



## Residential Energy Additional Measure Selection

Crook County Community Development  
 300 NE 3<sup>rd</sup> Street, Room 12  
 Prineville, OR 97754  
 (541) 477-3211  
 Web: [co.crook.or.us](http://co.crook.or.us)

Job Address: \_\_\_\_\_

### INSTRUCTIONS

Please select type of construction below; sign, date, and complete the **entire form**. Submit this form with your permit application or your project will be placed on hold until the required information is provided.

- New construction. All conditioned spaces within residential buildings must comply with Table N1101.1 (1) and one numbered additional measure from Table N1101.1 (2).
- Additions. Additions to existing buildings or structures may be made without making the entire building or structure comply if the new additions comply with the requirements of this chapter. (N1101.3)
- Large additions. Additions that are equal to or more than 600 square feet (55 m<sup>2</sup>) in area, must comply with Table N1101.1 (2) on Page 2. (N1101.3. 1) (Note: You must select one numbered measure.)
- Small additions. Additions that are less than 600 square feet (55 m<sup>2</sup>) in area, must select one measure from Table N1101.1 (2) on page 2 or comply with Table N1101.3 below. (N1101.3.2)
- Exception: Additions that are less than 225 square feet (20.90 m<sup>2</sup>) in area are not required to comply with Table N1101.1(2) or Table N1101.3.

**Note: Depending on which Additional Measures you have selected, there may be sub-options that you will have to specify. Check the appropriate box if provided.**

Applicant's signature: \_\_\_\_\_ Print name: \_\_\_\_\_ Date: \_\_\_\_\_

**TABLE N1101.3 - SMALL ADDITION ADDITIONAL MEASURES (SELECT ONE)**

1	Increase the ceiling insulation of the existing portion of the home as specified in Table N1101.2.
2	Replace all existing single-pane wood or aluminum windows to the U-factor as specified in Table N1101.2.
3	Insulate the floor system as specified in Table N1101.2 & install 100 percent of permanently installed lighting fixtures as CFL, LED, or linear fluorescent or a minimum efficacy of 40 lumens per watt as specified in Section N1107.2.
4	Test the entire dwelling with a blower door and exhibit no more than 4.5 air changes per hour @ 50 Pascals
5	Seal and performance test the duct system,
6	Replace existing 80 percent AFUE or less gas furnace with a 92 percent AFUE or greater system.
7	Replace existing electric radiant space heaters with a ductless mini split system with a minimum HSPF of 10.0.
8	Replace existing electric forced air furnace with an air source heat pump with a minimum HSPF of 9.5
9	Replace existing water heater with Natural gas / propane water heater with a minimum UEF 0.90 <u>or</u> electric heat pump water heater with minimum 2.0 COP.

## TABLE N1101.1 (2) ADDITIONAL ENERGY MEASURES

Info added to this sheet in red is for convenience / reference only and does not reflect all energy code requirements.

See 2021 ORSC chapter 11 for complete code requirements.

<b>1</b>	<p><b>High efficiency HVAC system<sup>a</sup></b></p> <p>a. Gas-fired furnace or boiler AFUE 94%, or</p> <p>b. Air source heat pump HSPF 10.0/14.0 SEER cooling, or</p> <p>c. Ground source heat pump COP 3.5 or Energy Star rated.</p>
<b>2</b>	<p><b>High efficiency water heater</b></p> <p>a. Natural gas / propane water heater with a minimum UEF 0.90, or</p> <p>b. Electric heat pump water heater with minimum 2.0 COP, or</p> <p>c. Natural gas / propane tankless / instantaneous heater with minimum 0.80 UEF and Drain Water Heat Recovery Unit installed on minimum of one shower / tub-shower.</p>
<b>3</b>	<p><b>Wall insulation upgrade</b></p> <p>Exterior walls — U-0.045 / R-21 conventional framing + R-5 continuous insulation. Provide exterior wall details.</p>
<b>4</b>	<p><b>Advanced envelope</b></p> <p>Windows — U-0.21 (Area weighted average), and</p> <p>Flat ceiling<sup>b</sup> - U-0.017 / R-60, and</p> <p>Framed floors - U-0.026 / R-38 or slab edge insulation to F-0.48 or less (R-10 for 48"; R-15 for 36" or R-5 fully insulated slab).</p>
<b>5</b>	<p><b>Ductless heat pump</b></p> <p>For dwelling units with all electric heat provide: Ductless heat pump of minimum HSPF 10 in primary zone replaces zonal electric heat sources, and programmable thermostat for all heaters in bedrooms.</p>
<b>6</b>	<p><b>High efficiency thermal envelope UA<sup>c</sup></b></p> <p>Proposed UA is 8% lower than the code UA Calculation required. Recommend BCD Measure 6 thermal performance calculator. <a href="http://Oregon.gov/bcd">Oregon.gov/bcd</a></p>
<b>7</b>	<p><b>Glazing area</b></p> <p>Glazing area, measured as the total of framed openings is less than 12% of conditioned floor area.</p>
<b>8</b>	<p><b>3 ACH air leakage control and efficient ventilation</b></p> <p>Achieve a maximum of 3.0 ACH50 whole-house air leakage when third party tested and provide a whole-house ventilation system including heat recovery with a minimum sensible heat recovery efficiency of not less than 66%.</p>
<p><b>Intermediate Framing</b> = Studs 16" O.C., R-23 insulation, insulated corners and intersections. Rigid insulation R-4 per inch for header voids up to 2" and R-10 insulation for header voids over 2" (see N1104.5.2 for full requirements).</p> <p><b>Advanced Framing</b> = Studs 24" O.C., R-21 insulation, insulated corners and intersections. Rigid insulation R-4 per inch for header voids up to 2" and R-10 insulation for header voids over 2". (See N1104.5.1 for full requirements).</p> <p><b>Minimum required values per code</b> (Partial list for reference only. See table N1101.1(1) for full list and requirements):</p> <p>Walls: R-21 Intermediate Flat ceilings: R-49 Vaulted ceilings: R-30, R-38 with raised truss heels if over 50% floor area vaulted. Slabs: R-15 perimeter + R-10 throughout if heated. Windows: U.27 Ext Doors: U.20, U.40 if glazed Floors: R-30</p>	

For SI: 1 square foot = 0.093 m<sup>2</sup>, 1 watt per square foot = 10.8 W/m<sup>2</sup>.

- a. Appliances located within the building thermal envelope shall have sealed combustion air installed. Combustion air shall be ducted directly from the outdoors.
- b. The maximum vaulted ceiling surface area shall not be greater than 50% of the total heated space floor area unless vaulted area has a U-factor no greater than U-0.026. (U-0.026 = R-38 with advanced roof framing (full height insulation to wall.) Raised truss heels typically required.)
- c. In accordance with Table N1104.1(1), the Proposed UA total on the Proposed Alternative Design shall be a minimum of 8% less than the Code UA total on the Standard Base Case.