



Oregon Residential Energy Code

Frequently Asked Questions

The following are typical answers to typical questions. Each specific circumstance may warrant a different answer.

Heated Detached Accessory Buildings

Q We are building a detached garage for our single family home. The garage will be heated. Am I required to insulate the building to the levels specified in the Residential Energy Code?

A No. Heated detached garages and storage buildings are considered non-residential buildings (Oregon Residential Specialty Code, R101.2 – 7). Follow the building envelope requirements specified for “Other” buildings in Chapter 13 of the Oregon Structural Specialty Code.

Insulation on the Exterior of Basement Walls

Q I am installing rigid insulation on the exterior of a basement wall. Is the required insulation value R-15?

A Yes, code states that when R-15 insulation is applied on exterior side of a basement wall, all of the following apply:

- Insulation is a material approved for below ground applications and tested to less than 1 percent for “Water Absorption (max. vol. %)” under ASTM C-272.
- Insulation is installed from the top of the concrete wall to the top of the footing.
- The space between the top of the concrete wall and bottom of the above-grade subfloor is insulated to R-21.

- Insulation is protected adequately from the elements (ultraviolet and mechanical) per manufacturer’s specifications.
- Top of insulation is installed in a manner that allows water run-off and prevents pooling.

Door U-Factors

Q What is the U-factor requirement for the door between the house and garage for Prescriptive Path 1?

A Prescriptive Path 1 specifies a U-factor of 0.20 for the exterior doors. It allows for a door (no larger than 28 square feet) to have a U-factor of 0.54. This is the default U-factor for an untested, unglazed wood door. This door can be located anywhere on the exterior wall.

Under Paths 1, 2 and 7, one unglazed wood door can be used anywhere in the house – in the front, side or back, or between the house and garage. The remainder of the doors must have a U-value of 0.20 or less (better).

Loose-Fill Insulation in Vaulted Ceilings

Q Is there a maximum slope for a scissors truss for installation of loose-fill insulation?

A In effect, yes. Prescriptive Paths 1, 2 and 3 allow the ceiling insulation level in vaulted ceilings to be reduced to R-30 in no more than 50 percent of the heated-space floor area. The Building Code defines a vaulted ceiling as having a 2-in-1 or greater slope.

If you use loose-fill insulation in a ceiling slope greater than 3-in-12, you risk insulation sloughing downward, leaving the top with a greatly reduced insulation level that will not meet code.

Glass Block

Q How can I use glass block in my exterior walls?

A Glass block is considered a window. Its default U-factor is 0.51, which does not comply with Prescriptive Path 1. Glass block can comply with energy code requirements two ways:

- 1 percent of the total exterior wall area can be designated decorative or unique architectural-feature glazing, which need not comply with U-factor requirements.

- If glass block or other decorative glazing area exceeds 1 percent of the total exterior wall, you can demonstrate compliance using thermal performance calculations, in Table N1104.1(2). Use U-0.51 for glass block U-factor, unless the manufacturer has a tested assembly U-value through the “NFRC 101-2004 Procedure for Determining Thermo-Physical Properties of Materials for Use in NFRC-Approved Software Programs.”

Skylights

- Q** Overhead glazing in my new house will exceed 2 percent of the heated-space floor area. How do I comply with energy code requirements?
- A** Overhead glazing is window installed in the roof/ceiling assembly. Prescriptive Paths specify a U-factor of 0.50 for skylights (instead of 0.40) in excess of 2 percent of the heated-space floor area. Skylight area is unlimited for Prescriptive Path compliance for skylights with a tested U-factor of 0.40 or less (better). However, other code provisions may limit their use.

Duplexes/Multi-Family Buildings

- Q** Can a duplex or multi-family building comply with Prescriptive Path 8 requirements when each unit is less than 1,500 square feet?
- A** Prescriptive Path 8 requirements apply to an entire building, not per dwelling unit. It does not matter if each unit in a duplex or multi-family building is under 1,500 square feet. Square footage of the entire building must be 1,500 square feet or less and is the determining factor for this compliance path.

The only exception is an attached single-family dwelling, where two or more single-family dwellings share the same property line (zero lot line), and each unit is on its own property.

Note: When you calculate thermal performance for duplexes or multi-family buildings, you must include the area of the entire building, not each unit.

