

# Comprehensive Design Snow Load Changes in the 2025 OSSC

## Purpose

This bulletin summarizes major changes to design snow load provisions adopted in the 2025 Oregon Structural Specialty Code (OSSC). The 2025 OSSC is based on the 2024 International Building Code (IBC) and ASCE 7-22 Minimum Design Loads and Associated Criteria for Buildings and Other Structures. These changes—initially effective Oct. 1, 2025, and mandatory statewide beginning April 1, 2026—represent the most comprehensive revision to design snow load determination in decades and will affect all OSSC-governed structural designs.

## Background

Since Oregon's first statewide building code in 1974, the Building Codes Division, associated technical code review committees, and governing advisory boards have heavily relied upon the Structural Engineers Association of Oregon's (SEAO) Snow Load Analysis for Oregon, and its expert recommendations to establish codified ground snow loads. Oregon's steep elevation gradients, varying topography, diverse climate zones, and frequent rain-on-snow events historically made national snow load maps insufficient for capturing local conditions.

The SEAO snow load maps from the Snow Load Analysis standards referenced in the OSSC evolved over time—from county-by-county elevation graphs (first published in 1971 and updated in 1978) using a 33-year mean recurrence interval (MRI), to the 2007 PRISM-based (Parameter-elevation Regressions on Independent Slopes Model) 50-year MRI map published through a partnership with Oregon State University, and finally to the 2013 electronic map that adjusted for underestimation revealed by the 2007-2008 winter. This SEAO electronic map has served as Oregon's codified snow load standard source through the 2022 OSSC.

## Transition to ASCE 7-22 and risk-targeted snow loads

SEAO's snow load committee and other membership have been increasingly engaged in the national ASCE process, and in this case, elected to focus on this more modern national mapping and modeling in lieu of maintaining our Oregon-unique electronic map. This transition was carefully reviewed and recommended by SEAO, the 2025 OSSC technical review committee, and the Building Codes Structures Board. The 2025 OSSC adopts ASCE 7-22, replacing Oregon's legacy SEAO snow load map with a national, risk-targeted, digitally mapped ground snow load database, which fundamentally changes how ground snow loads are determined.

## Key changes

### Risk-targeted design

The design basis has shifted from a uniform hazard (50-year MRI) to reliability-targeted ground snow loads. This ensures a uniform risk of structural failure across all regions of the state, rather than simply designing for a specific weather recurrence interval.

### Updated climate data & modeling

ASCE 7-22's ground snow load geodatabase incorporates 30 years of additional, updated climate data and advanced spatial mapping and modeling using RGAMs (Regional Generalized Additive Models) instead of PRISM. These updates improve accuracy and eliminate the historic requirement to adjust snow loads based on differences between modeled and actual elevation.

## Increased ground snow loads

Ground snow loads in the 2025 OSSC cannot be directly compared to prior editions because the underlying methodology, data, and load factors differ. A meaningful comparison requires calculating full design roof snow loads under each code. While national averages show roughly 12% increases, some regions of Oregon will experience significantly higher values.

## Strength-level (ultimate) values

Design ground snow loads are now reported as ultimate-level (strength-based) loads instead of Allowable Stress Design (ASD) values.

## Thermal factor updates

The Thermal Factor (Ct) now depends on the roof insulation R-value and the ground snow load, potentially increasing the roof snow load for well-insulated buildings because roof snow is less likely to melt.

## Minimum roof snow load

Oregon's historic minimum roof snow load requirement (regardless of slope) has been removed. ASCE 7-22 provides minimum roof snow and rain-on-snow surcharge requirements only for defined low-slope roofs.

## Key concepts and critical safety information

To avoid inaccurate and noncompliant designs, code users must conform to the following:

1. **Do not mix old and new methods:** A critical error is combining 2025 OSSC ground snow loads (ultimate-level) value with pre-2025 OSSC load combinations or using pre-2025 OSSC ground snow loads (ASD-level) values with 2025 OSSC load combinations.
2. **Use the correct snow load lookup tool and correct designation within the tool:** The 2025 OSSC requires use of the ASCE 7 Hazard Tool (set to ASCE 7-22 version to match the 2025 OSSC) or the Oregon Design Criteria Hub (2025 OSSC application) to determine the site-specific ground snow load based on the assigned Risk Category of the structure. Both of these tools draw from the same ASCE ground snow load geodatabase and will produce identical values for a given site and Risk Category.

## Transition and implementation considerations

### Residential structures using OSSC snow load provisions

To support developers, home builders, and designers using OSSC snow load provisions for structures governed by the Oregon Residential Specialty Code (ORSC), the division issued Statewide Alternate Method No. 26-01 (linked below). This alternate method allows continued reference to the 2022 OSSC throughout the effective period of the 2023 ORSC (through March 31, 2027).

### Existing buildings (Chapter 34 of the OSSC)

The model 2024 International Existing Building Code (IEBC), incorporated with amendments into Chapter 34 of the OSSC, did not anticipate this major shift in snow load methodology. To maintain flexibility and affordability while preserving reasonable safety for certain repairs and alterations to existing commercial buildings, the division is issuing an interim amendment to Chapter 34 of the 2025 OSSC on April 1, 2026, which was reviewed and recommended by SEAO and the Building Codes Structures Board. This amendment allows specific repairs and alterations to proceed without having to comply with ASCE 7-22 design snow loads unless defined conditions trigger their use.

## Resources

- Statewide Alternate Method No. 26-01: [oregon.gov/bcd/codes-stand/Documents/sam-26-01-23orscresf22ossc.pdf](https://oregon.gov/bcd/codes-stand/Documents/sam-26-01-23orscresf22ossc.pdf)
- ASCE Hazard Tool: [ascehazardtool.org/](https://ascehazardtool.org/)
- Oregon Design Criteria Hub: [oregon.gov/bcd/codes-stand/Pages/design-criteria.aspx](https://oregon.gov/bcd/codes-stand/Pages/design-criteria.aspx)