

## Simple Overview of 2008 Residential Energy Code Requirements

The State of Oregon mandated that Residential Code be 15 percent more efficient than current code, as of April 1, 2008. To achieve this savings target, several building envelope requirements are upgraded and four new required category measures are added to the Residential Energy Code prescriptive standards. Additionally, builders must choose one of nine energy efficiency options to include in the structure. The total code package will achieve 15 percent savings, while maintaining clear prescriptive standards and allowing builders some flexibility.

The following table lists the prescribed standards. (New categories and new values are **bolded**.)

PRESCRIPTIVE STANDARDS		
Measure <sup>A</sup>	Effective 04/01/08	Pre-Existing Code
Underfloor insulation	<b>R-30</b>	R-25
Slab-on-grade insulation	R-15	R-15
<b>Heated slab</b> , i.e., hydronic heat – underneath entire slab	<b>R-10</b>	n/a
Windows & sliding glass doors	<b>U-0.35</b>	U-0.40
Skylights $\leq$ 2% heated space floor area <sup>B, C</sup>	<b>U-0.75<sup>B, C</sup></b>	U-0.50 <sup>C</sup>
Skylights $>$ 2% heated space floor area <sup>C</sup>	<b>U-0.60<sup>C</sup></b>	U-0.40 <sup>C</sup>
Exterior Door $\leq$ 24 ft <sup>2</sup>	U-0.54	U-0.54
Exterior Door $>$ 24 ft <sup>2</sup>	U-0.20	U-0.20
<b>Exterior doors with <math>&gt;</math> 2 ft<sup>2</sup> glazing<sup>D</sup></b>	U-0.40 <sup>D</sup>	U-0.40
Above grade wall insulation	R-21	R-21
Below grade wall insulation	R-15	R-15
Flat ceiling insulation	R-38	R-38
Vaulted ceilings – limited to $\leq$ 50% heated space floor area	<b>R-38<sup>E</sup></b>	R-30
Vaulted ceilings – $>$ 50% heated space floor area	R-38 <sup>F</sup>	R-38
<b>High efficiency lighting<sup>G</sup></b>	<b>50% fixtures<sup>G</sup></b>	n/a
Forced air duct insulation	R-8	R-8
Heat Pump HSPF	<b>7.7</b>	6.8
<b>Air conditioning SEER</b>	<b>13.0</b>	n/a
<b>Additional Measure must be selected from table on following page</b>		

<sup>A</sup> The prescriptive measure requirements are typically an overall U-factor, but code specifies R-values for standard wood-framed assemblies.

<sup>B</sup> Skylights with vinyl, wood, or thermally broken aluminum frames and low-emissivity coatings shall be deemed to satisfy U-0.75 requirement if total skylight area installed is 2% or less of total heated space floor area.

<sup>C</sup> Pre 04/01/08 skylight U-factor was based on NFRC testing in the vertical plane. Effective 04/01/08 skylight U is tested in the 20 degree overhead plane per NFRC standards.

<sup>D</sup> Hinged doors only – does not include sliding glass doors. Sliding glass doors are categorized with windows. Glazing that is either double pane with low-e coating on one surface, or triple pane shall be deemed to comply with this U-0.40 requirement.

<sup>E</sup> R-38 is representative of insulation installed in a standard wood framed scissor truss (U-0.042).

<sup>F</sup> R-38 is representative of insulation installed in either a wood rafter or wood raised-heel scissor truss (U-0.031).

<sup>G</sup> A minimum fifty percent of permanently installed lighting fixtures (interior and exterior) shall be fitted with compact or linear fluorescent lamps, or a lighting source that has a minimum efficacy of 40 lumens per input watt. Screw-in compact fluorescent lamps will comply with this requirement.

(over)

In addition to the new prescriptive standards specified on the previous table, builders are required to **choose one** of the following nine energy efficiency options. Note: The option selected may pre-empt (be more stringent than) and be installed in place of a required prescriptive standard on the previous page.

Additional Measure Path	Description
1 High efficiency HVAC	90% AFUE furnace or boiler, or 8.5 HSPF heat pump, or 3.0 COP ground-source heat pump
2 High efficiency ducts	Performance Tested Ductwork performed by a contractor certified by ODOE Residential Energy Tax Credit program, or All ducts within the conditioned space and air handler must be sealed combustion-air unit with air supply ducted from outdoors and is located within the conditioned space
3 High efficiency building envelope	R-24 exterior walls, R-30 advanced framing vaulted ceilings, R-49 flat ceilings, and U-0.32 windows and sliding glass doors
4 Zonal electric heat, or ductless furnace/heat pump and one of the high efficiency measures described	75% of permanently-installed lighting fixtures are fitted with energy efficient lamps, or U-0.32 windows and sliding glass doors, or R-30 advanced framing vaulted ceilings and R-49 flat ceilings, or R-24 exterior walls
5 High efficiency windows/ceiling/lighting	R-30 advanced framing vaulted ceilings, R-49 flat ceilings, U-0.32 windows and sliding glass doors, and 75% of permanently-installed lighting fixtures are fitted with energy efficient lamps
6 High efficiency windows/ceiling/water heating	R-30 advanced framing vaulted ceilings, R-49 flat ceilings, U-0.32 windows and sliding glass doors, and natural gas/propane, on-demand water heating with minimum EF of 0.80.
7 High efficiency water heating/lighting	Natural gas/propane, on-demand water heating with min EF of 0.80 and 75% of permanently-installed lighting fixtures have efficient lamps
8 Solar photovoltaic	Minimum 1 Watt / sq ft. conditioned floor space with documentation indicating that Total Solar Resource Fraction is not less than 75%.
9 Solar water heating	Panels shall be Solar Rating and Certification Corporation (SRCC) Standard OG-300 certified and labeled, with documentation indicating that Total Solar Resource Fraction is not less than 75%.