



**NORTHWEST ENERGY STAR® HOMES**  
**Certification Requirements**  
**Single Family Homes Oregon**

**NWBOP 1**  
**Ducted Natural Gas Fired Furnaces or Heat Pumps**

Builder Option Packages (BOPs) are prescriptive methods for labeling new homes as ENERGY STAR. All requirements of the NWBOP shall be met in order to qualify a home for Northwest ENERGY STAR Homes Certification in Oregon upon verification by a Northwest ENERGY STAR Homes Verifier.

Measure	Code Requirements		ENERGY STAR Requirements				Comments for meeting ENERGY STAR Requirements
			Envelope Upgrade	On Demand/ Tankless Water Heater	Wall Upgrade	Ducts & HVAC Equipment Inside	
<b>Insulation</b>							
Ceiling	Flat	R-38	R-49	R-38	R-49	R-38	Requires insulation inspection.
	Rafter Vault	R-30	R-30				Requires insulation inspection.
	Scissor Truss	R-38	R-38				Requires insulation inspection.
Wall	R-21	R-21	R-21 + R-3 Sheathing		R-21	Requires intermediate framing techniques and insulation inspection.	
Below-Grade Wall	R-15	R-19				Requires insulation inspection.	
Floors Over Unconditioned Space	R-30	R-38	R-30			Insulation in floor joist cavity. Perimeter insulation not allowed.	
Slab Floor	Unheated	R-15 Perimeter	R-10 Full Slab	R-15 Perimeter	R-10 Full Slab or R-15 Perimeter with R-21 Wall + R-5 Sheathing	R-15 Perimeter	Applies to all concrete slab floors on or below grade. R-5 thermal break at slab edge. Perimeter insulation shall be installed for a distance of 2 feet vertical, horizontal or combined distance. In areas east of the Cascade Mountains, 4 feet is recommended.
<b>Doors &amp; Windows</b>							
Glazing	Max glazing area	no limit	21% of Heated Floor Area				
	Windows	U - 0.35	U- 0.32 Max	U- 0.35 Max	U- 0.32 Max	U- 0.35 Max	Combined window and skylight area. Up to 1% of heated floor area is exempt.
	Skylights	see code	code compliant Skylights, max area limited to 5% heated floor space				See code to determine rating requirements.
Doors	R-5	R-5					
<b>Ducts</b>							
Insulation	R-8	R-8			exempt		
Sealing	Option 2: Mastic or inside envelope OR no requirement	Mastic paste			Ducts & HVAC equip located in conditioned space. Mastic paste required.	Tape not allowed.	
Max Leakage	Option 2: ≤0.06 CFM/ft² or 75 CFM Total @ 50Pa OR no requirement	≤0.06 CFM/ft² or 75 CFM Total @ 50Pa			No duct testing required.	All forced air heating and cooling system ducts shall be installed according to Northwest ENERGY STAR Homes Specifications for sizing and leakage. Performance testing is required by a certified contractor.	
Return Air provisions	designed to industry standards	Rooms with 2 or more supplies require dedicated return air path, rooms with single supplies may have door undercuts of at least 1" as a minimum.				Dedicated return air path options include transfer grills, jump-over ducts, or fully-ducted return for rooms with multiple supply ducts.	
<b>Ventilation &amp; Air Sealing</b>							
Whole House Ventilation	Operable Windows	Mechanical Ventilation				Meets Oregon Code Section 303.1 mechanical ventilation provisions	
Spot Ventilation	See code section 303.3	ENERGY STAR qualified or 2 sone or less Bath Fans				Applies only to bathing and spa areas.	
Envelope Tightness	no requirement	7.0 ACH @ 50Pa				Blower Door Testing to be performed by a certified ENERGY STAR verifier.	



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Measure	Code Requirements	ENERGY STAR Requirements				Comments for meeting ENERGY STAR Requirements
		Envelope Upgrade	On Demand/ Tankless Water Heater	Wall Upgrade	Ducts & HVAC Equipment Inside	
<b>Heating &amp; Cooling Equipment</b>						
Gas Furnace or Gas Heat Source	Option 1: 90 AFUE OR 78 AFUE	90 AFUE				
Heat Pump	Option 1: 8.5 HSPF OR 7.7 HSPF	8.5 HSPF/SEER 13				Heat Pumps must be installed according to ENERGY STAR Homes Specifications for sizing, controls, airflow and refrigerant charge. Must pass approved heat pump commissioning method and be performed by a certified contractor.
Air Conditioner	SEER 13	SEER 13				
Combustion Appliance Zone (CAZ)	no requirement	CAZ Pressure Test required				Whenever a non-sealed combustion appliance used for primary space or water heating is present within a building, a CAZ pressure test is required.
<b>Water Heating</b>						
Natural Gas	≤60 gal	0.55	<b>0.62</b>	On Demand Water Heater EF 0.82	<b>0.62</b>	Commercial Water Heater Requirements Rated Capacity (Gallons) 70-74 75-79 80-84 85-89 90-94 95-99 100+
	> 60 gal	0.55	<b>0.62</b>		<b>0.62</b>	
Electric	≤70 gal	0.87	<b>0.93</b>	NA	<b>0.93</b>	Max Standby Loss (Btu/hr) 900 930 950 980 1000 1030 1050
	> 70 gal	0.87	<b>0.92</b>	NA	<b>0.92</b>	
<b>Appliances &amp; Lighting</b>						
Dishwasher	no requirement	ENERGY STAR Qualified				
Lighting	50%	75%				Of permanent fixtures shall be fitted with either ENERGY STAR bulbs or ENERGY STAR fixtures.

**Additional Notes:**

Items in **BOLD** exceed Oregon Code Requirements.

Thermal Bypass Checklist/Critical Detail requirements defined in Northwest ENERGY STAR Specification for Oregon.

Intermediate framing requires at a minimum insulated headers (see Northwest ENERGY STAR Specification for Oregon).

All insulation materials shall be installed according to the manufacturer's instructions to achieve proper densities, avoid compression and voids, and maintain uniform R-values. To the maximum extent possible, insulation shall extend over the full component area to the intended R-value. All R-values specified are nominal. Insulation inspection is required as outlined in the Northwest ENERGY STAR Specification for Oregon.

Reference the Northwest ENERGY STAR specifications Appendix B for requirements on placing ducts inside the conditioned space.



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**NWBOP 2**  
**Zonal Electric Heating**

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Measure	Code Requirements	ENERGY STAR Requirements	Comments for meeting ENERGY STAR Requirements
<b>Insulation</b>			
Flat	R-38	≥49 R-Value	Requires insulation inspection. Completed Thermal Bypass Inspection Checklist required.
Rafter Vault	R-30	≥38 R-Value	Requires insulation inspection. Completed Thermal Bypass Inspection Checklist required.
Scissor Truss	R-38	≥49 R-Value	Requires insulation inspection. Completed Thermal Bypass Inspection Checklist required.
Wall	R-21	≥21 R-Value; With R-4 Sheathing	Requires insulation inspection. Completed Thermal Bypass Inspection Checklist required.
Below-Grade Wall	R-15	≥19 R-Value	Requires insulation inspection. Completed Thermal Bypass Inspection Checklist required.
Floors Over Unconditioned Space	R-30	≥30 R-Value	Insulation in floor joist cavity. Perimeter insulation not allowed.
Slab Floor	R-15 Perimeter	≥15 R-Value, 4 foot depth	Applies to all concrete slab floors on or below grade. R-5 thermal break at slab edge. Perimeter insulation shall be installed for a distance of 2 feet vertical, horizontal or combined distance. In areas east of the Cascade Mountains, 4 feet is recommended.
<b>Doors &amp; Windows</b>			
Max glazing area	no limit	≤15% of Window Area to Floor Area Ratio	
Windows	U - 0.35	≤0.32 U-Value; > 0.42 SHGC	Combined window and skylight area. Up to 1% of heated floor area is exempt.
Skylights	see code	code compliant Skylights, max area limited to 5% heated floor space	See code to determine rating requirements.
Doors	R-5	R-5	
<b>Ducts</b>			
Insulation	R-8	≥R-8 on ducts in unconditioned space	
Sealing	No requirement for non-heating ductwork	Mastic paste	Tape not allowed.
Max Leakage	No requirement for non-heating ductwork	≤ 0.06 CFM to outdoors / ft2 of conditioned floor area or 75 CFM total	Performance testing is required by a certified contractor.
Return Air provisions	designed to industry standards	Rooms with 2 or more supplies require dedicated return air path, rooms with single supplies may have door undercuts of at least 1" as a minimum.	Dedicated return air path options include transfer grills, jump-over ducts, or fully-ducted return for rooms with multiple supply ducts.
<b>Ventilation &amp; Air Sealing</b>			
Whole House Ventilation	Operable Windows	Central ventilation with ≥70% Heat Recovery	
Spot Ventilation	See code section 303.3	ENERGY STAR qualified or 2 zone or less Bath Fans	Applies only to bathing and spa areas.
Envelope Tightness	no requirement	2.5 ACH @ 50Pa	Blower Door. Testing to be performed by a certified ENERGY STAR verifier.
<b>Heating &amp; Cooling Equipment</b>			
Zonal Electric Heating	no requirement		
Combustion Appliance Zone (CAZ)	no requirement	CAZ Pressure Test required	Whenever a non-sealed combustion appliance used for primary space or water heating is present within a building, a CAZ pressure test is required.



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<b>Water Heating</b>			
Natural Gas	≤60 gal	< 60 Gal = 0.62	Commercial Water Heater Requirements Rated Capacity (Gallons) 70-74 75-79 80-84 85-89 90-94 95-99 100+ Max. Standby Loss (Btu/h) 900 930 950 980 1000 1030 1050
	> 60 gal	> 60 Gal = 0.61	
Electric	≤70 gal	< 70 Gal = 0.93	
	> 70 gal	> 70 Gal = 0.92	
Showheads	no requirement	Low-flow Showerhead Required	
Pipe Insulation	no requirement	R-4 Pipe Insulation Required	
<b>Appliances &amp; Lighting</b>			
Dishwasher	no requirement	ENERGY STAR Qualified	Of permanent fixtures shall be fitted with either ENERGY STAR bulbs or ENERGY STAR fixtures.
Lighting	50%	75%	

**Additional Notes:**

- Items in **BOLD** exceed Oregon Code Requirements.
- Thermal Bypass Checklist/Critical Detail requirements defined in Northwest ENERGY STAR Specification for Oregon.
- All insulation materials shall be installed according to the manufacturer's instructions to achieve proper densities, avoid compression and voids, and maintain uniform R-values. To the maximum extent possible, insulation shall extend over the full component area to the intended R-value. All R-values specified are nominal. Insulation inspection is required as outlined in the Northwest ENERGY STAR Specification for Oregon.
- Reference the Northwest ENERGY STAR specifications Appendix B for requirements on placing ducts inside the conditioned space.