



# Code Amendment Proposal Application

OSSC 22-16

Department of Consumer & Business Services  
Building Codes Division  
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## APPLICANT INFORMATION

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Representing: Structural Engineers Association of Oregon

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## PROPOSAL INFORMATION

Specialty code: Oregon Structural Specialty Code (OSSC)

Code section(s): 3111.3.5.3

Briefly explain the subject of your proposal: The proposal clarifies roof framing requirements to qualify for prescriptive solar installations.

## Code Review Committee Outcomes

Dec. 2, 2021 – Approved.



## STRUCTURAL ENGINEERS ASSOCIATION OF OREGON

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### PART I – CODE AMENDMENT LANGUAGE

You must provide exact language for your code proposal. Failure to provide language will invalidate the application. Include all code sections that require changes and use the following format to show additions and deletions from the code — strikethrough for deleted text and underline and bold for new text.

Note: Where applicable, the proposed code language should show how the existing Oregon amendments will integrate with the base model code or if the proposal is rescinding an existing Oregon amendment. Any modification to the new model code should note or reflect any current Oregon amendments related to this language.

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**Section 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 a prescriptive and shall not require an engineered design if all of the following criteria are met:

#### 1. Roof Structure:

**1.1 For other than detached one-and-two family dwellings and townhouses classified as Group R-3 and Group U occupancies** ~~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 (610mm) 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~~

**1.2 For detached one-and-two family dwellings and townhouses classified as Group R-3 and Group U occupancies the ground snow load does not exceed 70 psf and the site is limited to wind exposure category B or C**

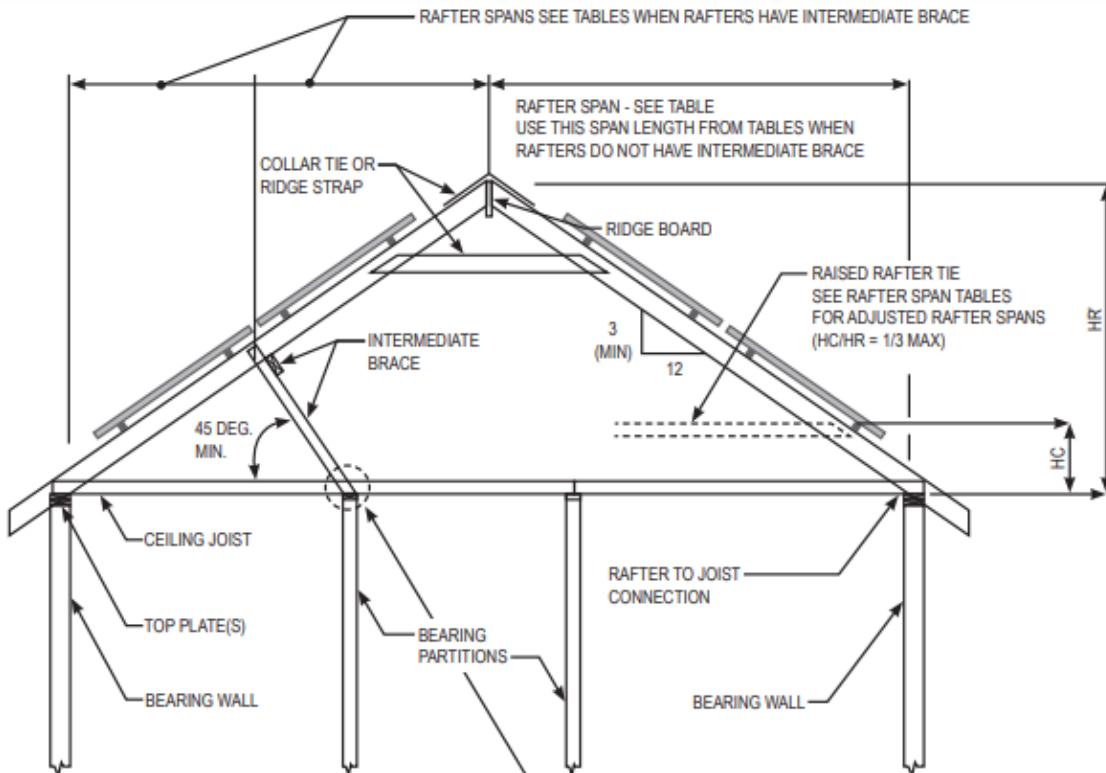
**1.3 Existing supporting roof framing is conventional light-frame construction with pre-engineered trusses or rafters spaced at 24inches (610mm) on center maximum**

**1.4 Existing rafter spans and ceiling joists shall comply with Sections 2308.7.1,2308.7.2 and 2308.7.3. Where rafter spans are based on intermediate supports provided between the ridge**

**and eave, such support or brace shall bear directly on bearing wall or partitions below. See Figure 3111.3.5.2.3(1)**

**1.5 Valley and hips shall comply with section 2308.7.3. and shall be supported at the ridge by a brace or post that bears on bearing wall below. Where roof rafters require intermediate support to comply with the rafter span tables, hip and valley rafters shall also be supported with an intermediate support/brace.**

**1.6 Where the existing grade and species of the rafters and ceiling joists cannot be verified, it is assumed to be #2 Douglas Fir-Larch**



For SI: 1 inch = 25.4 mm, 1 foot = 305 mm, 1 degree = 0.018 rad.

Note: Where ceiling joists run perpendicular to the rafter, rafter ties shall be installed in accordance with Section R802.3.1

$H_c$  = Height of ceiling joists or rafter ties measured vertically above the top of rafter support walls.

$H_R$  = Height of roof ridge measured vertically above the top of rafter support walls.

Note: To qualify as an intermediate support or brace for rafters, the intermediate brace must bear on a bearing wall. Where the intermediate brace/support, bears on the ceiling joist, the intermediate brace shall not be considered as a support for rafters and rafter span shall be from exterior bearing wall to ridge.

**FIGURE 3111.3.5.2.3(1)**

## **PART II – CODE AMENDMENT PROPOSAL REQUIREMENTS**

Generally, proposals should only suggest amending the technical and scientific matters within the scope of the specialty code. Administrative matters are adopted and amended to align with statutes and rules governing the state building code.

Those administrative matters not regulated by a specialty code, include, but are not limited to:

- Licensing or certification requirements, or other qualifications and standards for businesses or workers;
  - Structure or equipment maintenance requirements;
  - Matters that conflict with federal or state law; and,
  - Matters that conflict with other specialty codes or publications adopted by the division.
- Review the statutes and rules governing the state building code and ensure that your proposal is enforceable by the specialty code for which you are proposing an amendment.**

## **PART III – CODE AMENDMENT PROPOSAL CRITERIA**

Code amendment proposals must conform to the requirements in ORS 455.020, ORS 455.030, ORS 455.110, and OAR 918-008-0060. All proposals must provide justification and the particular circumstances requiring the amendments. View the proposal criteria on page 3 of this application.

### **Code Amendment Proposal Criteria**

#### **Proposal**

1. Describe the concept and purpose of this proposal.

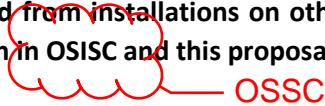
**The proposal clarifies the requirements for roof framing to qualify for prescriptive solar installations to enable uniform and consistent understanding and implementation of the prescriptive requirements for solar installation in the OSSC. Purpose of proposal:** When provisions for solar installations were first adopted in the Oregon Solar Installation Specialty Code (OSISC), the provisions included helpful figures such as R802.5.1 from the Oregon Residential Specialty Code which provided some clarity to the requirements for roof rafter spans, intermediate support requirements etc. When the provisions were moved from the OSISC to the OSSC these figures and Tables were dropped. This has created some confusion with specific requirements.

2. What problem in the existing Oregon code or national model code is this proposal solving? How does this amendment address the issue? If you have evidence demonstrating the problem, submit that information.
  - a) If this proposal corrects any unforeseen or probable outcomes resulting from the application of a code section, explain how.
  - b) If this proposal corrects inadequate application by a code section to a method, material or design, explain how.
  - c) If this proposal eliminates conflicting, obsolete, or duplicative code provisions or standards between Oregon-adopted codes, statutes or regulations, explain why.
  - d) If this proposal is for a fire or life safety matter, or is it otherwise needed to protect the health, safety, welfare, comfort and security of occupants and the public, explain why.
  - e) If this proposal is necessary to address unique geographic or climatic conditions within Oregon, explain why.
  - f) If there are alternatives to this proposal that solve the problem, explain why this proposal is the best or a necessary solution.
  - g) If this proposal provides for the use of unique or emerging technologies, or promotes advances in construction methods, devices, materials and techniques, explain how.
  - h) If this proposal meets any energy conservation or indoor air quality requirements, explain how.
  - i) If this proposal involves the adoption of an electrical or plumbing building product, note if the appropriate advisory board approved the product.

**The proposal specifies specific sections of the code that pertain to conventional wood framing that need to be met for rafter spans, ceiling framing requirements, hip valley framing and highlights the requirements for intermediate bracing that were clarified in the figures that were omitted. The only requirement that may be considered as added is the requirement to add intermediate supports to hip and valley framing if roof rafters require an intermediate support to meet the prescriptive span**

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requirements. This based on engineering principles and judgment and it is the authors contention that even though this may not be explicitly stated in the provisions of the code, it is a matter of practice and common sense that if a rafter needs intermediate support, then the hips which support a larger tributary area and span longer would also need an intermediate support. The proposal also clarifies in a clearer language the snow load and wind speeds installations on R-3 and U group occupancies are relaxed from installations on other occupancies. This intent was included in the commentary to this section in OSISC and this proposal just provided clear language



3. Has this been proposed at the national model code level. If so, explain when it was proposed, what happened, and why it was not adopted. Provide all associated national model code hearing information and background.

**The proposed amendment is to the provisions specific to OSSC and are not part of the model code. To our knowledge this has not been discussed at the national level.**

### **Implementation And Fiscal Impact**

1. Explain how the proposed provisions would be enforced? Are additional inspections or permits required? Describe any necessary equipment, training, tests or special certifications.

**This will be enforced by the plans examiner reviewing the plans for code compliance. No additional inspections, equipment or training is required.**

2. What is the fiscal impact of this proposal? Provide a cost benefit analysis and include the resources or methods you used to determine the fiscal impact.
  - a) If this proposal adds to the cost of construction, explain how the added cost contributes to the health and safety of occupants, or is necessary to conserve scarce resources.
  - b) If there are any other adverse fiscal impacts or cost savings passed on to the general public, the construction industry, local and state governments, and small businesses, an interested person must describe the added or reduced cost of a proposed code amendment, and describe the adverse fiscal impact or cost savings in relation to the current Oregon specialty code.
  - c) If this proposal will affect the cost of development of a detached single-family dwelling, please indicate the cost. For the purposes of illustrating the change on the cost, please use a 6,000-square-foot parcel and the construction of a 1,200-square-foot detached single-family dwelling on that parcel. The information on the cost must be sufficient to assist the division in preparing a housing cost impact statement.

**The proposal just provides clarity to the intent of existing provisions and should not have any fiscal impact to already existing requirements.**

### **Impacted Stakeholders And Other Specialty Codes**

1. It is important that proposals be shared with stakeholders that will be impacted by them. Was this proposal developed with people or organizations likely to be affected by it? Has it been reviewed or shared with people or organizations likely to be affected by it? If so, who, and if not, why not?

**As part of development of the checklist for Prescriptive installation by City of Portland, informal discussions were held with the Building Codes Division to determine the intent of the original provisions and Energy Trust of Oregon who sought input from solar industry. This proposal stems from this effort to enable uniform and consistent understanding and implementation of the prescriptive provisions of the solar installations in OSSC.**

2. Does this proposal impact other specialty codes or statewide programs?

**No**