



Josephine County, Oregon

BUILDING SAFETY DEPARTMENT

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Photovoltaic Review Requirements For Prescriptive Roof Mount Installations

Property Owner Information	
Property Owner name:	
Installation address:	
City:	State: OR Zip:
Structure on which modules are to be installed:	
Day Phone: ()	Evening Phone: ()
Email address:	
Contractor:	CCB#:
Day Phone: ()	Evening Phone: ()
Email Address:	

- Attach a simple site plan showing the location of the PV system in relation to buildings, structures, property lines, and as applicable, flood hazard areas.
- System must be shown in sufficient details to assess whether the fire-fighter access & escape requirements of section 304.9 or one of the exceptions have been met.
- Attach a detailed plan showing the PV system racking attachments.
"System must be shown in sufficient detail to assess whether the requirements of section 305.4 have been met"

The plans must be on 8.5 x 11 or larger paper.

Wind Design

If No to any of the following Questions, the project may not be submitted using the prescriptive path defined in SEC. 305.4 of the "Oregon Solar Installation Specialty Code".

- Does the project site have wind speeds less than or equal to 95 MPH in exposure C or 105 MPH in exposures A or B? **Yes No (Circle one)**
- Is the module height less than 18 inches above the roof in accordance with section 305.4? **Yes No (Circle one)**

Structural Information

All Structures:

Answer Questions listed below by circling appropriate response.

If no, on any of these requirements, the project may not be submitted using the prescriptive path defined in SEC. 305.4 of the "Oregon Solar Installation Specialty Code".

- Is this conventional light framed wood construction or pre-engineered trusses spaced 24" O.C. or less? **Yes No**
- Is the weight of the PV modules and racking less than 4.5 pounds per square foot? **Yes No**
- Is the roofing material metal, single layer wood shingle, or not more than two layers of Composition shingle? **Yes No** *Check method that applies below.*

Metal

Wood Shingle

Composition

If roofing is standing seam metal, fill out section below

The following Questions pertain only to standing seam metal roofs.

If no, on any of these requirements, the project may not be submitted using the prescriptive path defined in SEC. 305.4 of the "Oregon Solar Installation Specialty Code".

- Is the metal gauge a minimum thickness of 26? **Yes No**
- Are clamps designed to withstand uplift of at least 115 pounds for clamps spaced at 60 inches on center or less, or at least 75 pounds for clamps spaced at 48 inches on center or less? **Yes No**
- Is the spacing of the clamps as measured along the seam less than or equal to 24" O.C.? **Yes No**
- Is the roofing panel width 16" or less? **Yes No**
- Will the roofing panel attachments be at least #10 screws at 24- inches on center or less? **Yes No**
- Will the roofing panels be installed over minimum ½ inch nominal wood structural panels attached to framing with min. 8d nails at 6 inches on center at panel edges and 12-inches on center field nailing? **Yes No**

SEC. 304.9, "Fire Fighter Access and Escape", and 305.4 "Prescriptive Installations" are shown below. See "Oregon Solar Installation Specialty Code" for additional requirements not shown here @ (http://www.cbs.state.or.us/external/bcd/programs/solar/solar_code/2010_OSISC.pdf)

304.9 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.

304.9.1 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 m²) 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 304.9.1(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. **PANEL PATHWAY LOCATIONS**

NOTE: See Section 304.10 for alternate installations.

304.9.2 Intermediate Pathway Locations. Systems that include a solar array section that is larger than 150 feet (45 720 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 (45 720 mm) of array including offset modules or angled installations. The maximum square footage of an array shall not exceed 22,500 ft². (2090 m²) without the installation of an intermediate pathway.

304.9.2.1. 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.

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

305.4 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 spacing of 24 inch (610 mm) on center maximum that comply with the applicable allowable span in Table 305.4.1 (See Appendix B) for the specific loads including ground snow loads not exceeding 50 psf and wind loads that do not exceed 95 MPH in exposure C or 105 MPH in exposures A or B as defined in 1609 of the *Building 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 span in Table 305.4.2 (See Appendix B) for the specific loads including ground snow loads not exceeding 70 psf and wind exposure is limited to exposure A, B or C shall satisfy the requirements of this section when the PV system is installed on; Page 20 of 36 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 Figure 305.4(1). 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. See Figures 305.4(1). These 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;

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 and wind speed 95 MPH or more or wind exposure is exposure C and wind speed is 85 MPH or more.

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 or along seams shall not be less than 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 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.

4. Height: Maximum module height above roof shall be 18 inches (457 mm) from top of module to roof surface and in accordance with Figure 305.4(1).

5. Submittal Requirement. See Section 105.2 for requirements.

PV Modules

- **Manufacturer:** _____
- **Model Number:** _____
- **Listing Agency:** _____

Applicant name (please print)

Applicant Signature

Date