CITY OF ASHLAND
Community Development Department
51 Winburn Way, Ashland, OR 97520
541-488-5305 Fax 541-552-2050

Oregon Residential Energy Code Checklist

Job Address _____ Permit # BD - _____

Contractor or Contact Name _____ Phone _____

Heating System Type: Electric ____ Gas ____ Other _____ Heated Floor Area: _____ Sq. Ft

Energy Star/Earth Advantage Home? Yes ___ No ___ (See handout for Energy Star minimum required values)

BUIDING COMPONENTS[A]	REQUIRED PERFORMANCE	EQUIVALANT VALUE[b]	BUILDER VALUES
Wall insulation-above grade	U-0.060	R-21[c]	
Wall insulation-below grade	F-0.565	R-15	
Flat ceilings[f]	U-0.031	R-38	
Vaulted ceilings[g]	U-0.042	R-38[g]	
Underfloors	U-0.028	R-30	
Slab edge perimeter	F-0.520	R-15	
Heated slab interior[i]	n/a	R-10	
Windows[j]	U-0.35	U-0.35	
Window area limitation[j,k]	n/a	n/a	
Skylights[l]	U-0.60	U-0.60	
Exterior doors[m]	U-0.20	U-0.20	
Exterior doors w/>2.5 ft^2 glazing[n]	U-040	U-040	
Forced air duct insulation	n/a	R-8	
Two additional measures from table on back of this form	1,2,3,4,5,or 6 and A,B,C,D,E,F or G		

a. As allowed in Section N1104.1, thermal performance of a component may be adjusted provided that overall heat loss does not exceed the total resulting from conformance to the required U-value standards. Calculations to document equivalent heat loss shall be performed using the procedure and approved U-values contained in Table N1104.1(1).
b. R-Values used in this table are nominal for the insulation only in standard wood framed construction and not for the entire assembly.
c. Wall insulation requirements apply to all exterior wood framed, concrete or masonry walls that are above grade. This includes cripple walls and rim joist areas. R-19 Advanced Frame or 2 x 4 wall with rigid insulation may be substituted if total nominal insulation R-value is 18.5 or greater.
d. The wall component shall be a minimum solid log or timer wall thickness of 3.5 inches (90 mm).
e. Below-grade wood, concrete, or masonry walls include all walls that are below grade and do not include those portions of such wall that extend more than 24 inches (609/6 mm) above grade.
f. Insulation levels for ceilings that have limited attic/rafter depth such as dormers, bay windows or similar architectural features totaling not more than 150 square feet (13.9 m^2) in area may be reduced to not less than R-21. When reduced, the cavity shall be filled (except for required ventilation spaces).
g. The maximum vaulted ceiling surface area shall not be greater than 50 percent of the total heated space floor area unless area has a U-factor no greater than U-0.031. The U-factor of 0.042 is representative of a vaulted scissor truss. A 10-inch (254mm) deep rafter vaulted ceiling with R-30 insulation is U-0.033 and complies with this requirement, not to exceed 50 percent of the total heated space floor area.
h. A=Advanced frame construction, which shall provide full required insulating value to the outside of exterior walls.
i. Heated slab interior applies to concrete slab floors (both on and below grade) that incorporate a radiant heating system within the slab. Insulation shall be installed underneath the entire slab.
j. Sliding glass doors shall comply with window performance requirements. Windows exempt from testing in accordance with Section NF1111.2, Item 3 shall comply with window performance requirements if constructed with thermal break aluminum or wood, or vinyl, or fiberglass frames and double-pane glazing with low-emissivity coatings of 0.10 or less. Buildings designed to incorporate passive solar elements may include glazing with a U-factor greater than 0.35 by using Table N1104.1(1) to demonstrate equivalence to building envelope requirements.
k. Reduced window area may not be used as a trade-off criterion for thermal performance of any component.
l. Skylight area installed a 2 percent or less of total heated space floor area shall be deemed to satisfy this requirement with vinyl, wood or thermally broken aluminum frames and double-pane glazing with low-emissivity coatings. Skylight U-factor is tested in the 20 degree (0.35 rad) overhead plane in accordance NFRC standards.
m. A maximum of 28 square feet (2.6 m^2) of exterior door area per dwelling unit can have a U-factor of 0.54 or less.
n. 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.

I certify that I will comply with all applicable requirements of the energy code prior to the final inspection and/or Certificate of Occupancy being approved.

_____ _____
Applicant or Owner Signature Date

(over)

TABLE N1101.1(2)
ADDITIONAL MEASURES

Envelope Enhancement Measure (Select One)	1	**High efficiency walls & windows:** Exterior walls—U-0.047/R-19+5 (insulation sheathing)/SIPS, and one of the following options: Windows—Max 15 percent of conditioned area; or Windows—U-0.30
	2	**High efficiency envelope:** Exterior walls—U-0.058/R-21 Intermediate framing, and Vaulted ceilings—U-0.033/R-30A[d,e], and Flat ceilings—U-0.025/R-49, and Framed floors—U-0.025/R-38, and Windows—U-0.30; and Doors—All doors U-0.20, or Additional 15 percent of permanently installed lighting fixtures as high-efficacy lamps or Conservation Measure D and E
	3	**High efficiency ceiling, windows & duct sealing:** (Cannot be used with Conservation Measure E) Vaulted ceilings—U-0.033/R-30A[d,e], and Flat ceilings—U-0.025/R-49, and Windows—U-0.30, and Performance tested duct systems[b]
	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 & duct sealing:** A mechanical exhaust, supply, or combination system providing whole-building ventilation rates specified in Table N1101.1(3), or ASHRAE 62.2, and The dwelling shall be tested with a blower door and found to exhibit no more than 1. 6.0 air changes per hour[f], or 2. 5.0 air changes per hour[f] when used with Conservation Measure E, and Performance tested duct systems[b]
	6	**Ducted HVAC systems within conditioned space:** (Cannot be used with Conservation Measure B or C) All ducts and air handler are contained within building envelope[i]
Conservation Measure (Select One)	A	**High efficiency HVAC system:** Gas-fired furnace or boiler with minimum AFUE of 90% a, or Air-source heat pump with minimum HSPF of 8.5 or Closed-loop ground source heat pump with minimum COP of 3.0
	B	**Ducted HVAC systems within conditioned space:** All ducts and air handler are contained within building envelope[i]
	C	**Ductless heat pump:** Replace electric resistance heating in at least the primary zone of dwelling with at least one ductless mini-split heat pump having a minimum HSPF of 8.5. Unit shall not have integrated backup resistance heat, and the unit (or units, if more than one is installed in the dwelling) shall be sized to have capacity to meet the entire dwelling design heat loss rate at outdoor design temperature condition. Conventional electric resistance heating may be provided for any secondary zones in the dwelling. A packaged terminal heat pump (PTHP) with comparable efficiency ratings may be used when no supplemental zonal heaters are installed in the building and integrated backup resistant heat is allowed in a PTHP
	D	**High efficiency water heating & lighting:** Natural gas/propane, on-demand water heating with min EF of 0.80, and A minimum 75 percent of permanently installed lighting fixtures as CFL or linear fluorescent or a min efficacy of 40 lumens per watt as specified in Section N1107.2[c]
	E	**Energy management device & duct sealing:** Whole building energy management device that is capable of monitoring or controlling energy consumption, and Performance tested duct systems[b], and A minimum 75 percent of permanently installed lighting fixtures as high-efficacy lamps
	F	**Solar photovoltaic:** Minimum 1 watt/sq ft conditioned floor space[g]
	G	**Solar water heating:** Minimum of 40 ft^2 of gross collector area[h]

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

a. Furnaces located within the building envelope shall have sealed combustion air installed. Combustion air shall be ducted directly from the outdoors.

b. Documentation of Performance Tested Ductwork shall be submitted to the building official upon completion of work. This work shall be performed by a contractor certified by the Oregon Department of Energy's (ODOE) Residential Energy Tax Credit program and documentation shall be provided that work demonstrates conformance to ODOE duct performance standards.

c. Section N1107.2 requires 50 percent of permanently installed lighting fixtures to contain high efficacy lamps. Each of these additional measures adds an additional percent to the Section N1107.2 requirement.

d. A = advanced frame construction, which shall provide full required ceiling insulation value to the outside of exterior walls.

e. The maximum vaulted ceiling surface area shall not be greater than 50 percent of the total heated space floor area unless vaulted area has a *U*-factor no greater than *U*-0.026.

f. Building tightness test shall be conducted with a blower door depressurizing the dwelling 50 Pascal's from ambient conditions. Documentation of blower door test shall be submitted to the Building Official upon completion of work.

g. Solar electric system size shall include documentation indicating that Total Solar Resource Fraction is not less than 75 percent.

h. 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 percent.

i. A total of 5 percent of an HVAC systems ductwork shall be permitted to be located outside of the conditioned space. Ducts located outside the conditioned space shall have insulation installed as required in this code.