



Amendments to the  
2014 Oregon Structural Specialty Code

Code Amendment Summary:

- Chapter 2 Definitions
- Panic and Fire Exit Hardware, Section 1008.1.10
- Exit Access Travel Distance, Table 1016.2
- Group I-4 Day Care Facilities Corridors, Section 1018
- Shower Control Requirements, Sections 1107.5.1 and 1107.6.4
- Separate Facilities, Section 2902.2
- Solar Photovoltaic Panels/Modules Wind Speed Criteria
- Integration of the *Oregon Solar Installation Specialty Code*

These code amendments have been formatted as insert pages for the *2014 Oregon Structural Specialty Code* (OSSC). When inserted into the code, amendments will face the page containing the existing code language. Pages have been left blank for this purpose.

Instructions:

1. Print these pages **double-sided** in “book” format.
2. Insert the pages facing the page number in the bottom corner.
3. The amended language is depicted as follows:

~~Strikethrough~~ text represents deleted language.

Underlined text represents added language.

For questions regarding the *2014 Oregon Structural Specialty Code*, please visit the code program contacts page on the division website to [contact a building code specialist](#).



ORS 455.485 is not part of this code but is reproduced here for the reader's convenience:

**455.485 Special consideration for rural or remote areas; determination of compliance with fire, life safety and other building code standards.** (1) When adopting the state building code, the Director of the Department of Consumer and Business Services shall give special consideration to the unique needs of construction in rural or remote parts of this state.

(2) Notwithstanding any description of State Fire Marshal duties in ORS 476.030, 476.033, 476.035, 476.150 or 476.155, the Director of the Department of Consumer and Business Services or a local building official administering a building inspection program under ORS 455.148 or 455.150 may determine whether the structure as set forth in the plans and specifications or as constructed meets the standards of the state building code, including but not limited to fire and life safety standards. The State Fire Marshal, or a local fire official for a governmental subdivision exempted from State Fire Marshal regulations as described under ORS 476.030, may provide advice to building officials, inspectors or Department of Consumer and Business Services employees concerning state building code standards. A local building official or department employee shall give consideration to advice of the State Fire Marshal or local fire official that does not conflict with the state building code, but shall retain the authority to make final decisions regarding the code. [2013 c.487 §2 and 2013 c.528 §3]

**APPROVED FIELD EVALUATION FIRM.** An organization primarily established for purposes of testing to approved standards and approved by the Authority Having Jurisdiction.

**ARRAY.** A mechanically integrated assembly of *modules* or panels with a support structure and foundation, tracker, and other components, as required, to form a power-producing unit.

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**CONSTRUCTION.** As it relates to the *State Building Code*, is the systematic process, act, or manner of constructing or assembling a building in part or in whole and any system, device or equipment regulated by the *State Building Code*.

**CUTOOUT.** An area adjacent to a *pathway* for use by fire-fighters to cut a vent if needed. *Cutouts* shall not be less than 30 inches (762 mm) in any dimension. ||

**MAINTENANCE.** As it relates to the applicable structural fire safety features and *means of egress* systems covered in the *fire code(s)* and the *State Building Code*, maintenance is the act of confirming that such systems in occupied structures are maintained in accordance with the plans, drawings, and specifications reviewed and approved by the Director of the Department of Consumer and Business Services or a local *building official* administering a building inspection program under ORS 455.158 or 455.150. Maintenance does not include the act(s) of *construction, reconstruction, alteration, or repair* in new or existing buildings.

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**MODULE.** A complete, environmentally protected unit consisting of solar cells, optics, and other components, exclusive of tracker, designed to generate power when exposed to sunlight.

**NON-OCCUPIED ACCESSORY STRUCTURE.** A structure normally not occupied such as a garage, carport, shed, or agricultural building.

**PATHWAY.** Unobstructed route provided within or around the PV array to provide unimpeded access and egress for firefighting purposes. ||

**PHOTOVOLTAIC (PV).** Relating to electricity produced by the action of solar radiation on a solar cell.

**PHOTOVOLTAIC (PV) SYSTEM.** The total components and subsystems that, in combination, convert solar energy into electric energy suitable for connection to a utilization load.

**RACKING.** A system of components that directly supports the PV modules and transfers the applied loads to the building structure or ground-supported structure.

**RECONSTRUCTION.** As it relates to the State Building Code, is the systematic process, act, or manner of constructing or assembling an existing building in part or in whole and any system, device, or equipment regulated by the State Building Code.

> ~~**SOLAR CODE.** For the purpose of the Oregon Structural Specialty Code, solar code shall mean the Oregon Solar Installation Specialty Code (OSISC) as adopted by ORS 455.020.~~

|| **SOLAR ROOF.** A roof in which a solar *array* is installed.

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**SUPPORTS.** Supports, hangers, and anchors are devices for properly supporting and securing pipe, appurtenances, fixtures, and equipment.

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**1008.1.10 Panic and fire exit hardware.** Doors serving a Group H occupancy and doors serving rooms or spaces with an *occupant load* of 50 or more in a Group A or E occupancy shall not be provided with a latch or lock unless it is *panic hardware* or *fire exit hardware*.

**Exception:** A main *exit* of a Group A occupancy in compliance with Section 1008.1.9.3, Item 2.

Electrical rooms with equipment rated ~~1,200~~ 800 amperes or more ~~and over 6 feet (1829 mm) wide~~ that contain overcurrent devices, switching devices or control devices with *exit* or *exit access* doors shall be equipped with *panic hardware* or *fire exit hardware* where required by Article 110.26(C)(3) of the *Electrical Code*. The doors shall swing in the direction of the egress travel.

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**TABLE 1016.2  
EXIT ACCESS TRAVEL DISTANCE<sup>a</sup>**

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

For SI: 1 foot = 304.8 mm.

- a. See the following sections for modifications to *exit access* travel distance requirements:
  - Section 402.8: For the distance limitation in *malls*.
  - Section 404.9: For the distance limitation through an *atrium* space.
  - Section 407.4: For the distance limitation in Group I-2.
  - Sections 408.6.1 and 408.8.1: For the distance limitations in Group I-3.
  - Section 411.4: For the distance limitation in special amusement buildings.
  - Section 1015.4: For the distance limitation in refrigeration machinery rooms.
  - Section 1015.5: For the distance limitation in refrigerated rooms and spaces.
  - Section 1021.2: For buildings with one *exit*.
  - Section 1028.7: For increased limitation in assembly seating.
  - Section 1028.7: For increased limitation for assembly open-air seating.
  - Section 3103.4: For temporary structures.
  - Section 3104.9: For pedestrian walkways.
- b. Buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or 903.3.1.2. See Section 903 for occupancies where *automatic sprinkler systems* are permitted in accordance with Section 903.3.1.2.
- c. Buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.
- d. Where a sprinkler system may be omitted by Section 903.2.6, the exit access travel distance without a sprinkler system shall be 150 feet.

4. A *fire-resistance rating* is not required for *corridors* in an occupancy in Group B which is a space requiring only a single *means of egress* complying with Section 1015.1.
5. *Corridors* adjacent to the *exterior walls* of buildings shall be permitted to have unprotected openings on unrated *exterior walls* where unrated walls are permitted by Table 602 and unprotected openings are permitted by Table 705.8.
6. A *fire-resistance rating* 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.

## SECTION 1018 CORRIDORS

**1018.1 Construction.** *Corridors* shall be fire-resistance rated in accordance with Table 1018.1. The *corridor* walls required to be fire-resistance rated shall comply with Section 708 for *fire partitions*.

### Exceptions:

1. A *fire-resistance rating* is not required for *corridors* in an occupancy in Group E where each room that is used for instruction has at least one door opening directly to the exterior and rooms for assembly purposes have at least one-half of the required *means of egress* doors opening directly to the exterior. Exterior doors specified in this exception are required to be at ground level.
2. A *fire-resistance rating* is not required for *corridors* contained within a dwelling or sleeping unit in an occupancy in Group I-1 and Group R.
3. A *fire-resistance rating* is not required for *corridors* in *open parking garages*.

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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.

**Exception:** In Group I-1, Condition 2 assisted living facilities, skilled nursing facilities and residential care facilities the folded seat is permitted to be omitted for standard roll-in-type shower compartments and the shower controls may be located on the side walls.

**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, at least 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*.

**1107.5.1.3 Type B units.** In structures with four or more *dwelling units* or *sleeping units intended to be occupied as a residence*, every *dwelling unit* and *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.

|| **1107.5 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 and 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 and 1107.5.1.3. 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

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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.

**Exception:** In Group R-4, Condition 2 assisted living facilities, skilled nursing facilities and residential care facilities the folded seat is permitted to be omitted for standard roll-in-type shower compartments and the shower controls may be located on the side walls.

**1107.6.4.1 Accessible units.** In Group R-4, Condition 1, 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*.

**1107.6.4.3 Type B units.** In structures with four or more *dwelling units* or *sleeping units intended to be occupied as a residence*, every *dwelling unit* and *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 1107.6.4.3. 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

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**1507.17 Photovoltaic modules/shingles.** The installation of photovoltaic modules/shingles shall comply with the provisions of this section and ~~the Solar Code~~ Section 3111 of this code.

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**1509.7 Photovoltaic systems.** Rooftop mounted *photovoltaic systems* shall be designed in accordance with this section and ~~the Solar Code~~ Section 3111 of this 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 in accordance with Chapter 16 and ASCE 7, Section 26.2.

**Exception:** Installations meeting the prescriptive requirements of ~~Section 305.4 of the Solar Code~~ 3111.5.3 of this code.

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**2902.2 Separate Facilities.** Where plumbing fixtures are required, separate facilities shall be provided for each sex.

**Exceptions:**

1. Separate facilities shall not be required for *dwelling units* and *sleeping units*.
2. Separate facilities shall not be required in structures or tenant spaces with a total *occupant load*, including both employees and customers, of ~~45~~ 30 or less.
3. Separate facilities shall not be required in business occupancies with a total *occupant load*, including both employees and customers, of 50 or less.
4. Separate facilities shall not be required in mercantile occupancies in which the maximum occupant load is 100 or less.



## SECTION 3111 SOLAR PHOTOVOLTAIC PANELS/MODULES

**3111.1 Scope.** The provisions of this section shall govern the installation of *photovoltaic (PV)* components including location, materials and structural support. Where the installation of *PV systems* is not covered by this section the installation shall be in compliance with the applicable provisions of this code as defined in ORS 455.020. For electrical installations see the *Electrical Code*.

**Exception:** Where applicable provisions are specified, compliance with the *Residential Code* shall satisfy the requirements of this section when the *PV system* is installed on;

1. Detached *one- and two- family dwellings* and *townhouses* classified as Group R-3, and Group U Occupancies; and
2. Residences used for family child care home or foster care in accordance with ORS Chapters 418, 443 and 657A; and
3. Detached *congregate living facilities* (each accommodating 10 persons or less) and detached *lodging houses* containing not more than five guest rooms.

**3111.2 Definitions.** The following terms are defined in Chapter 2.

ARRAY

CONVENTIONAL LIGHT-FRAME WOOD CONSTRUCTION.

CUTOUT.

DEAD LOAD.

MODULE.

NON-OCCUPIED ACCESSORY STRUCTURE.

PATHWAY.

PHOTOVOLTAIC (PV).

PHOTOVOLTAIC (PV) SYSTEM.

RACKING.

SOLAR ROOF.

SUPPORTS.

**3111.3 Minimum Standards and Quality.** *Photovoltaic (PV)* components, *racking*, support structures and attachments shall be in accordance with the provisions of this section. *PV systems* shall be designed and installed in accordance with this code and the manufacturer's installation instructions.

**3111.3.1 Type of Construction.** *PV systems*, including supporting structure, shall comply with the requirements of Chapter 6 of this code for the structures required to be of non-combustible type of construction or the *Residential Code* as applicable.

**3111.3.2 Material Standards.** *PV modules* shall be certified in accordance with UL 1703 and shall be installed in accordance with the manufacturer's installation instructions.

**3111.3.3 Certification Requirements.** *PV racking* and attachments shall comply with one of the following:

1. Certified to UL 1703 by a nationally recognized testing laboratory and installed in accordance with the manufacturer's installation instructions.
2. For exempt structures in accordance with Section 105.2, documentation demonstrating to the satisfaction of the building official, that the *racking* system has been designed to resist the applicable loads, and installed in accordance with the manufacturer's installation instructions.
3. Designed by an Oregon Licensed Engineer or Architect.
4. Field evaluation by an Approved Field Evaluation Firm.
5. Approval by the *building official*.

**3111.3.4 Fire Classification.** Rooftop mounted *PV systems* shall be non-combustible or have a fire classification that is equal to or greater than the roof assembly required by Section 1505.1 of this code.

**3111.3.5 Weather Protection.** All components of the *PV system* exposed to the weather shall be constructed of materials approved for exterior locations and protected from corrosion or deterioration.

**3111.4 Location.** The location of *Photovoltaic (PV)* components, *racking*, support structures and attachments shall be in accordance with the provisions of this chapter.

**3111.4.1 Zoning Requirements.** The installation of *PV systems* shall comply with the requirements of the zoning requirements of the municipality.

**3111.4.2 Flood Hazard Areas.** Installation of *PV systems* within flood hazard areas, as defined by the Flood Plain Administrator, shall comply with this code or the *Residential Code*, Section R322 as applicable.

**3111.4.3 Building Egress.** *PV systems* shall not be installed in locations that would restrict, or otherwise prevent the use of, the required means of egress and emergency escape and rescue. The means of egress shall comply with Chapter 10 of this code or the *Residential Code*, Section R310 and R311 as applicable.

**3111.4.4 Light and Ventilation.** *PV systems* shall not be installed in locations that would restrict the required light and ventilation. Light and ventilation shall comply with Chapter 12 of this code or the *Residential Code*, Section R303 as applicable.

**3111.4.5 Rooftop Vent and Drain Clearances.** *PV systems* shall not be installed in locations that would restrict the function of plumbing or mechanical vents, skylights, drains or other rooftop features.

**Exception:** Non-operable skylights in *one- and two-family dwellings*.

**3111.4.6 Mechanical Equipment Clearances.** *PV systems* shall be installed with not less than a 30 inch (762 mm) clearance around mechanical equipment requiring service or maintenance. The specific provisions of the

*Mechanical Code* and *Electrical Code* apply to installations of PV systems.

**3111.4.7 Roof Drainage.** *PV systems* shall not be installed in a manner that would obstruct roof drainage. No vertical *supports* or roof penetrations shall be allowed within 12 inches (305 mm) of each side of the low point of the valley. The *PV modules* or *racking* may extend into the valley no more than 6 inches (152 mm) from the valley low point provided that a minimum 3 inch (76 mm) clearance above the surface of the roof is maintained.

**3111.4.8 Fire Fighter Access and Escape.** To provide access and escape for fire fighters the location of roof-mounted *PV modules* shall comply with the requirements of this section.

**3111.4.8.1 General Pathway Requirements.** All *PV* installations shall include a 36 inch wide (914mm) *pathway* maintained along three sides of the *solar roof*. The bottom edge of a roof with a slope that exceeds 2:12 shall not be used as a *pathway*. All *pathways* shall be located over a structurally supported area and measured from edge of the roof and horizontal ridge to the *solar array* or any portion thereof.

**Exception:**

1. On structures with a *PV array* area of 1,000 square feet (92.90 m<sup>2</sup>) or less installed on a roof with a slope that exceeds 2:12 and with an intersecting adjacent roof and where no section is larger than 150 feet (45720 mm) measured in length or width:
  - 1.1 Where the *PV array* does not exceed 25% as measured in plan view of total roof area of the structure, a minimum 12 inch (305mm) unobstructed *pathway*, shall be maintained along each side of any horizontal ridge.
  - 1.2 Where the *solar array* area exceeds 25% as measured in plan view of total roof area of the structure, a minimum of one 36 inch (914 mm) unobstructed *pathway* from ridge to eave, over a structurally supported area, must be provided in addition to a minimum 12 inch (305 mm) unobstructed *pathway* along each side of any horizontal ridge.
2. *Pathways* are not required on *non-occupied accessory structures* provided they are separated from occupied structures by a 6 feet (3048 mm) minimum separation distance or by a minimum two-hour fire rated assembly.
3. *Townhouses* providing fire separation as required by the applicable code at the time of construction may be considered one structure and comply with the provisions of Section 3111.4.8.1(1.1).

Where *townhouses* are separated by real property lines and *pathways* cross real property lines, the *building official* shall review, approve and maintain a record of all easements for access related to the *PV system* installation. Easements may be general in nature

or they may describe specific locations. The applicant shall provide a copy of the recorded easement to the *building official* prior to issuance of the building permit. Easements shall be recorded for each affected dwelling unit and the book and page number provided to the jurisdiction having authority.

**3111.4.8.2 Intermediate Pathway Locations.** Systems that include a *solar array* section that is larger than 150 feet (45720 mm) measured in length or width shall have additional intermediate *pathways*. An intermediate *pathway* not less than 36 inches (914 mm) wide separating the *array* shall be provided for every 150 feet (45720 mm) of *array* including offset modules or angled installations. The maximum square footage of an *array* shall not exceed 22,500 ft<sup>2</sup> (2090 m<sup>2</sup>) without the installation of an intermediate *pathway*.

**3111.4.8.2.1.** Where a system is required to have intermediate *pathways*, all *pathways* shall have one or more *cutouts* located adjacent to the *pathway*. No point on the *pathway* shall be more than 25 feet (7620) from a *cutout*.

**3111.4.8.3 Prohibited Locations.** *Pathways* shall not be located within 12 inches of the low point of a valley.

**3111.4.8.4 Smoke and Heat Vents.** In structures where smoke and heat vents have been installed to comply with the requirements of the *Fire Code*, Chapter 9 Smoke and Heat Vents and Chapter 32 High Piled Storage, a 36 inch (914 mm) wide *pathway* to and around each vent shall be provided for fire department access, maintenance and testing of these vents.

**3111.4.8.5 Electrical Component Location.**

**3111.4.8.5.1** Disconnects, j-boxes, combiner boxes or gutters shall not be located in any required *pathway* or *cutout*.

**3111.4.8.5.2** Raceways on flat roofs that cross a required *pathway* shall be bridged to avoid tripping hazards. Raceways shall not be permitted in required *pathways* on roofs with a slope that exceeds 2:12 (17-percent slope).

**3111.4.9 Alternate Installations.** In accordance with Section 104.11 of this code, an alternative material, design, location, method of construction, or means of safe fire fighter access and egress may be approved by the *building official*.

**3111.5 Structural.** *Photovoltaic (PV)* components, *racking*, support structures and attachments shall be in accordance with the provisions of this section.

**3111.5.1 Module Attachment.** *PV modules* shall be attached in accordance with the manufacturer's installation instructions and to account for all loads, including *dead loads*, snow loads, wind loads and seismic loads, as prescribed by this code.

**3111.5.2 Racking.** *Racking* shall comply with this section.

**3111.5.2.1 Building Penetrations.** All penetrations shall be flashed or sealed in a manner that prevents moisture from entering the wall and roof.

**3111.5.2.2 Structural Support and Attachment.** *Racking* and *racking supports* shall be positively attached to the structural components or blocking in accordance with this section. *Racking* and *racking supports* installed in accordance with manufacturer's specifications or be designed in accordance with this code and shall be mounted in accordance with one of the following:

1. Installed in accordance with manufacturer's specifications and be designed in accordance with this code.
2. Installed in accordance with Section 3111.5.3.
3. Positively attached to the structural components or blocking through the use of screws, bolts, j-bolts, or other approved means. Such attachment shall not be accomplished by the use of toenails or nails subject to withdrawal. *Racking* and *racking supports* shall be mounted to structural components and shall not be attached to wall or roof coverings, trim or structural sheathing as a means of structural support.
4. Attached to standing seam metal roofs with connectors in accordance with manufacturer's installation instructions.
5. Certified non-penetrating or minimally penetrating systems installed in accordance with the manufacturer's installation instructions.

**3111.5.2.3 Roof Mounted Racking.** Roof-mounted supporting structures shall be certified in accordance with Section 3111.3.3, and shall be designed in accordance with accepted engineering practice, constructed and installed to safely support all loads, including *dead loads*, snow loads, wind loads and seismic loads as prescribed by this code and in accordance with Section 3111.5.3.

**3111.5.2.4 Ground Mounted Racking.** Ground-mounted supporting structures, and all parts thereof, shall be designed, constructed and installed to safely support all loads, including *dead loads*, flood loads, snow loads, wind loads and seismic loads as prescribed by this code.

The bottom of *modules* shall be at least 18 inches (457 mm) clear from ground level.

**3111.5.3 Prescriptive Installations.** Roof installations on *conventional light-frame construction* which complies 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 supporting roof framing shall be *conventional light framed wood construction* with pre-engineered trusses or roof framing members at a spac-

ing of 24 inch (610 mm) on center maximum that comply with the applicable allowable spans in Table 2308.7.2(1-6) for the specific loads including ground snow loads not exceeding 50 psf and wind loads that do not exceed Risk Category II, Ultimate Wind Speed of 120 mph [95 mph three-second gust in the Residential Code] in exposure C or Risk Category II, Ultimate Wind Speed of 135 mph [105 mph three-second gust in the Residential Code] in exposures A or B as defined in Section 1609 of this code. Where the grade cannot be verified it is assumed to be #2 Douglas-Fir Larch.

**Exception:** Roof framing in compliance with the applicable allowable spans in Tables 2308.7.2(1-6) of this code and Tables R802.5.1(7-8) of the Residential Code for the specific loads including ground snow loads not exceeding 70 psf and wind exposure limited to exposure A, B or C shall satisfy the requirements of this section when the *PV system* is installed on;

1. Detached one and two family dwellings and townhouses classified as Group R-3, and Group U Occupancies; and
2. Residences used for family child care home or foster care in accordance with ORS Chapters 418, 443 and 657A; and
3. Detached congregate living facilities (each accommodating 10 persons or less) and detached lodging houses containing not more than five guest rooms.

**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 3111.5.3(1) and (2). The combined weight of the *PV modules* and *racking* shall not exceed 4.5 pounds per square foot (2.0412 kPa). *PV modules* or *racking* shall be directly attached to the roof framing or blocking. Attachments must be spaced no greater than 48 inches (1219 mm) on center in any direction. Attachments shall be spaced no greater than 24 inches (609.6 mm) on center in any direction where:

- 3.1. Ground snow loads exceed 25 psf; or
- 3.2. Located within 3 feet (91.44 cm) of a roof edge, hip, eave or ridge; or
- 3.3. Wind exposure is B or ~~more greater~~ and Risk Category II, Ultimate Wind Speed exceeds 120 mph [95 mph three-second gust in the Residential Code]; or wind exposure is exposure C and wind speed is 85 MPH or more.

3.4 Wind exposure is C or greater and Risk Category II, Ultimate Wind Speed exceeds 110 mph [85 mph three-second gust in the Residential Code].

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

1. The allowable uplift capacity of clamps shall not be less than 115 pounds for clamps spaced at 60 inches (1525 mm) on center or less as measured along the seam or not be less than 75 pounds for clamps spaced at less than 48 inches (1219 mm) on center.
2. Clamp spacing between seams shall not exceed 24-inches (610 mm). Spacing of clamps along a seam shall not exceed 60-inches.
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 1/2-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.
4. **Height:** Maximum *module* height above roof shall be 18 inches (457 mm) from top of *module* to roof surface and in accordance with Figures 3111.5.3(1) and (2).
5. **Submittal Requirement.** See Chapter 1 for requirements.

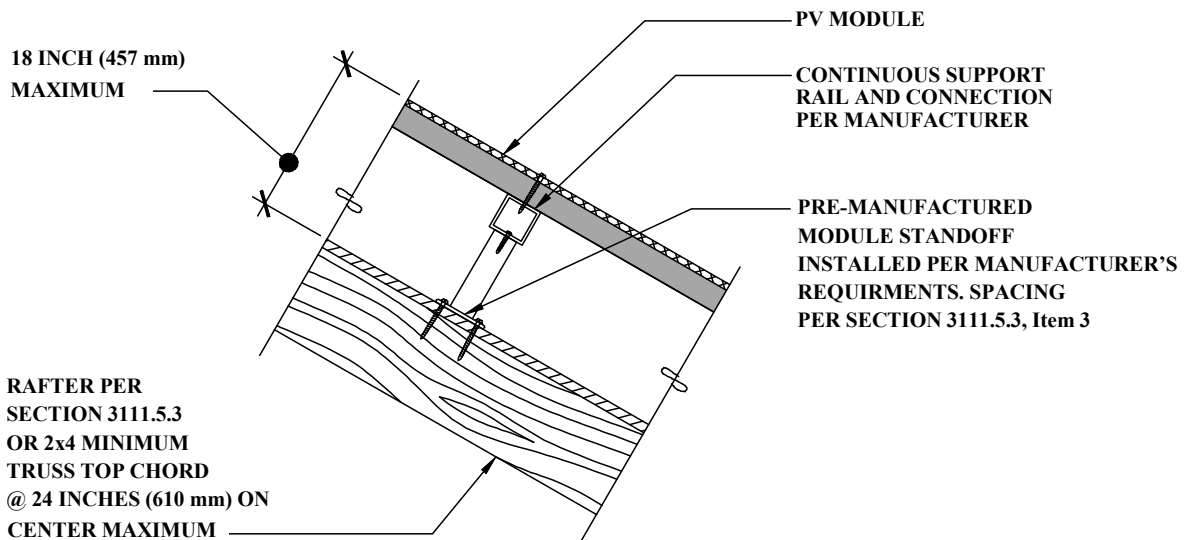


Figure 3111.5.3(1)  
LOADING

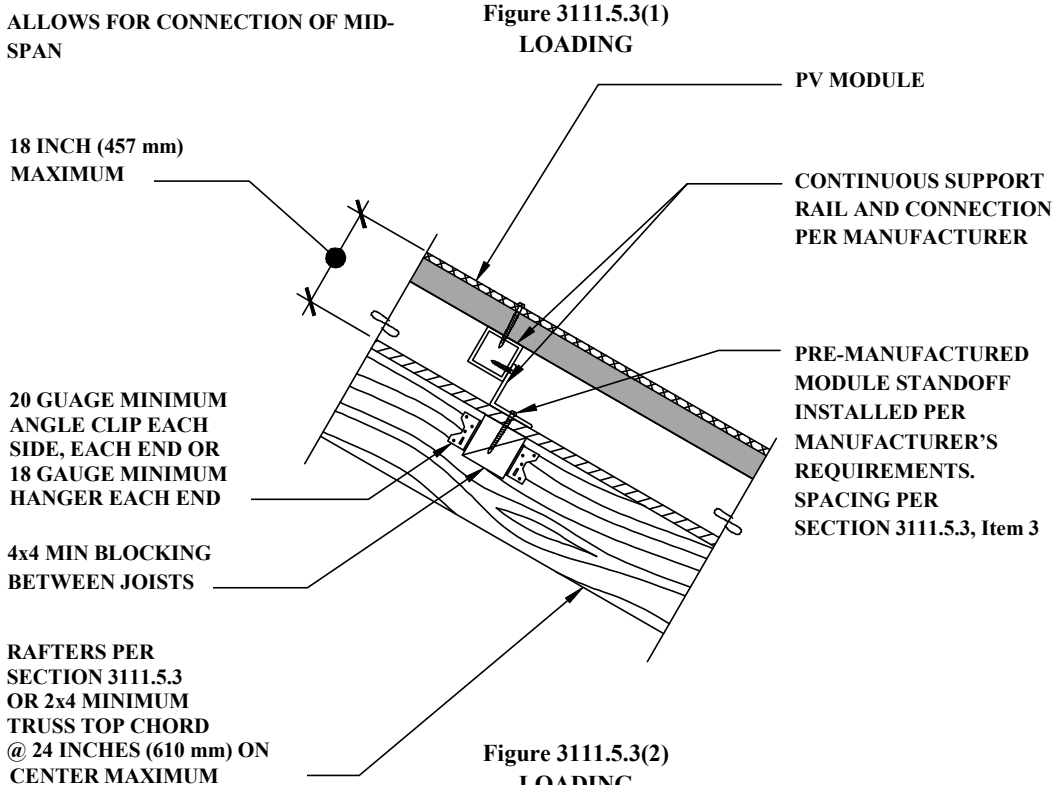


Figure 3111.5.3(2)  
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