



## ENERGY STAR® Homes Northwest Certification Requirements Single Family Homes



**BOP 2**  
Zonal Electric, Propane & Oil  
Furnaces

Builder Option Packages (BOPs) are a prescriptive method for labeling new homes ENERGY STAR. All requirements of the BOP shall be met in order to qualify a home for ENERGY STAR Homes Northwest certification and verified by an ENERGY STAR Homes Northwest Verifier. Additional details are contained in the ENERGY STAR Homes Northwest Specifications. Local code requirements apply where they are more stringent. Trade-off options are detailed in the ENERGY STAR Homes Northwest Technical Compliance Options.

Insulation			
Ceiling		R-38	Flat or vaulted.
Wall		R-21 + 2.5 sheath	R-19 is option with advanced framing techniques.
Floors Over Unconditioned Space		R-30	Insulation in floor joist cavity. Perimeter insulation not allowed.
Slab Floors	Unheated	R-10 Perimeter	Applies to all concrete slab floors above 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.
	Heated Radiant	R-15 Full Slab	
Basement Wall		R-19	Below grade walls can extend up to 24 inches above grade.
Windows & Doors			
Glazing	Windows	U-0.30	
	Skylights	U-0.50	Skylight area shall not exceed 5% of heated floor area.
	Max. Glazing Area	21% of Heated Area	Combined window/skylight area. Up to 1% of heated area exempt.
Doors		R-5	One door up to 28 ft <sup>2</sup> exempt.
Ducts			
Insulation		R-8	Ducts inside heated space exempt
Sealing		Mastic	Cloth duct tapes not allowed.
Max. Leakage		<0.06 CFM per ft <sup>2</sup> Floor <b>OR</b> 75 CFM Total @ 50 Pa	All forced air heating and cooling system ducts shall be installed according to ENERGY STAR Homes Northwest Specifications for sizing and leakage. Performance testing is required.
Ventilation & Air sealing			
Ventilation System		Central ventilation with 70% heat recovery	
Envelope tightness		2.5 ACH @ 50 Pa	Air tightness in this path must be verified by blower door test before certification is granted.
Heating & Cooling Equipment			
Propane Furnace		80 AFUE	Installed according to ENERGY STAR Homes Northwest Specifications for sizing, controls, airflow and refrigerant charge. Performance testing is required.
Water Heating			
Natural Gas	? 61 gal	0.61	
	? .60 gal	0.60	
Electric	All sizes	0.93	
Appliances & Lighting			
Appliances		ENERGY STAR Qualified	Applies to built-in appliances only.
Lighting (required)		ENERGY STAR Qualified	A minimum of 50% of sockets to be either ENERGY STAR bulbs, fixtures, or both

