2014 Energy Efficiency Additional Measures Requirements

All new dwellings and areas that are added to existing dwellings shall meet the envelope requirements of ORSC Table N1101.1(1). Portions of existing dwellings that are affected by new construction shall meet the envelope requirements of ORSC Table N1101.2. In addition, Additional Measure Requirements per ORSC N1101.1 (for new construction) and N1101.3 (for additions) are required as follows:

- ❑ Construction of **New Residential Structure**: Complete Sections A **and** B
- ❑ Construction of **Large Additions** (additions of 600 SF or more, or additions that are more than 40% of the existing heated floor area, whichever is less): Complete Sections A **and** B
- ❑ Construction of **Small Additions** (additions that are between 400 and 600 SF, or between 15 to 40% of the existing heated floor area, whichever is less): Complete Section C, or either Section A or B (for entire structure).
- ❑ **Exempt Additions**: Additions that are less than 15% of the existing heated floor area or 200 square feet in area (whichever is less), have no additional measures required.

All Energy Efficiency components must be reflected on the plans. For all structures, a minimum of 50% of permanently installed lighting fixtures shall have high efficacy lamps.

Section A: Envelope Enhancement Measure, Table N1101.1(2) (Select One)

❑ 1 High efficiency walls & windows:

- Exterior walls – R-19+5 (insulation sheathing)/SIPS, and one of the following options:
  - ❑ Windows – Max 15% of conditioned area, **or**
  - ❑ Windows – U-0.30

❑ 2 High efficiency envelope:

- Exterior walls – R-21 Intermediate framing, **and**
- Vaulted ceilings – R-30 Advanced framing, **and**
- Flat ceilings – R-49, **and**
- Framed floors – R-38, **and**
- Windows – U-0.30, **and**
  - ❑ Doors – All doors U-0.20, **or**
  - ❑ Additional 15% of permanently installed lighting fixtures as high-efficacy lamps or Conservation Measure D and E

❑ 3 High efficiency ceiling, windows and duct sealing:

(Cannot be used with Section B: Conservation Measure E)

- Vaulted ceilings – R-30 Advanced framing (not more than 50% of the heated floor area), **and**
- Flat ceilings – R-49, **and**
- Windows – U-0.30, **and**
- Performance tested duct systems (ODOE documentation to be submitted to building inspector prior to final inspection)

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❑ **4 High efficiency thermal envelope UA:**

- Proposed UA is 15% lower than the Code UA when calculated in Table N1104.1(1)

❑ **5 Building tightness testing, ventilation and duct sealing:**

- Mechanical system providing whole-building ventilation per Table N1101.1(3), or ASHRAE 62.2, **and**
- Performance tested duct systems (ODOE documentation to be submitted to building inspector prior to final inspection), **and**
- Blower door test report submitted to building inspector prior to final inspection showing ≤ 6.0 air changes per hour.

❑ **6 Ducted HVAC systems within conditioned space:**
(Cannot be used with Section B: Conservation Measure B or C)

- All ducts and air handler are contained within heated building envelope

Section B: Conservation Measure, Table N1101.1(2) (Select One)

❑ **A High efficiency HVAC system - Select one of the following options:**

❑ Gas-fired furnace or boiler with 90% minimum AFUE (sealed combustion air ducted directly from outdoors if furnace or boiler is within conditioned space), **or**

❑ Air-source heat pump 8.5 minimum HSPF, **or**

❑ Closed-loop ground source heat pump with 3.0 minimum COP

❑ **B Ducted HVAC systems within conditioned space:**

- All ducts and air handlers are within heated building envelope

❑ **C Ductless heat pump:**

- Replace electric resistance heating in at least the primary zone with at least on ductless mini-split heat pump with 8.5 minimum HSPF

❑ **D High efficiency water heating and lighting:**

- Natural gas/propane, on-demand water heating with 0.80 minimum EF, **and**
- Minimum 75% of permanently installed lighting fixtures as CFL or linear fluorescent or minimum 40 lumens per watt

❑ **E Energy management device & duct sealing:**

- Whole building energy management device capable of monitoring or controlling energy consumption, **and**
- Performance tested duct systems (ODOE documentation to be submitted to building inspector prior to final inspection), **and**
- 75% of permanently installed lighting fixtures as high-efficacy lamps

❑ **F Solar voltaic:**

- Minimum 1 watt per square foot of conditioned floor space with Total Solar Resource Fraction ≤ 75%

❑ **G Solar water heating:**

- 40 square feet minimum gross collector area with Total Solar Resource Fraction ≤ 75%

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SECTION C: Small Additions Additional Measures, Table N1101.3 (Select One)

- ❑ **1** Increase the ceiling insulation in the existing home to R-49, or R-21/R-25 for vaulted ceilings.
- ❑ **2** Replace all existing single-paned windows to U-.35.
- ❑ **3** Insulate the floor system to R-30 (for 10" joists) or R-25 (for 8" joists) and install 50% of the permanent lighting as CFL or linear fluorescent or a minimum efficacy of 40 lumens per watt per N1107.2.
- ❑ **4** Test the entire dwelling with a blower door and exhibit no more than 7.0 air changes per hour @ 50 Pascals.
- ❑ **5** Seal and performance test the duct system (ODOE documentation to be submitted to building inspector prior to final inspection).
- ❑ **6** Replace existing 78% AFUE or less gas furnace with a 92% AFUE or greater system.
- ❑ **7** Replace existing electric radiant space heaters with a ductless mini split system with a minimum HSPF of 8.5.
- ❑ **8** Replace existing electric forced air furnace with an air source heat pump with a minimum HSPF of 8.5.
- ❑ **9** Replace existing water heater for a natural gas/propane water heater with a minimum EF of 0.67.
- ❑ **10** Install a solar water heating system with a minimum of 40 square feet of gross collector area.