural, mechanical and electrical components in accordance with Sections 1705.11.5 and 1705.11.6.
4. Storage racks in structures assigned to *Seismic Design Category* D, E or F in accordance with Section 1705.11.7.
5. Seismic isolation systems in accordance with Section 1705.11.8.

Exception: Special inspections **for structures in** ~~Occupancy~~ **Risk Categories III and IV** itemized in Sections 1705.11.1 through 1705.11.8 are not required for structures designed and constructed in accordance with one of the following:

1. The structure consists of light-frame construction; the design spectral response acceleration at short periods, S_{DS}, as determined in Section 1613.3.1 does not exceed 0.5; and the building height of the structure does not exceed 35 feet (10 668 mm).
2. The seismic force-resisting system of the structure consists of reinforce masonry or reinforced concrete, the design spectral response acceleration at short periods, S_{DS}, as determined in Section 1613.3.4, does not exceed 0.5, and the building height of the structure does not exceed 25 feet (7620 mm).
3. ~~The structure is a detached one- or two-family dwelling not exceeding two *stories above grade plane* and does not have any of the following horizontal or vertical irregularities in accordance with Section 12.3 of ASCE 7:~~
    - ~~3.1. Torsional or extreme torsional irregularity.~~
    - ~~3.2. Nonparallel systems irregularity.~~
    - ~~3.3. Stiffness-soft story or stiffness-extreme soft story irregularity.~~
    - ~~3.4. Discontinuity in lateral strength-weak story irregularity.~~

1705.11.1 Structural steel. *Special inspection* for structural steel shall be in accordance with the quality assurance plan requirements of AISC 341. **In addition to the quality assurance requirements contained in AISC 341, Chapter J, Section J5 (Inspection Tasks), the requirements of Section 1705.2 and Table 1705.2 of the Building Code shall apply.**

Exceptions:

1. *Special inspections* of structural steel in structures assigned to *Seismic Design Category* C that are not specifically detailed for seismic resistance, with a response modification coefficient, *R*, of 3 or less, excluding cantilever column systems.
2. **For ordinary moment frames, ultrasonic and magnetic particle testing of complete joint penetration groove welds are only required for demand critical welds.**

1803.5.12 Seismic Design Categories D through F.

For structures assigned to *Seismic Design Category* D, E or F, the geotechnical investigation required by Section 1803.5.11 shall also include all of the following as applicable:

1. The determination of dynamic seismic lateral earth pressures on foundation walls and retaining walls supporting more than 6 feet (1.83 m) of backfill height due to design earthquake ground motions. **When the Mononobe-Okabe method is used to calculate the active dynamic seismic lateral earth pressure, a horizontal acceleration coefficient equal to or greater than one-half (0.5) the design peak horizontal ground acceleration shall be used.**

1804.4 Grading and fill in flood hazard areas.

Grading and/or fill shall be approved by the Flood Plain Administrator.

~~In *flood hazard areas* established by the local jurisdiction in Section 1612.3, grading and/or fill shall not be approved by the local governing authority.~~

~~1. Unless such fill is placed, compacted and sloped to minimize shifting, slumping and erosion during the rise and fall of flood water and, as applicable, wave action.~~

~~2. In floodways, unless it has been demonstrated through hydrologic and hydraulic analyses performed by a registered design professional in accordance with standard engineering practice that the proposed grading or fill, or both, will not result in any increase in flood levels during the occurrence of the design flood.~~

~~3. In flood hazard areas subject to high-velocity wave action, unless such fill is conducted and/or placed to avoid diversion of water and waves toward any building or structure.~~

~~4. Where design flood elevations are specified but floodways have not been designated, unless it has been demonstrated that the cumulative effect of the proposed flood hazard area encroachment, when combined with all other existing and anticipated flood hazard area encroachment, will not increase the design flood elevation more than 1 foot (305 mm) at any point.~~

~~**1805.1.2.1 Flood hazard areas.** For buildings and structures in flood hazard areas as established in Section 1612.3, the finished ground level of an under-floor space such as a crawlspace shall be equal to or higher than the outside finished ground level on at least one side.~~

~~**Exception:** Under-floor spaces of Group R-3 buildings that meet the requirements of FEMA/FIA-TB-11.~~

CHAPTER 21
MASONRY

2107.2 TMS 402/ACI 530/ASCE 5, Section ~~2.1.8.7.1.1~~2.1.7.7.1.1, lap splices.
In lieu of Section ~~2.1.8.7.1.1~~ **2.1.7.7.1.1**, it shall be permitted to design lap splices in accordance with Section 2107.2.1.

2107.2.1 Lap splices.
The minimum length of lap splices for reinforcing bars in tension or compression, l_d, shall be

$l_d = 0.002 d_b f_s$	**(Equation 21-1)**

For SI: $l_d = 0.29 d_b f_s$
but not less than 12 inches (305 mm) **and need not be greater than $72d_b$**. In no case shall the length of the lapped splice be less than 40 bar diameters.
where: d_b = Diameter of reinforcement, inches (mm).

f_s = Computed stress in reinforcement due to design loads, psi (MPa).

In regions of moment where the design tensile stresses in the reinforcement are greater than 80 percent of the allowable steel tension stress, F_s, the lap length of splices shall be increased not less than 50 percent of the minimum required length. Other equivalent means of stress transfer to accomplish the same 50 percent increase shall be permitted. Where epoxy coated bars are used, lap length shall be increased by 50 percent.

SECTION 2111
MASONRY FIREPLACES

~~**2111.1 Definition.**~~
~~A masonry fireplace is a fireplace constructed of concrete or masonry. Masonry fireplaces shall be constructed in accordance with this section.~~

2111.1 General. The construction of masonry fireplaces consisting of concrete or masonry shall be in accordance with this section.

~~**2111.3 Seismic reinforcing.**~~
~~In structures assigned to *Seismic Design Category* A or B, reinforcement and seismic anchorage are not required. Masonry or concrete fireplaces shall be constructed, anchored, supported and reinforced as required in this chapter. In structures assigned to *Seismic Design Category* C or D, masonry and concrete fireplaces shall be reinforced and anchored as detailed in Sections 2111.3.1, 2111.3.2, 2111.4 and 2111.4.1 for chimneys serving fireplaces. In structures assigned to *Seismic Design Category* E or F, masonry and concrete chimneys shall be reinforced in accordance with the requirements of Sections 2101 through 2108.~~

2111.3 Seismic reinforcing. In structures assigned to *Seismic Design Category* A or B, seismic reinforcement is not required. In structures assigned to *Seismic Design Category* C or D, masonry fireplaces shall be reinforced and anchored as detailed in Sections 2111.3.1, 2111.3.2, 2111.4 and 2111.4.1. In structures assigned to *Seismic Design Category* E or F, masonry fireplaces shall be reinforced in accordance with the requirements of Sections 2101 through 2108.

~~**2111.4 Seismic anchorage.**~~
~~Masonry and concrete chimneys in structures assigned to *Seismic Design Category* C or D shall be anchored at each floor, ceiling or roof line more than 6 feet (1829 mm) above grade, except where constructed completely within the *exterior walls*. Anchorage shall conform to the following requirements.~~

~~**2111.4.1 Anchorage.**~~

~~Two 3/16-inch by 1-inch (4.8 mm by 25.4 mm) straps shall be embedded a minimum of 12 inches (305 mm) into the chimney. Straps shall be hooked around the outer bars and extend 6 inches (152 mm) beyond the bend. Each strap shall be fastened to a minimum of four floor joists with two ½-inch (12.7mm) bolts.~~

2111.4 Seismic anchorage. Masonry fireplaces and foundations shall be anchored at each floor, ceiling or roof line more than 6 feet (1829 mm) above grade with two 3/16-inch by 1-inch (4.8 mm by 25 mm) straps embedded a minimum of 12 inches (305 mm) into the chimney. Straps shall be hooked around the outer bars and extend 6 inches (152 mm) beyond the bend. Each strap shall be fastened to a minimum of four floor joists with two 1/2-inch (12.7 mm) bolts.

Exception: Seismic anchorage is not required for the following;

1. **In structures assigned to *Seismic Design Category* A or B.**
2. **Where the masonry fireplace is constructed completely within the *exterior walls.***

~~**2113.1 Definition.**~~

~~A masonry chimney is a chimney constructed of solid masonry units, hollow masonry units grouted solid, stone or concrete, hereinafter referred to as "masonry." Masonry chimneys shall be constructed, anchored, supported and reinforced as required in this chapter.~~

2113.1 General. The construction of masonry chimneys consisting of solid masonry units, hollow masonry units grouted solid, stone or concrete shall be in accordance with this section.

~~**2113.3 Seismic reinforcing.**~~

~~Masonry or concrete chimneys shall be constructed, anchored, supported and reinforced as required in this chapter. In structures assigned to *Seismic Design Category* C or D, masonry and concrete chimneys shall be reinforced and anchored as detailed in Sections 2113.3.1, 2113.3.2 and 2113.4. In structures assigned to *Seismic Design Category* A or B, reinforcement and seismic anchorage is not required. In structures assigned to *Seismic Design Category* E or F, masonry and concrete chimneys shall be reinforced in accordance with the requirements of Sections 2101 through 2108.~~

2113.3 Seismic reinforcing. In structures assigned to *Seismic Design Category* A or B, seismic reinforcement is not required. In structures assigned to *Seismic Design Category* C or D, masonry chimneys shall be reinforced and anchored as detailed in Sections 2113.3.1, 2113.3.2 and 2113.4. In structures assigned to *Seismic Design Category* E or F, masonry chimneys shall be reinforced in accordance with the requirements of Sections 2101 through 2108 and anchored as detailed in Section 2113.4.

~~**2113.4 Seismic anchorage.**~~

~~Masonry and concrete chimneys and foundations in structures assigned to *Seismic Design Category* C or D shall be anchored at each floor, ceiling or roof line more than 6 feet (1829 mm) above grade, except where constructed completely within the *exterior walls*. Anchorage shall conform to the following requirements.~~

~~**2113.4.1 Anchorage.**~~

~~Two 3/16-inch by 1-inch (4.8 mm by 25 mm) straps shall be embedded a minimum of 12 inches (305 mm) into the chimney. Straps shall be hooked around the outer bars and extend 6 inches (152 mm) beyond the bend. Each strap shall be fastened to a minimum of four floor joists with two ½-inch (12.7 mm) bolts.~~

2113.4 Seismic anchorage. Masonry chimneys and foundations shall be anchored at each floor, ceiling or roof line more than 6 feet (1829 mm) above grade with two 3/16-inch by 1-inch (4.8 mm by 25 mm) straps embedded a minimum of 12 inches (305 mm) into the chimney. Straps shall be hooked around the outer bars and extend 6 inches (152 mm) beyond the bend. Each strap shall be fastened to a minimum of four floor joists with two 1/2-inch (12.7 mm) bolts.

Exception: Seismic anchorage is not required for the following;

1. In structures assigned to *Seismic Design Category* A or B.
2. Where the masonry fireplace is constructed completely within the *exterior walls.*

CHAPTER 22
STEEL

~~2208.2 Seismic requirements for steel cable.~~ ~~The design strength of steel cables shall be determined by the provisions of ASCE 19 except as modified by these provisions.~~

~~1. A load factor of 1.1 shall be applied to the prestress force included in T_4 and T_4 as defined in Section 3.12.~~

~~2. In Section 3.2.1, Item (c) shall be replaced with "1.5 T" and Item (d) shall be replaced with "1.5T_4".~~[21]

CHAPTER 23
WOOD

Delete Table 2304.9.1 and replace as follows:

TABLE 2304.9.1
FASTENING SCHEDULE

	DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF FASTENER [a, b, c]	SPACING AND
	ROOF		
1	Blocking between ceiling joists or rafters to top plate or other framing below	3-8d common (2 1/2 " x 0.131"); or 3-10d box (3" x 0.128"); or 3-3" x 0.13 1" nails; or 3-3" 14 gage staples, 7/16" crown	at each end, toe nail
	Flat blocking to truss and web filler	16d common (3 1/2" x 0.162") @ 6"o.c.; or 3" x 0.13 1" nails @ 6" o.c.; or 3" x 14 gage staples, 7/16" crown @ 6" o.c.	Face nail
2	Ceiling joists to top plate	3-8d common (2 1/2 " x 0.131"); or 3-10d box (3" x 0.128"); or 3-3" x 0.13 1" nails; or 3-3" 14 gage staples, 7/16" crown	per joist, toe nail
3	Ceiling joist not attached to parallel rafter (no thrust), laps over partitions, (see Section 2308.10.4.1, Table 2308.10.4.1)	3-16d common (3 1/2" x 0.162"); or 4-10d box (3" x 0.128"); or 4-3" x 0.131" nails; or 4-3" 14 gage staples, 7/16" crown	Face nail
4	Ceiling joist attached to parallel rafter (heel joint) (Section 2308.10.4.1, Table 2308.10.4.1)	Per Table 2308.10.4.1	Face nail
5	Collar tie to rafter	3-10d common (3" x 0.148"); or 4-10d box (3" x 0.128"); or 4-3" x 0.13 1" nails; or 4-3" 14 gage staples, 7/16" crown	Face nail
6	Rafter or roof truss to plate or other framing below (See Section 2308.10.1, Table 2308.10.1)	3-10d common (3"x 0.148"; or 3-16d box (3 1/2" x 0.135"); or 4-10d box (3"x0. 128"); or 4-3"x0. 131 nails; or 4-3" 14 gage staples, 7/16" crown	Toenail[c]
7	Roof rafters to ridge, valley or hip rafters: or, roof rafter to 2-inch ridge board	2-16d common (3 1/2" x 0.162"); or 3-10d box (3"x0. 128"); or 3-3"x0. 131" nails; or 3-3" 14 gage staples, 7/16"; crown; or 2-16d common (3 1/2" x 0.135") or	End nail
		3-10d common (3"x0. 148"; or 3-16d box (3 1/2 " x 0.135") 4-10d box (3"x 0.128"); or 4-3"x0. 131" nails; or 4-3" 14 gage staples, 7/16" crown	Toe nail

Wall			
8	Stud to stud (not at braced wall panels)	16d common (3 1/2” x 0.162”); or	24” o.c. face nail
		10d box (3” x 0.128”); or 3”x 0.13 1” nails; or 3-3” 14 gage staples, 7/16” crown	16” o.c. face nail
9	Stud to stud and abutting studs at intersecting wall corners (at braced wall panels)	16d common (3 1/2 ” x 0.162”)	16” o.c. face nail
		16d box (3 1/2” x 0.135”); or 3” x 0.13 1” nails; or 3-3” 14 gage staples, 7/16” crown	12” o.c. face nail
10	Built-up header (2-inch to 2-inch header)	16d common (31/2" × 0.162")	16" o.c. each edge face nail
		16d box (3 1/2” x 0.135”)	12” o.c. each edge, face nail
11	Continuous header to stud	4-8d common (2 1/2 " × 0.131 "); or 4-10d box (3” x 0.128”)	Toe nail
12	Top plate to top plate	16d common (3.5” x 0.162”); or	16" o.c. face nail
		10d box (3" × 0.128"); or 3” x 0.13 1” nails; or 3” 14 gage staples, 7/16” crown	12” o.c. face nail
13	Top plate to top plate, at end joints	8-16d common (3 1A " × 0.162"); or 12-10d box (3" × 0.128"); or 12-3” x 0.131” nails; or 12-3” 14 gage staples, 7/16” crown	Face nail on each side of end joint (minimum 24” lap splice length each side of end joint)
14	Bottom plate to joist, rim joist, band joist, blocking (not at braced wall panels)	16d common (3 1A " × 0.162")	16" o.c. face nail
		16d box (3 1/2” x 0.135”); or 3” x 0.13 1” nails; or 3” 14 gage staples, 7/16” crown	12” o.c. face nail
15	Bottom plate to joist, rim joist, band joist or blocking at braced wall panels	2-16d common (3 1/2” x 0.162”);or 3-16d box (31/2" × 0.135"); or 4-3” x 0.13 1” nails; or 4- 3” 14 gage staples, 7/16” crown	16" o.c. face nail
16	Stud to bottom plate	4-8d common (2 1/2” x 0.131”); or 4-10d box (3” x 0.128”); or 4-3” x 0.13 1” nails; or 4-3” 14 gage staples, 7/16” crown; or	Toe nail
		2-16d common (3 1/2” x 0.162”);or 3-10d box (3” x 0.128”); or 3-3” x 0.13 1” nails; or 3-3” 14 gage staples, 7/16” crown	End nail
17	Top or bottom plate to stud	2-16d common (3 1/2” x 0.162”);or 3-10d box (3” x 0.128”); or 3-3” x 0.13 1” nails; or 3-3” 14 gage staples, 7/16” crown	End nail
18	Top plates, laps at corners and intersections	2-16d common (3 1/2” x 0.162”);or 3-10d box (3” x 0.128”); or 3-3” x 0.13 1” nails; or 3-3” 14 gage staples, 7/16” crown	Face nail
19	1" brace to each stud and plate	2-8d common (2 1/2” x 0.131”); or 2-10d box (3” x 0.128”); or 2-3” x 0.13 1” nails; or 2-3” 14 gage staples, 7/16” crown	Face nail
20	1" × 6" sheathing to each bearing	2-8d common (2 1/2” x 0.131”); or 2-10d box (3” x 0.128”)	Face nail

21	1" x 8" and wider sheathing to each bearing	3-8d common (2 1/2" x 0.13 1"); or 3-10d box (3" x 0.128")	Face nail	
		Floor		
22	Joist to sill, top plate, or girder	3-8d common (2 1/2" x 0.13 1"); or 3-10d box (3" x 0.128"); or 3-3" x 0.13 1" nails; or 3-3" 14 gage staples, 7/16" crown	Toe nail	
23	Rim joist, band joist, or blocking to sill, top plate or other framing below	8d common (2 1/2" x 0.131"); or 10d box (3" x 0.128"); or 3" x 0.13 1" nails; or 3" 14 gage staples, 7/16" crown	6" o.c. toe nail	
24	1" × 6" subfloor or less to each joist	2-8d common (2 1/2" x 0.131"); or 2-10d box (3" x 0.128")	Face nail	
25	2" subfloor to joist or girder	2-16d common (3 1/2" × 0.162")	Blind and face nail	
26	2" planks (plank & beam - floor & roof)	2-16d common (3 1/2" × 0.162")	At each bearing, face nail	
27	Built-up girders and beams, 2-inch lumber layers	20d common (4" x 0.192")	32" o.c. face nail at top and bottom staggered on opposite sides	
		10d box (3" × 0.128"); or 3" x 0.13 1" nails; or 3" 14 gage staples, 7/16" crown	24" o.c. face nail at top and bottom staggered on opposite sides	
		And: 2-20d common (4" x 0.192"); or 3-10d box (3" x 0.128"); or 3-3" x 0.13 1" nails; or 3-3" 14 gage staples, 7/16" crown	Face nail at ends and at each splice	
28	Ledger strip supporting joists or rafters	3-16d common (3 1/2" × 0.162"); or 4-10d box (3" x 0.128"); or 4-3" x 0.13 1" nails; or 4-3" 14 gage staples, 7/16" crown	At each joist or rafter, face nail	
29	Joist to band joist or rim joist	3-16d common (3 1/2" × 0.162"); or 4-10d box (3" x 0.128"); or 4-3" x 0.13 1" nails; or 4-3" 14 gage staples, 7/16" crown	End nail	
30	Bridging to joist	2-8d common (2 1/2" x 0.13 1"); or 2-10d box (3" x 0.128"); or 2-3" x 0.13 1" nails; or 2-3" 14 gage staples, 7/16" crown	Each end, toenail	
ITEM	DESCRIPTION OF BUILDING MATERIALS	DESCRIPTION OF FASTENER [b, c,e]	SPACING OF FASTENERS	
			Edges (inches)	Intermediate supports (inches)
		Wood structural panels, subfloor, roof and interior wall sheathing to framing and particleboard wall sheathing to framing		
31	3/8" - 1/2"	6d common or deformed (2" × 0.113") (subfloor and wall)	6	12
		8d box or deformed (2 1/2" x 0.113") (roof)	6	12
		2 3/8" x 0.113" nail (subfloor and wall)	6	12
		1 3/4" 16 gage staple, 7/16" crown (subfloor and wall)	4	8
		2 3/8" x 0.113" nail (roof)	4	8
		1 3/4" 16 gage staple, 7/16" crown (roof)	3	6
32	19/32" - 3/4"	8d common (2 1/2" × 0.13 1"); or 6d deformed (2" x 0.113")	6	12
		2 3/8" x 0.113" nail; or 2" 16 gage staple, 7/16" crown	4	8
33	7/8" - 1 1/4"	10d common (3" × 0.148") nail; or 8d (2 1/2" × 0.13 1") deformed nail	6	12
		Other exterior wall sheathing [h]		

34	1/2" fiberboard sheathing [b]	1 1/2" galvanized roofing nail, 7/16" head diameter; or 1 1/4" 16 gage staple, 7/16" or 1" crown	3	6
35	25/32" fiberboard sheathing [b]	13/4" galvanized roofing nail, 7/16" head diameter; or 1 1/2" 16 gage staple, 7/16" or 1" crown	3	6
Wood structural panels, combination subfloor underlayment to framing				
36	3/4" and less	8d common (21/2" x 0.131"); or 6d deformed (2" x 0.113")	6	1 2
37	7/8" - 1"	8d common (21/2" x 0.131"); or 8d deformed (21/2" x 0.120") nail	6	1 2
38	11/8" - 11/4"	10d common (3" x 0.148") nail; or 8d deformed (21/2" x 0.131") nail	6	1 2
Panel Siding to Framing				
39	1/2" or less	6d corrosion-resistant siding (1 7/8" x 0.106"); or 6d corrosion-resistant casing (2"	6	1 2
40	5/8"	8d corrosion-resistant siding (2 3/8"x 0.128"); or 8d corrosion-resistant casing (2	6	1 2
Interior Paneling				
41	1/4"	4d casing (1 1/2" x 0.080"); or 4d finish (1 1/2" x 0.072")	6	1 2
42	3/8"	6d casing (2" x 0.099"); or 6d finish (Panel supports at 24")	6	1 2

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 mile per hour = 0.447 m/s; 1 Ksi = 6.895 MPa.

a. Nails spaced at 6 inches at intermediate supports where spans are 48 inches or more. For nailing of wood structural panel and particleboard diaphragms and shear walls, refer to Section 2305. Nails for wall sheathing are permitted to be common, box, or casing.

b. Spacing shall be 6 inches on center on the edges and 12 inches on center at intermediate supports for nonstructural applications. Panel supports at 16 inches (20 inches if strength axis in the long direction of the panel, unless otherwise marked).

c. Where a rafter is fastened to an adjacent parallel ceiling joist in accordance with this schedule and the ceiling joist is fastened to the top plate in accordance with this schedule, the number of toenails in the rafter shall be permitted to be reduced by one nail.

SECTION 2308
CONVENTIONAL LIGHT-FRAME CONSTRUCTION

The provisions of Section 2308 have been replaced in their entirety in the 2014 OSSC. Oregon adopted 2015 IBC language and this section has been reorganized and clarified accordingly.

CHAPTER 29
PLUMBING SYSTEMS

~~[P]~~ 2901.1 Scope.
The provisions of this chapter ~~and the *International Plumbing Code*~~ shall govern the ~~erection, installation, *alteration*, repairs, relocation, replacement, *addition* to, use or maintenance of plumbing equipment and systems~~ **location, availability, signage and minimum number of plumbing fixtures in a facility**. Toilet and bathing rooms shall be constructed in accordance with Section 1210. Plumbing systems and equipment shall be ~~constructed,~~ installed ~~and maintained~~ in accordance with the ~~*International*~~ *Plumbing Code*. ~~Private sewage disposal systems shall conform to the *International Private Sewage Disposal Code*.~~

SECTION 2902
MINIMUM PLUMBING FACILITIES

~~[P]~~ 2902.1 Minimum number of fixtures.
Plumbing fixtures shall be provided for the type of occupancy **or use of space in relation to Table 2902.1** and in the minimum number shown in Table 2902.1. Types of occupancies not shown in Table 2902.1 shall be considered individually by the *building official* **and shall reflect the use of the space being served by the fixtures**. The number of occupants shall be determined by this code. Occupancy classification **and use of space** shall be determined in accordance with Chapter 3.

~~[P]~~ TABLE 2902.1
MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES[a]
(See Sections 2902.2 and 2902.3)

No.	CLASSIFICATION	OCCUPANCY	DESCRIPTION	WATER CLOSETS (URINALS ~~SEE SECTION 419.2 OF THE *INTERNATIONAL PLUMBING CODE*~~ MAY REPLACE WATER CLOSETS AT A RATIO OF 1 URINAL PER 2/3 WATER CLOSETS)		LAVATORIES		BATH TUBS/ SHOWERS	DRINKING FOUNTAINS ~~e, f~~ ~~(SEE SECTION 410.1 OF THE INTERNATIONAL *PLUMBING CODE)*~~	~~OTHER~~
				MALE	FEMALE	MALE	FEMALE			
1	Assembly (continued)	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 per floor**	~~1 service sink~~
		A-2[d]	Nightclubs, bars, taverns, dance halls and	1 per 40	1 per 40	1 per 75		—	~~1 per 500~~ **1 per floor**	~~1 service sink~~

			buildings for similar purposes						
			Restaurants, banquet halls and food courts	1 per 75	1 per 75	1 per 200	—	~~1 per 500~~ **1 per floor**	~~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 per floor**	~~1 service sink~~
			Passenger terminals and transportation facilities	1 per 500	1 per 500	1 per 750	—	~~1 per 1,000~~ **1 per floor**	~~1 service sink~~
			Places of worship and other religious services without fixed seating	**1 per 120**	**1 per 60**	**1 per 200**		**1 per floor**	
			Places of worship and other religious services **with fixed seating**	1 per 150	1 per 75	1 per 200	—	~~1 per 1,000~~ **1 per floor**	~~1 service sink~~

(continued)

~~[P]~~ TABLE 2902.1—continued

MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES[a]
(See Sections 2902.2 and 2902.3)

No.	CLASSIFICATION	OCCUPANCY	DESCRIPTION	WATER CLOSETS (URINALS ~~SEE SECTION 419.2 OF THE *INTERNATIONAL PLUMBING CODE*~~ MAY REPLACE WATER CLOSETS AT A RATIO OF 1 URINAL PER 2/3 WATER CLOSETS)		LAVATORIES		BATH TUBS/ SHOWERS	DRINKING FOUNTAINS[e, f] ~~(SEE SECTION 410.1 OF THE *INTERNATIONAL PLUMBING CODE)*~~	~~OTHER~~
				MALE	FEMALE	MALE	FEMALE			
1	Assembly	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 per floor**	~~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 per floor**	~~1 service sink~~
2	Business	B	Buildings for the transaction of business, professional services, other services	1 per 25 for the first 50 and 1 per 50 for the remainder exceeding 50		1 per 40 for the first 80 and 1 per 80 for the remainder exceeding 80		—	~~1 per 100~~	~~1 service sink~~[g]

			involving merchandise, office buildings, banks, light industrial and similar uses					
3	Educational	E	Educational facilities	1 per 50	1 per 50	—	~~1 per 100~~ **1 per floor**	~~1~~ service sink
4	Factory and industrial	F-1 and F-2	Structures in which occupants are engaged in work fabricating, assembly or processing of products or materials	1 per 100	1 per 100	~~See Section 411 of the *International Plumbing Code*~~	~~1 per 400~~	~~1~~ service sink
5	Institutional	I-1	Residential care	1 per 10	1 per 10	1 per 8	~~1 per 100~~	~~1~~ service sink
		I-2	Hospitals, ambulatory nursing home care recipient[b]	1 per per room[c]	1 per per room[c]	1 per 15	~~1 per 100~~	~~1~~ service sink
			Employees, other than residential care[b]	1 per 25	1 per 35	—	~~1 per 100~~	—
			Visitors, other than residential care	1 per 75	1 per 100	—	~~1 per 500~~	—
		I-3	Prisons[b]	1 per cell	1 per cell	1 per 15	~~1 per 100~~	~~1~~ service sink
		I-3	Reformatories, detention centers and correctional centers[b]	1 per 15	1 per 15	1 per 15	~~1 per 100~~	~~1~~ service sink
			Employees[b]	1 per 25	1 per 35	—	~~1 per 100~~	—
		I-4	Adult day care and child day care	1 per 15	1 per 15	1	~~1 per 100~~	~~1~~ service sink

(continued)

~~[P]~~ TABLE 2902.1—continued

MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES[a]

(See Sections 2902.2 and 2902.3)

No.	CLASSIFICATION	OCCUPANCY	DESCRIPTION	WATER CLOSETS (URINALS ~~SEE SECTION 419.2 OF THE *INTERNATIONAL PLUMBING CODE*~~ MAY REPLACE WATER CLOSETS AT A RATIO OF 1 URINAL PER 2/3 WATER CLOSETS)		LAVATORIES		BATH TUBS OR SHOWERS	DRINKING FOUNTAINS[e, f] ~~(SEE SECTION 410.1 OF THE *INTERNATIONAL PLUMBING CODE*)~~	~~OTHER~~
				MALE	FEMALE	MALE	FEMALE			
6	Mercantile	M	Retail stores, service stations, shops, salesrooms, markets and shopping centers	1 per 500		1 per 750		—	~~1 per 1,000~~	~~1 service sink~~[g]
7	Residential	R-1	Hotels, motels, boarding houses (transient)	1 per sleeping unit		1 per sleeping unit		1 per sleeping unit	—	~~1 service sink~~
		R-2	Dormitories, fraternities, sororities and boarding houses (not transient)	1 per 10		1 per 10		1 per 8	~~1 per 100~~	~~1 service sink~~
		R-2	Apartment house	1 per dwelling unit		1 per dwelling unit		1 per dwelling unit	—	1 kitchen sink per dwelling unit; ~~1 automatic clothes washer connect~~

								~~ion per 20 dwelling units~~
		R-3	One- and two-family dwellings	1 per dwelling unit	1 per 10	1 per dwelling unit	—	1 kitchen sink per dwelling unit; 1 automatic clothes washer connection per dwelling unit
		R-3	Congregate living facilities with 16 or fewer persons	1 per 10	1 per 10	1 per 8	~~1 per 100~~	~~1 service sink~~
		R-4	Congregate living facilities with 16 or fewer persons	1 per 10	1 per 10	1 per 8	~~1 per 100~~	~~1 service sink~~
8	Storage	S-1 S-2	Structures for the storage of goods, warehouses, storehouses and freight depots, low and moderate hazard	1 per 100	1 per 100	~~See Section 411 of the *International Plumbing Code*~~	~~1 per 1,000~~	~~1 service sink~~

a. The fixtures shown are based on one fixture being the minimum required for the number of persons indicated or any fraction of the number of persons indicated. The number of occupants shall be determined by this code.
b. Toilet facilities for employees shall be separate from facilities for inmates or care recipients.
c. A single-occupant toilet room with one water closet and one lavatory serving not more than two adjacent patient sleeping units shall be permitted where such room is provided with direct access from each patient sleeping unit and with provisions for privacy.
d. The occupant load for seasonal outdoor seating and entertainment areas shall be included when determining the minimum number of facilities required.
e. The minimum number of required drinking fountains shall comply with Table 2902.1 and Chapter 11.
~~f. Drinking fountains are not required for an occupant load of 15 or fewer.~~
~~g. For business and mercantile occupancies with an occupant load of 15 or fewer, service sinks shall not be required.~~

~~[P]~~ 2902.3.2 Location of toilet facilities in occupancies other than malls.
In occupancies other than covered and open mall buildings, the required *public* and employee toilet facilities shall be located not more than one story above or below the space required to be provided with toilet

facilities, and the path of travel to such facilities shall not exceed a distance of 500 feet (152 m).

Exceptions:

1. In Group B (other than restaurants and dining facilities), F, H, M and S occupancies, toilet facilities may be located in an adjacent building on the same property. The path of travel to such facilities shall not exceed a distance of 300 feet (91 440 mm) and be on an accessible route complying with Chapter 11.

2. The location and maximum travel distances to required employee facilities in factory and industrial occupancies are permitted to exceed that required by this section, provided that the location and maximum travel distance are *approved*.

~~[P]~~ 2902.5 Drinking fountain location.
~~Drinking fountains as prescribed by Table 2902.1 shall not be required to be located in individual tenant spaces provided that public drinking fountains are located within a travel distance of 500 feet of the most remote location in the tenant space and not more than one story above or below the tenant space.~~ Where the ~~tenant space is~~ **drinking fountains are** in a covered or open mall, such distance shall not exceed 300 feet. Drinking fountains shall be located on an accessible route.

SECTION 2903
ALTERATION OF EXISTING
GROUP A, M & E OCCUPANCIES

2903.1 Definitions.

SUBSTANTIAL ALTERATION.
STRUCTURALLY IMPRACTICAL.

2903.2 Requirements. Where substantial alterations are made to an existing Groups A, M and E occupancy with an occupant load in excess of 300, water closets, as specified in Table 2902.1 for new construction, shall be provided.

Exception: The building official may approve substantial alterations without the installation of additional water closets only where it is structurally infeasible to make such alterations; where existing site conditions, including the size of existing public water or sewer lines, prohibit such installations; or where zoning regulations prohibit adding floor area to the existing building. The number of water closets provided shall be the maximum number feasible but need not exceed the number required for new construction.

CHAPTER 30
ELEVATORS AND CONVEYING SYSTEMS

3001.3 Accessibility. Passenger elevators required to be accessible **shall conform to Chapter 11** ~~or to serve as part of an *accessible means of egress* shall comply with Sections 1107 and 1109.7 6.~~ **and the Elevator Code.**

CHAPTER 31
SPECIAL CONSTRUCTION

SECTION 3111
SOLAR PHOTOVOLTAIC PANELS/MODULES

3111.1 General.

Solar photovoltaic panels/modules shall comply with the requirements of ~~this code and the *International Fire Code*.~~ **the Solar Code.**

CHAPTER 34
EXISTING STRUCTURES

3401.2 Maintenance.
Not adopted by the State of Oregon but may be adopted by local municipalities. Buildings and structures, and parts thereof, shall be maintained in a safe and sanitary condition. Devices or safeguards which are required by this code shall be maintained in conformance with the code edition under which installed. The owner or the owner's designated agent shall be responsible for the maintenance of buildings and structures. To determine compliance with this subsection, the *building official* shall have the authority to require a building or structure to be reinspected. The requirements of this chapter shall not provide the basis for removal or abrogation of fire protection and safety systems and devices in existing structures.

3401.4.3 Existing seismic force-resisting systems.
Where the existing seismic force-resisting system is a type that can be designated ordinary **and is a type that is allowed in the Seismic Design Category**, values of R , Ω_0, and Cd for the existing seismic force-resisting system shall be those specified by this code for an ordinary system unless it is demonstrated that the existing system will provide performance equivalent to that of a detailed, intermediate or special system.

3403.2 Flood hazard areas. For buildings and structures in *flood hazard areas* established by the **Flood Plain Administrator** ~~local governing authority in Section 1612.3~~, any *addition* that constitutes substantial improvement of the existing structure, as defined in Section 1612.2, shall comply with the flood design requirements for new construction, and all aspects of the existing structure shall be brought into compliance with the requirements for new construction for flood design.

For buildings and structures in *flood hazard areas* established by the **Flood Plain Administrator** ~~local governing authority in Section 1612.3~~, any additions that do not constitute substantial improvement of the existing structure, as defined in Section 1612.2, are not required to comply with the flood design requirements for new construction.

3404.2 Flood hazard areas. For buildings and structures in *flood hazard areas* established by the **Flood Plain Administrator** ~~local governing authority in Section 1612.3~~, any *alteration* that constitutes *substantial improvement* of the *existing structure*, as defined in Section 1612.2, shall comply with the flood design requirements for new construction, and all aspects of the *existing structure* shall be brought into compliance with the requirements for new construction for flood design.

For buildings and structures in *flood hazard areas* established by the **Flood Plain Administrator** ~~local governing authority in Section 1612.3~~, any *alterations* that do not constitute *substantial improvement* of the *existing structure*, as defined in Section 1612.2, are not required to comply with the flood design requirements for new construction.

SECTION 3405
REPAIRS

3405.1 General.
Buildings and structures, and parts thereof, shall be repaired in compliance with Section 3405 ~~and 3401.2.~~

Devices or safeguards which are required by this code shall be repaired in conformance with the code edition under which installed. To determine compliance with this subsection, the building official shall have the authority to require a building or structure to be reinspected.

SECTION 3411
ACCESSIBILITY FOR EXISTING BUILDINGS

3411.6 Alterations.
A building, *facility* or element that is altered shall comply with the applicable provisions in Chapter 11 of this code and ICC A117.1, unless *technically infeasible*. Where compliance with this section is *technically infeasible*, the *alteration* shall provide access to the maximum extent technically feasible.

Exceptions:

1. The altered element or space is not required to be on an *accessible* route, unless required by Section 3411.7.
2. *Accessible means of egress* required by Chapter 10 are not required to be provided in existing facilities.
3. The *alteration* to Type A individually owned dwelling units within a Group R-2 occupancy shall ~~be permitted to~~ meet the provision for a *Type B dwelling unit* **and shall comply with the applicable provisions in Chapter 11 and ICC A117.1.**
4. ~~Type B dwelling or sleeping units required by Section 1107 of this code are not required to be provided in existing buildings and facilities undergoing a change of occupancy in conjunction with alterations where the work area is 50 percent or less of the aggregate area of the building.~~

3412.2.4.1 Flood hazard areas. For existing buildings located in *flood hazard areas* established **by the Flood Plain Administrator** ~~in Section 1612.3~~, if the alterations and repairs constitute substantial improvement of the existing building, the existing building shall be brought into compliance with the requirements for new construction for flood design.

3411.8.9 Type B dwelling or sleeping units. Where four or more Group I-1, I-2, R-1, R-2, R-3, or R-4 dwelling or sleeping units are being added, the requirements of Section 1107 for Type B units shall apply only to the quantity of spaces being added~~. Where Group I-1, I-2, R-1, R-2, R-3 or R-4 dwelling or sleeping units are being altered and where the work area is greater than 50 percent of the aggregate area of the building, the requirements of Section 1107 for Type B units apply only to the quantity of spaces being altered.~~

3412.2 Applicability. Structures existing prior to ~~[DATE TO BE INSERTED BY THE JURISDICTION. NOTE: IT IS RECOMMENDED THAT THIS DATE COINCIDE WITH THE EFFECTIVE DATE OF BUILDING CODES WITHIN THE JURISDICTION]~~ **July 1st, 2014**, in which there is work involving additions, alterations or changes of occupancy shall be made to comply with the requirements of this section or the provisions of Sections 3403 through 3409. The provisions in Sections 3412.2.1 through 3412.2.5 shall apply to existing occupancies that will continue to be, or are proposed to be, in Groups A, B, E, F, M, R, S and U. These provisions shall not apply to buildings with occupancies in Group H or I.

~~**3412.2.5 Accessibility requirements.** All portions of the buildings proposed for change of occupancy shall conform to the accessibility provisions of Section 3411.~~

CHAPTER 35
REFERENCED STANDARDS

ASCE/SEI

American Society of Civil Engineers
Structural Engineering Institute
1801 Alexander Bell Drive
Reston, VA 20191-4400

Standard reference number		Referenced in code section number
~~24—05~~	~~Flood Resistant Design and Construction~~	~~1203.3.2, 1612.4, 1612.5, 3001.2, G103.1, G401.3, G401.4~~

~~FEMA~~

~~Federal Emergency Management Agency~~
~~Federal Center Plaza~~
~~500 C Street S.W.~~
~~Washington, DC 20472~~

~~Standard reference number~~		~~Referenced in code section number~~
~~FIA-TB-11—01~~	~~Crawlspace Construction for Buildings Located in Special Flood Hazard Areas~~	~~1805.1.2.1~~
~~P646—08~~	~~Guidelines for Design for Structures for Vertical Evacuation from Tsunamis~~	~~M101.4~~

NFPA

National Fire Protection Association
1 Batterymarch Park
Quincy, MA 02169-7471

Standard reference number	Title	Referenced in code section number
10—**13**~~10~~	Portable Fire Extinguishers	906.2, 906.3.2, 906.3.4, Table 906.3(1), Table 906.3(2)
11—10	Low Expansion Foam	904.7
12—**11**~~10~~	Carbon Dioxide Extinguishing Systems	904.8, 904.11
12A—09	Halon 1301 Fire Extinguishing Systems	904.9
13—**13**~~10~~	Installation of Sprinkler Systems	708.2, 903.3.1.1, 903.3.2, 903.3.5.1.1, 903.3.5.2, 904.11, 905.3.4, 907.6.3, 1009.3
13D—**13**~~10~~	Installation of Sprinkler Systems in One- and Two-family Dwellings and Manufactured Homes	903.3.1.3, 903.3.5.1.1
13R—**13**~~10~~	Installation of Sprinkler Systems in Residential Occupancies Up to and Including Four Stories in Height	903.3.1.2, 903.3.5.1.1, 903.3.5.1.2, 903.4
14—**13**~~10~~	Installation of Standpipe and Hose System	905.2, 905.3.4, 905.4.2, 905.6.2, 905.8
16—11	Installation of Foam-water Sprinkler and Foam-water Spray Systems	904.7, 904.11
17—**13**~~09~~	Dry Chemical Extinguishing Systems	904.6, 904.11
17A—**13**~~09~~	Wet Chemical Extinguishing Systems	904.5, 904.11
20—10	Installation of Stationary Pumps for Fire Protection	913.1, 913.2.1, 913.5
30—12	Flammable and Combustible Liquids Code	415.5, 507.8.1.1.1, 507.8.1.1.2
31—**11**~~06~~	Installation of Oil-burning Equipment	2113.15
32—11	Dry Cleaning Plants	415.8.4

40—11	Storage and Handling of Cellulose Nitrate Film	409.1
58—11	Liquefied Petroleum Gas Code	415.8.3
61—**13**~~08~~	Prevention of Fires and Dust Explosions in Agricultural and Food Product Facilities	415.8.1
70—11	National Electrical Code	108.3, 415.10.1.8, 904.3.1, 907.6.1, 909.12.1, 909.16.3, 1205.4.1, 2701.1, 3401.3, H106.1, H106.2, K101, K111.1
72—**13**~~10~~	National Fire Alarm Code	901.6, 903.4.1, 904.3.5, 907.2, 907.2.5, 907.2.11, 907.2.13.2, 907.3, 907.3.3, 907.3.4, 907.5.2.1.2, 907.5.2.2, 907.6, 907.6.1, 907.6.5, 907.7, 907.7.1, 907.7.2, 907.2.9.2, 911.1.5, 3006.5, 3007.8
80—**13**~~10~~	Fire Doors and Other Opening Protectives	410.3.5, 509.4.2, 716.5, 716.5.7, 716.5.8.1, 716.5.9.2, 716.6, 716.6.4, 1008.1.4.2, 1008.1.4.3
82—09	Standard for Incinerators and Waste and Linen Handling Systems and Equipment, 2009 Edition	713.13
85—11	Boiler and Combustion System Hazards Code (Note: NFPA 8503 has been incorporated into NFPA 85)	415.8.1
92B—09	Smoke Management Systems in Malls, Atria and Large Spaces	909.8
99—**12**~~10~~	Standard for Health Care Facilities	407.10
101—12	Life Safety Code	1028.6.2
105—**13**~~10~~	Standard for the Installation of Smoke Door Assemblies	405.4.2, 710.5.2.2, 716.5.3.1, 909.20.4.1
110—**13**~~10~~	Emergency and Standby Power Systems	2702.1
111—**13**~~10~~	Stored Electrical Energy Emergency and Standby Power Systems	2702.1
120—10	Coal Preparation Plants	415.8.1
170—**12**~~09~~	Standard for Fire Safety and Emergency Symbols	1024.2.6.1
211—**13**~~10~~	Chimneys, Fireplaces, Vents and Solid Fuel-burning Appliances	2112.5
221—09	Standard for High Challenge Fire Walls, Fire Walls, and Fire Barrier Walls, 2009 Edition	706.2
252—12	Standard Methods of Fire Tests of Door Assemblies	715.4.2, 715.4.3, 715.4.7.3.1, Table 716.3, 716.4, 716.5.1, 716.5.3, 716.5.8, 716.5.8.1.1, 716.5.8.3.1
253—11	Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source	406.8.3, 424.2, 804.2, 804.3
257—12	Standard for Fire Test for Window and Glass Block Assemblies	Table 716.3, 716.4, 716.5.3.2, 716.6, 716.6.1, 716.6.2, 716.6.7.3
259—08	Test Method for Potential Heat of Building Materials	2603.4.1.10, 2603.5.3
265—11	Method of Fire Tests for Evaluating Room Fire Growth Contribution of Textile Wall Coverings on Full Height Panels and Walls	803.1.3, 803.1.3.1

268—12	Standard Test Method for Determining Ignitibility of Exterior Wall Assemblies Using a Radiant Heat Energy Source	1406.2.1.1, 1406.2.1.1.1, 1406.2.1.1.2, 2603.5.7, D105.1
275—09	Standard Method Of Fire Tests for the Evaluation of Thermal Barriers Used Over Foam Plastic Insulation	1407.10.2, 2603.4
285—11	Standard Method of Test for the Evaluation of Flammability Characteristics of Exterior Nonload-bearingWall Assemblies Containing Combustible Components	718.2.6, 1403.5, 1407.10.4, 1409.10.4, 1509.6.2, 2603.5.5
286—11	Standard Method of Fire Test for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth	402.6.4.4, 803.1.2, 803.1.2.1, 803.9, 2603.4, 2603.7, 2603.10, 2604.2.4, 2613.4
288—12	Standard Method of Fire Tests of Floor Fire Door Assemblies Installed Horizontally in Fire-resistance-rated Floor Systems	711.8
289—**13**~~09~~	Standard Method of Fire Test for Individual Fuel Packages	402.6.2, 407.6.4.6, 424.2
307-11	**Standard for the Construction and Fire Protection of Marine Terminals, Piers and wharves**	**903.2.11.7**
409—**13**~~10~~	Aircraft Hangars	412.4.6, Table 412.4.6, 412.4.6.1, 412.6.5
418—11	Standard for Heliports	412.7.4
484—12	Combustible Metals	415.8.1
654—**13**~~11~~	Prevention of Fire & Dust Explosions from the Manufacturing, Processing and Handling of Combustible Particulate Solids	415.8.1
655—12	Prevention of Sulfur Fires and Explosions	415.8.1
664—12	Prevention of Fires and Explosions in Wood Processing and Woodworking Facilities	415.8.1
701—10	Standard Methods of Fire Tests for Flame-propagation of Textiles and Films	410.3.6, 424.2, 801.4, 806.1, 806.1.2, 806.2, 3102.3, 3102.3.1, 3102.6.1.1, 3105.4, D102.2.8, H106.1.1
704—12	Standard System for the Identification of the Hazards of Materials for Emergency Response	202, 414.7.2
720—**12**~~09~~	Standard for the Installation of Carbon Monoxide (CO) Detection and Warning Equipment	908.7
1124—**13**~~06~~	Manufacture, Transportation and Storage of Fireworks and Pyrotechnic Articles	415.5.1.1, 415.3.1
2001—**12**~~08~~	Clean Agent Fire Extinguishing Systems	904.10

2014 OSSC APPENDIX CHAPTERS

APPENDIX A
EMPLOYEE QUALIFICATIONS
(Not adopted by the State of Oregon but may be adopted by local municipalities.)

The provisions contained in this appendix are not mandatory unless specifically referenced in the adopting ordinance.

APPENDIX B
BOARD OF APPEALS
(Not adopted by the State of Oregon but may be adopted by local municipalities.)

The provisions contained in this appendix are not mandatory unless specifically referenced in the adopting ordinance.

APPENDIX C
GROUP U–AGRICULTURAL BUILDINGS
(Adopted by the State of Oregon as part of the Oregon Structural Specialty Code.)

SECTION C101
GENERAL

C101.1 Scope. Agricultural buildings and equine facilities meeting the parameters of ORS 455.315 (1) and (2) are exempt from this code, including submission of plans and permits.

Unless otherwise exempted by ORS 455.315 (1) and (2), ~~T~~ **t**he provisions of this appendix shall apply exclusively to agricultural buildings. Such buildings shall be classified as Group U and shall include the following uses:

1. Livestock shelters or buildings, including shade structures and milking barns.
2. Poultry buildings or shelters.
3. Barns.
4. Storage of equipment and machinery used exclusively in agriculture.
5. Horticultural structures, including detached production greenhouses and crop protection shelters.
6. Sheds.
7. Grain silos.
8. Stables.

- The remainder of Appendix C remains unchanged -

APPENDIX D
FIRE DISTRICTS
(Not adopted by the State of Oregon but may be adopted by local municipalities)

The provisions contained in this appendix are not mandatory unless specifically referenced in the adopting ordinance..

APPENDIX E

SUPPLEMENTARY ACCESSIBILITY REQUIREMENTS

(Not adopted by the State of Oregon.
Appendix E may not be adopted locally as the subject matter is encompassed by the State Building Code.)

Editorial Note: Appendix E will not be printed in the OSSC.

APPENDIX F
RODENTPROOFING

(Not adopted by the State of Oregon but may be adopted by local municipalities.)

The provisions contained in this appendix are not mandatory unless specifically referenced in the adopting ordinance.

APPENDIX G
FLOOD-RESISTANT CONSTRUCTION

(Not adopted by the State of Oregon but may be adopted by local municipalities)

The provisions contained in this appendix are not mandatory unless specifically referenced in the adopting ordinance.

APPENDIX H
SIGNS

(Not adopted by the State of Oregon but may be adopted by local municipalities.)

The provisions contained in this appendix are not mandatory unless specifically referenced in the adopting ordinance.

APPENDIX I
PATIO COVERS

(Adopted by the State of Oregon as part of the Oregon Structural Specialty Code.)

The provisions contained in this appendix are not mandatory unless specifically referenced in the adopting ordinance.

APPENDIX J
GRADING

(Not adopted by the State of Oregon but may be adopted by local municipalities.)

The provisions contained in this appendix are not mandatory unless specifically referenced in the adopting ordinance.

APPENDIX K
ADMINISTRATIVE PROVISIONS

(Not adopted by the State of Oregon.
Appendix K may not be adopted locally as the subject matter is encompassed by the State Building Code.)

Editorial Note: Appendix K will not be printed in the OSSC.

APPENDIX L
EARTHQUAKE RECORDING INSTRUMENTATION

(Not adopted by the State of Oregon.
Appendix L may not be adopted locally as the subject matter is encompassed by the State Building Code.)

Editorial Note: Appendix L will not be printed in the OSSC.

APPENDIX M
TSUNUAMI-GENERATED FLOOD HAZARD

(Not adopted by the State of Oregon.
Appendix M may not be adopted locally as the subject matter is encompassed by the State Building Code.)

Editorial Note: Appendix L will not be printed in the OSSC.