

2019 Oregon Structural Specialty Code

Errata—1st Printing



Department of Consumer
and Business Services

September 2021

The following is a list of corrections to the first printing of the 2019 Oregon Structural Specialty Code (OSSC), which is based on the 2018 International Building Code (IBC), Second Printing.

202 Definitions

READY ACCESS (TO). That which enables a device, appliance or equipment to be directly reached, without requiring the removal or movement of any panel, door or similar obstruction.

SUBSTANTIAL DAMAGE. ~~An alteration in which the gravity load-carrying structural elements altered within a 5-year period support more than 30 percent of the total floor and roof area of the building or structure. The areas to be counted toward the 30 percent shall include mezzanines, penthouses, and in-filled courts and shafts tributary to the altered structural elements.~~ Any damage of any origin to a structure whereby the cost of restoring the structure to its original condition would be equal to or exceed 25 percent of the assessed value of the structure before the damage occurred.

308 Institutional Group I

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

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

406 Motor-Vehicle-Related Occupancies

The provisions of Sections 406.8 through 406.8.9 have been rearranged for clarity. The requirements have not changed. The section number in parenthesis is the previous section numbers from the first printing of the 2019 OSSC.

406.8 Repair garages. Repair garages shall be constructed in accordance with Sections 406.2 and 406.8. This occupancy shall not include motor fuel-dispensing facilities, as regulated in Section 406.7. Repair garages for vehicles that use more than one type of fuel shall comply with the applicable provisions of this section for each type of fuel used.

406.8.1 (406.8.1.1) Ventilation. Repair garages shall be mechanically ventilated in accordance with the *Mechanical Code*. The *ventilation* system shall be controlled at the entrance to the garage.

406.8.2 (406.8.3) Automatic sprinkler system. A repair garage shall be equipped with an *automatic sprinkler system* in accordance with Section 903.2.9.1.

406.8.3 Storage of flammable and combustible liquids. The storage and combustible liquids in repair garages shall comply with Section 444 and Sections 406.8.3.1 through 406.8.3.3.

406.8.3.1 (406.8.4) Waste oil, motor oil and other Class IIIB liquids. Waste oil, motor oil and other Class IIIB liquids shall be stored in *approved* tanks or *containers*, which are allowed to be stored and dispensed from inside repair garages.

406.8.3.1.1 (406.8.4.1) Tank location. Tanks storing Class IIIB liquids in *repair garages* are allowed to be located at, below or above grade, provided that adequate drainage or containment is provided.

406.8.3.2 (406.8.4.2) Spray finishing. Spray finishing with flammable or *combustible liquids* shall comply with this code.

406.8.4 (406.8.5) Sources of ignition. Sources of ignition shall not be located within 18 inches (457 mm) of the floor and shall comply with this code.

406.8.4.1 (406.8.5.1) Equipment. ~~Building systems.~~ Appliances and equipment ~~Building systems~~ installed in a *repair garage* shall comply with the provisions of this code, the *Mechanical Code* and the *Electrical Code*.

406.8.5 (406.8.6) Below-grade areas. Pits and below-grade work areas in repair garages shall comply with Sections 406.8.5.1 through 406.8.5.3.

406.8.5.1 (406.8.6.1) Construction. Pits and below-grade work areas shall be constructed in accordance with this code.

406.8.5.2 (406.8.6.2) Means of egress. Pits and below-grade work areas shall be provided with *means of egress* in accordance with Chapter 10.

406.8.5.3 (406.8.6.3) Ventilation. Where Class I liquids or LP-gas is stored within a building having a *basement* or pit wherein flammable vapors could accumulate, the *basement* or pit shall be provided with mechanical ventilation, in accordance with the *Mechanical Code*, at a minimum rate of 1½ cubic feet per minute per square foot (cfm/ft²) [0.008 m³/(s • m²)] to prevent the accumulation of flammable vapors.

406.8.6 (406.8.1) Repair garages for vehicles fueled by lighter-than-air fuels. The room, motor vehicle repair booth or motor vehicle repair space containing repair garage activities for the conversion or repair of vehicles that use CNG, LNG, hydrogen or other lighter-than-air motor fuels shall be in accordance with this code. Repair garages for the repair of vehicles that use hydrogen fuel shall be in accordance with this code and NFPA 2.

Exceptions:

1. Repair garages where work is conducted only on vehicles that have been defueled and their systems purged with nitrogen gas.

2. Repair garages where work is not performed on the fuel system and is limited to exchange of parts and maintenance not requiring open flame or welding on the CNG-, LNG-, hydrogen- or other lighter-than-air-fueled motor vehicle.
3. Repair garages for hydrogen-fueled vehicles where work is not performed on the hydrogen storage tank and is limited to the exchange of parts and maintenance not requiring open flame or welding on the hydrogen-fueled vehicle. During the work, the entire hydrogen fuel system shall contain less than 200 cubic feet (5.6 m³) of hydrogen.
4. Repair garages for natural-gas-fueled vehicles where work is not being performed on the fuel storage tank and is limited to the exchange of parts and maintenance not requiring open flame or welding on the natural-gas-fueled vehicle. During the work, the natural gas in the vehicle fuel tank shall contain a pressure of not more than 250 psi at 70°F (1724 kPa at 21°C).

406.8.6.1 Repair garages used for the repair of hydrogen-fueled vehicles. Repair garages used for the repair of hydrogen-fueled vehicles shall be provided with an *approved* exhaust ventilation system in accordance with the *Mechanical Code* and Chapter 6 of NFPA 2.

406.8.6.2 (406.8.7) Motor vehicle repair rooms. Motor vehicle repair rooms shall be enclosed with not less than 1-hour *fire barriers* constructed in accordance with Section 707, or horizontal assemblies constructed in accordance with Section 711, or both, with 1-hour-rated opening protectives.

406.8.6.3 (406.8.8) Motor vehicle repair booths. The design and construction of motor vehicle repair booths shall be in accordance with Sections 406.8.6.3.1 through 406.8.6.3.4.

406.8.6.3.1 (406.8.8.1) Construction. Motor vehicle repair booths shall be constructed of *approved* noncombustible materials. Where walls or ceiling assemblies are constructed of sheet metal, single-skin assemblies shall be not thinner than 0.0478 inch (18 gage) (1.2 mm) and each sheet of double-skin assemblies shall be not thinner than 0.0359 inch (20 gage) (0.9 mm). Structural sections of motor vehicle repair booths shall be sealed in an *approved* manner.

406.8.6.3.2 (406.8.8.2) Surfaces. The interior surfaces of motor vehicle repair booths shall be constructed to permit the free passage of exhaust air from all parts of the interior.

406.8.6.3.3 (406.8.8.3) Means of egress. *Means of egress* shall be provided in accordance with Chapter 10.

Exception: *Means of egress* doors from premanufactured motor vehicle repair booths shall be not less than 30 inches (762 mm) in width by 80 inches (2032 mm) in height.

406.8.6.3.4 (406.8.8.4) Clear space. Motor vehicle repair booth the motor vehicle repair booth.

Exceptions:

1. This requirement shall not prohibit locating a motor vehicle repair booth closer than 3 feet (914 mm) to or directly against an interior partition, wall or floor/ceiling assembly that has a fire-resistance rating of not less than 1 hour, provided that the motor vehicle repair booth can be adequately maintained and cleaned.
2. This requirement shall not prohibit locating a motor vehicle repair booth closer than 3 feet (914 mm) to an exterior wall or a roof assembly, provided that the wall or roof is constructed of noncombustible material and the motor vehicle repair booth can be adequately maintained and cleaned.

406.8.6.4 Motor vehicle repair spaces. Where such spaces are not separately enclosed, noncombustible spray curtains shall be provided to restrict the spread of flammable gases.

406.8.6.5 (406.8.9) Fire protection. Motor vehicle repair booths or spaces installed in a room or area protected by an *automatic sprinkler system* shall have the protection extended to include the inside of the motor vehicle repair booth or space.

406.8.6.6 Exhaust ventilation system. Repair garages used for the repair of CNG, LNG, or other lighter-than-air motor fuels other than hydrogen shall be provided with an approved mechanical ventilation system. The mechanical exhaust ventilation system shall be in accordance with the *Mechanical Code*.

406.8.6.7 (406.8.2) Gas detection system. Repair garages used for repair of vehicles fueled by nonodorized gases including but not limited to hydrogen and nonodorized

LNG, shall be provided with a gas detection system that complies with Section 916. The gas detection system shall be designed to detect leakage of nonodorized gaseous fuel. Where lubrication or chassis service pits are provided in garages used for repairing nonodorized LNG-fueled vehicles, gas sensors shall be provided in such pits.

406.8.6.7.1 (406.8.2.1) System activation.

Activation of a gas detection alarm shall result in all of the following:

1. Initiation of distinct audible and visual alarm signals in the repair garage, where the ventilation system is interlocked with gas detection.
2. Deactivation of all heating systems located in the repair garage.
3. Activation of the mechanical *ventilation* system, where the system is interlocked with gas detection.

406.8.6.7.2 (406.8.2.2) Failure of the gas detection system. Failure of the *gas detection system* shall automatically deactivate the heating system, activate the mechanical ventilation system where the system is interlocked with the *gas detection system*, and cause a trouble signal to sound at an approved location.

406.8.6.8 Classified electrical area. Areas within 18 inches (450 mm) of a ceiling within a motor vehicle repair room or motor vehicle repair booth shall be designed and installed in accordance with the requirements for Class I, Division 2 classified locations, as set forth in the *Electrical Code*.

Exceptions:

1. Rooms with exhaust ventilation of not less than 1 cubic foot per minute per square foot (0.3 m³/min/m²) of floor area, with suction taken from a point within 18 inches (450 mm) of the highest point in the ceiling in repair garages for vehicles that use CNG, liquefied natural gas (LNG) or other lighter-than-air motor fuels.
2. Rooms used for the repair of hydrogen-fueled vehicles that have an approved exhaust ventilation system in accordance with the *Mechanical Code* and Chapter 6 of NFPA 2.

412 Aircraft-Related Occupancies

412.4.3 Smoke alarms. *Smoke alarms* shall be provided within the hangar in accordance with Section ~~907.2.20~~ 907.2.21.

414 Hazardous Materials

414.1 General. The provisions of Sections 414.1 through 414.18 shall apply to buildings and structures occupied for the manufacturing, processing, dispensing, use or storage of *hazardous materials*. This section shall apply to all *hazardous materials*, including those materials regulated elsewhere in this code, except where specific requirements are provided in other sections or chapters, those specific requirements shall apply in accordance with the applicable section or chapter. Where a material has multiple hazards, all hazards shall be addressed.

Exceptions:

- ~~1. In retail or wholesale sales occupancies, the quantities of medicines, foodstuff, or consumer products and cosmetics containing not more than 50 percent by volume of water miscible liquids and with the remainder of the solutions not being flammable shall not be limited, provided that such materials are packaged in individual containers not exceeding 1.3 gallons (5 L).~~
- ~~2. Quantities of alcoholic beverages in retail or wholesale sales occupancies shall not be limited, provided that the liquids are packaged in individual containers not exceeding 1.3 gallons (5 L).~~
- ~~3. Building materials not otherwise regulated by this code.~~
- ~~4. Refrigeration systems (see Chapter 28).~~
- ~~5. Stationary storage battery systems regulated by Section 430.~~
- ~~6. The display, storage, sale or use of fireworks and explosives in accordance with Section 443.~~
- ~~7. Corrosives utilized in personal and household products in the manufacturer's original consumer packaging in Group M occupancies.~~
- ~~8. The storage of distilled spirits and wines in wooden barrels and casks.~~

414.1.1 Waiver. The provisions of this chapter are waived where the *building official* determines that such enforcement is preempted by other codes, statutes or ordinances. The details of any action granting such a waiver shall be recorded and entered in the files of the *municipality*.

414.1.1.1 Other provisions. Buildings and structures with an occupancy in Group H shall comply with this section and the applicable provisions of Section 415.

414.1.2 Materials. The safe design of hazardous material occupancies is material dependent. Individual material requirements are found in [this code](#), Section 307 and the *Mechanical Code*.

414.2.5.1 Nonflammable solids and nonflammable and noncombustible liquids. The aggregate quantity of nonflammable solid and nonflammable or noncombustible liquid *hazardous materials* permitted within a single *control area* of a Group M display and storage area, a Group S storage area ~~or~~ is permitted to exceed the maximum allowable quantities per *control area* specified in Tables 307.1(1) and 307.1(2) without classifying the building or use as a Group H occupancy, provided that the materials are displayed and stored in accordance with this code and quantities do not exceed the maximum allowable specified in Table 414.2.5(1).

420 Groups I-1, R-1, R-2, R-3 and R-4

420.10.2 Cooking appliances in sleeping rooms. Cooktops, ranges and ovens shall not be installed ~~or used~~ in sleeping rooms.

427 Medical Gas Systems

TABLE 427.2
PERMITTED AMOUNTS FOR COMPRESSED GASES

TYPE OF GAS	AMOUNT (cubic feet at NTP)
Carbon dioxide	875 (100 lbs.)
Corrosive	200
Flammable (except cryogenic fluids and liquefied petroleum gases)	200
Highly toxic	Any Amount
Inert and simple asphyxiant	6,000
Oxidizing (including oxygen)	504
Pyrophoric	Any Amount
Toxic	Any Amount

For SI: 1 cubic foot = 0.02832 m³

440 Compressed Gas

440.9.1 Interior supply location. Medical gases shall be located in areas dedicated to the storage of such gases without other storage or uses. Where *containers* of medical gases in quantities greater than the ~~permit amount~~ permitted amounts set forth in Table 427.2 are located inside buildings, they shall be in a 1-hour exterior room, a 1-hour interior room or a gas cabinet in accordance with Section 440.9.1.1, 440.9.1.2 or 440.9.1.3, respectively. Rooms or areas where medical gases are stored or used in quantities exceeding the *maximum allowable quantity per control area* as set forth in this code shall be in accordance with this code for high-hazard Group H occupancies.

903 Automatic Sprinkler Systems

903.2.8.3 Group R-4, Condition 2. An *automatic sprinkler system* installed in accordance with Section 903.3.1.2 shall be permitted in Group R-4, Condition 2 occupancies.

~~**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 an *automatic sprinkler system* installed in accordance with Section 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 noncombustible materials.~~
- ~~3. Attics constructed of *fire-retardant treated* wood framing complying with Section 2303.2.~~
- ~~4. The *automatic sprinkler system* shall be extended to provide protection throughout the attic space.~~

909 Smoke Control Systems

909.19.6.1 Ventilation systems. Smokeproof enclosure ventilation systems shall be independent of other building ventilation systems. The equipment, control wiring, power wiring and ductwork shall comply with one of the following:

(Items 1-3) remain unchanged

Exception: Control wiring and power wiring located outside of a 2-hour fire barrier construction shall be installed and protected in accordance with the *Electrical Code* and provide a fire-resistance rating of not less than 2 hours.

1005 Means of Egress Sizing

1005.3.2 Other egress components. The capacity, in inches, of *means of egress* components other than *stairways* shall be calculated by multiplying the *occupant load* served by such component by a means of egress capacity factor of 0.2 inch (5.1 mm) per occupant.

Exceptions:

1. For other than Group H and I-2 occupancies, the capacity, in inches, of *means of egress* components other than *stairways* shall be calculated by multiplying the *occupant load* served by such component by a means of egress capacity factor of 0.15 inch (3.8 mm) per occupant in buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2 and an *emergency voice/alarm communication* system in accordance with Section 907.5.2.2.

(The rest of Section 1005.3.2 remains unchanged.)

1110 Recreational Facilities

1110.1 General. Recreational facilities shall be provided with *accessible* features in accordance with Section ~~1102.2.2.9~~ 1102.1.2.9.

1608 Snow Loads

1608.2.5 ASCE 7, Section 7.10. Modify ASCE 7, Section 7.10, *Rain-on-Snow Surcharge Load*, to read as follows:

A 5 psf rain-on-snow surcharge shall be added to the minimum roof snow load determined from Sections 7.3.4 and 7.4 where any of the following conditions exist:

1. All roofs having a slope less than or equal to 1 unit vertical in 12 units horizontal (1:12).
2. Roofs of any slope that constrain runoff of the drainage system by parapets or other physical obstructions and are capable of accumulating more than 1 inch of standing water on any part of the roof. Structures with a continuous gutter at the low-point eave or comparable system shall not be considered as having constrained runoff.

(The following is an exception to the section and not to item 2.)

Exception: The 5 psf rain-on-snow surcharge need not apply to roofs, of any slope, where all of the following conditions exist:

1. The roof drainage is not constrained.
2. The mapped ground snow load, *pg*, is less than 15 psf.
3. The structure lies west of the Coast Range crest or east of the Cascade Range crest. At the most northern point of the Coast Range crest, the dividing line shall be the county line between Clatsop and Columbia counties.

1609 Wind Loads

TABLE 1609.3
BASIC DESIGN WIND SPEED, V, FOR RISK CATEGORY I, II, III AND IV BUILDINGS AND OTHER STRUCTURES

Klamath special wind region ^a	115 100	120 110	130 115	130 115
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1613 Earthquake Loads

1613.1 Scope. Every structure, and portion thereof, including nonstructural components that are permanently attached to structures and their supports and attachments, shall be designed and constructed to resist the effects of earthquake motions in accordance with Chapters 11, 12, 13, 15, 17 and 18 of ASCE 7 as modified by Section 1613.4, as applicable. The *seismic design category* for a structure is permitted to be determined in accordance with Section 1613 or ASCE 7.

TABLE 1613.2.3(2)
VALUES OF SITE COEFFICIENT F_s^a

SITE CLASS	MAPPED RISK TARGETED MAXIMUM CONSIDERED EARTHQUAKE (MCER) SPECTRAL RESPONSE ACCELERATION PARAMETER AT 1-SECOND PERIOD					
	$S_1 \leq 0.1$	$S_1 = 0.2$	$S_1 = 0.3$	$S_1 = 0.4$	$S_1 = 0.5$	$S_1 \geq 0.6$
A	0.8	0.8	0.8	0.8	0.8	0.8
B	0.8	0.8	0.8	0.8	0.8	0.8
C	1.5	1.5	1.5	1.5	1.5	1.4
D	2.4	2.2 ^c	2.0 ^c	1.9 ^c	1.8 ^c	1.7 ^c
E	4.2	3.3 ^c	2.8 ^c	2.4 ^c	2.2 ^c	2.0 ^c
F	Note b	Note b	Note b	Note b	Note b	Note b

- a. Use straight-line interpolation for intermediate values of mapped spectral response acceleration at short period, S_s .
- b. Values shall be determined in accordance with Section 11.4.8 of ASCE 7.
- c. [See requirements for site-specific ground motions in Section 11.4.8 of ASCE 7.](#)

1613.4 Modifications to ASCE 7. The text of ASCE 7 shall be modified as indicated in Sections ~~1613.5.1~~ 1613.4.1 through ~~1613.5.14~~ 1613.4.15.

(1613.4.1 remains unchanged)

1613.4.2 ASCE 7, Section 13.1.4, Items 5 and 6. Modify ASCE 7, Section 13.1.4, *Exemptions*, Items 5 and 6 to read as follows:

5. Mechanical and electrical components in *Seismic Design Category C*, provided that either:
 - a. The component Importance factor, I_p , is equal to 1.0 and the component is positively attached to the structure; or
 - b. The component weighs 75 pounds (333N) or less or, in the case of a ~~distributed~~ [distribution](#) system, 5 lb/ft (73 N/m) or less.
6. Discrete mechanical and electrical components in *Seismic Design Categories D, E and F* that are positively attached to the structure, provided that either
 - a. The component weighs 400 pounds (1,779 N) or less, the center of mass is located 4 feet or less above the adjacent floor or roof level, flexible connections are provided between the component and associated ductwork, piping, and conduit, and the component Importance Factor, I_p , is equal to 1.0; or
 - b. The component weighs 75 pounds (333 N) or less or, in the case of a ~~distributed~~ [distribution](#) system, 5 lb/ft (73 N/m) or less;

1613.4.15 ASCE 7, Section 13.4.5, Exceptions. Modify ASCE 7, Section 13.4.5, Power-Actuated Fasteners, Exceptions to read as follows:

Exceptions:

1. Power-actuated fasteners in concrete used for support of acoustical tile or lay-in panel suspended ceiling applications and distribution systems where the service load on any individual fastener does not exceed 90 lb (400 N), and
2. Power-actuated fasteners in steel where the service load on any individual fastener does not exceed 250 lb (1,112 N).

1705 Required Special Inspections and Tests

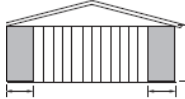
1705.3 Concrete construction. *Special inspections* and tests of concrete construction shall be performed in accordance with this section and Table 1705.3.

Exception: *Special inspections* and tests shall not be required for:

1. Isolated spread concrete footings of buildings three stories or less above *grade plane* that are fully supported on earth or rock.
2. Continuous concrete footings supporting walls of buildings three stories or less above *grade plane* that are fully supported on earth or rock where:
 - 2.1. The footings support walls of light-frame construction; and either
 - 2.2. The footings are designed in accordance with Table 1809.7; or
 - 2.3. The structural design of the footing is based on a ~~specified~~ compressive strength, $f'c$, not more than 2,500 pounds per square inch (psi) (17.2 MPa), regardless of the compressive strength specified in the *approved construction documents* or used in the footing construction.
3. Nonstructural concrete slabs supported directly on the ground, including prestressed slabs on grade, where the effective prestress in the concrete is less than 150 psi (1.03 MPa).
4. Concrete foundation walls constructed in accordance with Table 1807.1.6.2.
5. Concrete patios, driveways and sidewalks, on grade.

2308 Conventional Light-Frame Construction

**TABLE 2308.6.3(1)
BRACING METHODS**

METHODS, MATERIAL	MINIMUM THICKNESS	FIGURE	CONNECTION CRITERIA ^a	
			Fasteners	Spacing
WSP Wood structural panel	$\frac{3}{8}$ " in accordance with Table 2308.6.3(2) or 2308.6.3(3)		Table 2304.10.1	6" edges 12" field
			Exterior sheathing per Table 2304.6.1	
			Interior sheathing per Table 2304.10.1	Varies by fastener

3007 Fire Service Access Elevator

3007.8.1 Protection of wiring or cables. Wires or cables that are located outside of the elevator hoistway and machine room and that provide normal or standby power, control signals, communication with the car, lighting, heating, air conditioning, *ventilation* and fire-detecting systems to fire service access elevators shall be installed and protected [in accordance with the *Electrical Code* and provide a fire-resistance rating of not less than 2 hours.](#)

Exception: Wiring and cables to control signals are not required to be protected provided that wiring and cables do not serve Phase II emergency in-car operations.

3008 Occupant Evacuation Elevators

3008.8.2 Protection of wiring or cables. Wires or cables that are located outside of the elevator hoistway, machine room, control room and control space and that provide normal or standby power, control signals, communication with the car, lighting, heating, air conditioning, *ventilation* and fire-detecting systems to occupant evacuation elevators shall be installed and protected [in accordance with the *Electrical Code* and provide a fire-resistance rating of not less than 2 hours.](#)

Exception: Wiring and cables to control signals are not required to be protected provided that wiring and cables do not serve Phase II emergency in-car operation.

3111 Solar Energy Systems

3111.1 General. Solar energy systems shall comply with the requirements of this section.

Exception: Where the solar energy system is installed on a detached one- and two-family *dwelling* or *townhouse* classified as Group R-3 or Group U occupancies, compliance with the *Residential Code* shall satisfy ~~this requirement~~ [Sections 3111.1.1, 3111.1.2, 3111.2, 3111.3.2, 3111.3.3 and 3111.3.4.6.](#)

3111.3.5.3 Prescriptive installations. Roof mounted installations on Risk Category I or Risk Category II structures of *conventional light-frame construction* that comply with this section shall qualify as prescriptive and shall not require an engineered design if all of the following criteria are met:

1. **Roof structure:** The ground snow load does not exceed 50 psf, *wind speeds* do not exceed 120 mph for Exposure Category C sites or 135 mph for Exposure Category B sites, and the existing supporting roof framing is *conventional light-frame construction* with pre-engineered trusses or rafters spaced at 24 inches (610 mm) on center maximum. Existing rafter spans shall comply with Section 2308.7.2. Where the existing grade and species cannot be verified, it is assumed to be #2 Douglas Fir-Larch.

Exception: *Photovoltaic systems* installed on roofs of detached one- and two-family *dwellings* and *townhouses* classified as Group R-3 and Group U occupancies where the existing supporting roof framing is *conventional light-frame construction* with pre-engineered trusses or rafters spaced at 24 inches (610 mm) on center maximum, the ground snow load does not exceed 70 psf, and the site is limited to wind Exposure Category B or C. [Existing rafter spans shall comply with Section R802.5 of the *Residential Code*.](#)

2. **Roof materials:** Roofing material shall be metal, single-layer wood shingle or shake, or not more than two layers of composition shingle.
3. **Loading:** Installation shall comply with Figures 3111.3.5.3(1) and 3111.3.5.3(2). The combined weight of the *photovoltaic modules* and *racking* shall not exceed 4.5 pounds per square foot (2.0412 kPa). *Photovoltaic modules* or *racking* shall be directly attached to the roof framing or blocking. Attachments must be spaced not greater than 48 inches (1219 mm) on

center in any direction. Attachments shall be spaced not greater than 24 inches (609.6 mm) on center in any direction where:

- 3.1. Ground snow loads exceed 36 psf (1.197 kN/m²).
- 3.2. Located within 3 feet (914 mm) of a roof edge, hip, eave or ridge.
- 3.3. Located in wind Exposure Category B or greater and the *wind speed* exceeds 120 mph.
- 3.4. Located in wind Exposure Category C or greater and the *wind speed* exceeds 110 mph.

Exception: *Photovoltaic modules* or *racking* may be attached directly to standing seam metal panels using clamps and roofing materials that meet the following criteria:

1. The allowable uplift capacity of clamps shall be not less than 115 pounds for clamps spaced at 60 inches (1525 mm) on center or less as measured along the seam or not less than 75 pounds for clamps spaced at less than 48 inches (1219 mm) on center.
2. Clamp spacing ~~between-perpendicular to~~ seams shall not exceed 24 inches (610 mm). Spacing of clamps along a seam shall not exceed 60 inches (1525 mm).
3. Roofing panels shall comply with all of the following:
 - 3.1. Shall be a minimum of 26 gage steel,
 - 3.2. Shall be a maximum of 18 inches (457 mm) in width,
 - 3.3. Shall be attached with a minimum of #10 screws at 24 inches (610 mm) on center,
 - 3.4. Shall be installed over minimum ½-inch (12.7 mm) nominal wood structural panels attached to framing with 8d nails at 6 inches (153 mm) on center at panel edges and 12 inches (305 mm) on center field nailing.

3402 Modifications to IEBC Chapter 2 Definitions

PRIMARY FUNCTION. A primary function is a major activity for which the facility is intended. Areas that contain a primary function include, but are not limited to, the customer services lobby of a bank, the dining area of a cafeteria, the meeting rooms in a conference center, as well as offices and other work areas in which the activities of the public accommodation or other private entity using the facility are carried out. Mechanical rooms, boiler rooms, supply storage rooms, employee lounges or locker rooms, janitorial closets, entrances, corridors and restrooms are not areas containing a primary function.

SUBSTANTIAL STRUCTURAL DAMAGE. A condition where any of the following apply:

1. The vertical elements of the lateral force-resisting system have suffered damage such that the lateral load-carrying capacity of any story in any horizontal direction has been reduced by more than 33 percent from its predamage condition.
2. The capacity of any vertical component carrying gravity load, or any group of such components, that has a tributary area more than 30 percent of the total area of the structure's floor(s) and roof(s) has been reduced more than 20 percent from its predamage condition, and the remaining capacity of such affected elements, with respect to all dead and live loads, is less than 75 percent of that required by the Building Code for new buildings of similar structure, purpose and location.
3. The capacity of any structural component carrying snow load, or any group of such components, that supports more than 30 percent of the roof area of similar construction has been reduced more than 20 percent from its predamage condition, and the remaining capacity with respect to dead, live and snow loads is less than 75 percent of that required by the Building Code for new buildings of similar structure, purpose and location.

3407 Modifications to IEBC Chapter 7 Alterations—Level 1

3407.6 Structural, IEBC Section 706. The following provisions replace the indicated sections in the IEBC.

IEBC 706.2 Addition or replacement of roofing or replacement of equipment. Any existing gravity load-carrying structural element for which an *alteration* causes an increase in design dead, live or snow load, including snow drift effects, of more than 5 percent shall be replaced or altered as needed to carry the gravity loads required by the *Building Code* for new structures.

Exception: Buildings in which the increased dead load is due entirely to the addition of a second layer of roof covering weighing 3 pounds per square foot (0.1437 kN/m²) or less over an existing single layer of roof covering.