

2006 Washington State Energy Code Residential Compliance Form

(Revised July 2009)



Applicant Name: _____ Project Number: _____
 Heating System Type (Check one): Forced Air Furnace Zone Heat Other: _____
 MAXIMUM HEATING SYSTEM SIZE (BTU/Hr, from reverse side): _____

MECHANICAL VENTILATION SYSTEM TYPE (Check one):

- Continuous Whole House Ventilation With Exhaust Fans (2009 IMC 403.8.6)
 Continuous Whole House Ventilation Integrated With A Forced Air System (2009 IMC 403.8.7)
 Continuous Whole House Ventilation With A Supply Fan (2009 IMC 403.8.8)
 Continuous Whole House Ventilation With A Heat Recovery System (2009 IMC 403.8.9)

This project complies with the following:

- The project is a single-family residence or duplex.
- The project is wood frame OR all the insulation is interior or exterior of the framing.
- All building components will meet the requirements of the table below.
- The building will meet all other applicable provisions of the WSEC and IRC.

WASHINGTON STATE ENERGY CODE PRESCRIPTIVE BUILDING ENVELOPE REQUIREMENTS^{0,1}

(Requirements based on 2006 WSEC Table 6-1, Option IV)

Glazing Area ¹⁰ % of Floor	Glazing U-Factor		Door ⁹ U-Factor	Ceiling ²	Vaulted Ceiling ³	Wall ¹² Above Grade	Wall Int ⁴ Below Grade	Wall Ext ⁴ Below Grade	Floor ⁵	Slab ⁶ On Grade
	Vertical	Overhead ¹¹								
Unlimited	0.35	0.58	0.20	R-38	R-30	R-21	R-21	R-10	R-30	R-10

0. Nominal R-values are for wood frame assemblies only or assemblies built in accordance with Section 601.1.

1. Minimum requirements for each option listed. For example, if a proposed design has a glazing ratio to the conditioned floor area of 13%, it shall comply with all of the requirements of the 15% glazing option (or higher). Proposed designs which cannot meet the specific requirements of a listed option above may calculate compliance by Chapters 4 or 5 of this Code.

2. Requirement applies to all ceilings except single rafter or joist vaulted ceilings. 'Adv' denotes Advanced Framed Ceiling.

3. Requirement applicable only to single rafter or joist vaulted ceilings where both (a) the distance between the top of the ceiling and the underside of the roof sheathing is less than 12 inches and (b) there is a minimum 1-inch vented airspace above the insulation. Other single rafter or joist vaulted ceilings shall comply with the "ceiling" requirements. This option is limited to 500 square feet of ceiling area for any one dwelling unit.

4. Below grade walls shall be insulated either on the exterior to a minimum level of R-10, or on the interior to the same level as walls above grade. Exterior insulation installed on below grade walls shall be a water resistant material, manufactured for its intended use, and installed according to the manufacturer's specifications. See Section 602.2.

5. Floors over crawl spaces or exposed to ambient air conditions.

6. Required slab perimeter insulation shall be a water resistant material, manufactured for its intended use, and installed according to manufacturer's specifications. See Section 602.4.

7. Int. denotes standard framing 16 inches on center with headers insulated with a minimum of R-10 insulation.

8. This wall insulation requirement denotes R-19 wall cavity insulation plus R-5 foam sheathing.

9. Doors, including all fire doors, shall be assigned default U-factors from Table 10-6C.

10. Where a maximum glazing area is listed, the total glazing area (combined vertical plus overhead) as a percent of gross conditioned floor area shall be less than or equal to that value. Overhead glazing with U-factor of U=0.40 or less is not included in glazing area limitations.

11. Overhead glazing shall have U-factors determined in accordance with NFRC 100 or as specified in Section 502.1.5.

12. Log and solid timber walls with a minimum average thickness of 3.5" are exempt from this insulation requirement.

Maximum Heating System Size Calculation

STRUCTURES NOT GREATER THAN 2500 SQUARE FEET MAY USE 20 BTU'S X THE HEATED SQUARE FOOTAGE OR COMPLETE THE CALCULATION FOR A MORE ACCURATE HEATING SYSTEM SIZE LIMIT.

STEP 1: Determine TOTAL ENVELOPE COMPONENT UA.

- ❑ Multiply the (A)PRESCRIPTIVE U-VALUE by the (B)AREA of each component to find the (C)ENVELOPE COMPONENT UA. (For SLAB ON GRADE, multiply the PRESCRIPTIVE SLAB F-VALUE by the SLAB PERIMETER.)
- ❑ Add all the values in column (C)ENVELOPE COMPONENT UA. Insert where noted in the STEP 2 Table.

ENVELOPE COMPONENT	(A) PRESCRIPTIVE U-VALUE	(B) AREA	(C) ENVELOPE COMPONENT UA
WALL (R-21)	0.06	Height x length of exterior walls minus door and windows	
FLOOR (R-30)	0.029	Width x length	
VAULTED CEILING (R-30 @ 500 SF MAX.)	0.034	Width x length	
CEILING (R-38)	0.031	Width x length	
WINDOWS	0.35	Height x width	
DOORS	0.20	Height x width	
SKYLIGHTS	0.58	Width x length	
	PRESCRIPTIVE SLAB F-VALUE	SLAB PERIMETER (lineal feet)	
SLAB ON GRADE (R-10)	0.54		
		(D) TOTAL ENVELOPE COMPONENT UA	

STEP 2: Determine MAXIMUM HEATING SYSTEM SIZE.

- ❑ Enter (D) from the table above where noted in the table below.
- ❑ Enter (E) Conditioned Space Volume = height x width x length of the conditioned spaces.

HEAT LOSS PATH	VALUE	□T (DEG. F.)	ACH	ADJUSTMENT FACTOR	HEAT LOAD CONTRIBUTION
ENVELOPE COMPONENTS	(D)	53			(F)
AIR LEAKAGE	(E)	53	0.6	0.018	(G)
DUCTS	(D) or 0 if no ductwork			0.2	(H)
				DESIGN HEAT LOAD (F) + (G) + (H)	(I)
				MAXIMUM HEATING SYSTEM SIZE 1.5 x (I)	

What if I Still Have Questions...

For additional energy code information, contact the Building Plan Review staff. Our voice mail phone number is (360) 754-3355, extension 7289. You can also contact our department by email at permit@co.thurston.wa.us.