CITY OF SPOKANE DEPARTMENT OF BUILDING AND CODE ENFORCEMENT
R-3 SINGLE FAMILY RESIDENCE & DUPLEX BUILDING APPLICATION

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(509)-625-6300 FAX (509) 625-6124 WWW.BUILDINGSPOKANE.ORG

PLEASE READ THE FOLLOWING LIST CAREFULLY AND PROVIDE ALL REQUIRED MATERIAL WITH YOUR APPLICATION.

TWO (2) FULL SETS OF PLANS
TWO (2) SITE PLANS WHICH INCLUDE THE CURB TO PROPERTY LINE DISTANCE, DRAINAGE PLAN AND WIDTH OF DRIVEWAY AT THE PROPERTY LINE.
ONE (1) LEGAL ADDRESS SLIP FROM ENGINEERING SERVICES

PROJECT ADDRESS _____ PARCEL NUMBER _____

LEGAL DESCRIPTION _____

CURB TO FRONT PROPERTY LINE DISTANCE _____ FRONT PROPERTY LINE TO BUILDING DISTANCE _____
IF CORNER LOT, CURB TO SIDE PROPERTY LINE DISTANCE _____ SIDE PROPERTY LINE TO BUILDING DISTANCE _____

IS HOUSE LOCATED ON OR WITHIN 40' OF A SLOPE? YES ____ NO ____ IF YES, % OF SLOPE _____

Owner/Builder Name _____ Phone	Contractor Name _____ Phone
Street Address	Street Address
City, State, Zip Code	City, State, Zip Code WA State Contractor's License _____
Lender Name _____ Phone	Bonding Agent _____ Phone
Street Address	Street Address
City, State, Zip Code	City, State, Zip Code

STYLE OF HOUSE (DUPLEX, SPLIT LEVEL, RANCHER, ETC.) _____ # OF BEDROOMS _____

1ST AND 2ND FLOOR AREA	_____	GARAGE AREA	_____
UNFINISHED BASEMENT AREA	+ _____	UNCOVERED DECK AREA	_____
FINISHED BASEMENT AREA	+ _____	COVERED DECK AREA	_____
BONUS ROOM (SHELL)	+ _____	CARPORT AREA	_____
TOTAL CONDITIONED FLOOR AREA =	_____	AIR CONDITIONED AREA	_____

BUILDING PERMIT REQUIREMENTS FOR ALTERNATE MATERIALS AND CONSTRUCTION METHODS

IF A FROST PROTECTED SHALLOW FOUNDATION (FPSF) WILL BE USED, SUBMIT DETAIL OF THE FOUNDATION WITH PERMIT APPLICATION.

WILL ANY UNCONVENTIONAL CONSTRUCTION MATERIALS OR METHODS (e.g. Foam Form Foundations, Foam Core Panels, etc.) BE USED ON THIS PROJECT? YES ____ NO ____ IF THE ANSWER IS YES, PLEASE EXPLAIN: _____

ENERGY AND VENTILATION CODE INFORMATION REQUEST ON REVERSE SIDE

CITY OF SPOKANE BUILDING DEPARTMENT R-3 SINGLE FAMILY RESIDENCE AND DUPLEX BUILDING APPLICATION CONTINUED

WASHINGTON STATE ENERGY CODE (WSEC) INFORMATION AND WORK SHEET

WSEC SECTION 603.1 (PRESCRIPTIVE METHOD) REQUIRES THE HEATING AND COOLING SYSTEMS TO BE SIZED PER SECTION 503.2 (COMPONENT PERFORMANCE METHOD). THE HEATING AND/OR COOLING DESIGN LOADS FOR THE PURPOSE OF SIZING THE HVAC SYSTEM ARE REQUIRED AND SHALL BE CALCULATED IN ACCORDANCE WITH ACCEPTED ENGINEERING PRACTICE, INCLUDING INFILTRATION AND VENTILATION. THE HEATING AND/OR COOLING SYSTEM SHALL NOT BE SIZED LARGER THAN 150% OF THE CALCULATED LOADS EXCEPT AS ALLOWED BY THE EXCEPTIONS TO WSEC SECTION 503.2.2 (SEE www.energy.wsu.edu/code/code2006.CFM FOR WORKSHEETS.)

THE FOLLOWING DESIGN PARAMETERS SHALL BE USED, FOR INDOOR HEATING 70 DEGREES AND FOR COOLING 78 DEGREES. THE OUTDOOR DESIGN TEMPERATURE IS 4 DEGREES. THE INFILTRATION RATE SHALL BE 0.35 AIR CHANGES PER HOUR (ACH.)

HEAT LOSS CALCULATION _____ BTU/H COOLING HEAT GAIN _____ BTU/H

SIZE OF HEATING SYSTEM _____BTU/H SIZE OF A/C _____BTU/H

FOR HEAT PUMPS PROVIDE THE BALANCE POINT TEMPERATURE AND CALCULATION OF SUPPLEMENTAL HEAT BELOW THE BALANCE POINT.

BALANCE POINT TEMPERATURE _____DEGREES SUPPLEMENTAL HEAT _____BTU/H

THE FURNACE OR AIR CONDITIONING CANNOT BE MORE THAN 150% OF THE CALCULATED HEAT LOSS OR HEAT GAIN (IF INSTALLING BOTH HEATING & A/C CANNOT BE MORE THAN 150% OF THE MOST RESTRICTIVE)

VENTILATION COMPLIANCE

___ WHOLE HOUSE FAN W/ FRESH AIR INLETS

___INTEGRATED FORCED AIR SYSTEM

____SUPPLY FAN SYSTEM

RADON MITIGATION
SEE APPENDIX F IN IRC

____PRESCRIPTIVE (PASSIVE) METHOD

____ ACTIVE SYSTEM (DRAWINGS REQUIRED)

WSEC COMPLIANCE METHOD

FOR ____ SYSTEM ANALYSIS OR _____ COMPONENT PERFORMANCE GO TO www.energy.wsu.edu/code/code2006.CFM A COMPLETED FORM BASED ON THE 2006 WSEC MUST BE SUBMITTED WITH THE APPLICATION.

FOR ____PRESCRIPTIVE PATH, USE FORMULA AND TABLE 6.2 ON THE NEXT PAGE, INDICATE WHICH PRESCRIPTIVE PATH YOU HAVE CHOSEN (PROVIDE WORKSHEETS FROM www.energy.wsu.edu/code/code2006.CFM web site for prescriptive method.)

_____ DIVIDED BY _____ EQUALS _____
TOTAL GLAZING TOTAL CONDITIONED FLOOR AREA GLAZING PERCENTAGE

TABLE 6-2
PRESCRIPTIVE REQUIREMENT S[0,1] FOR GROUP R OCCUPANCY
CLIMATE ZONE 2

Option	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]								
I.	**12%**	**0.35**	0.58	0.20	R-38	R-30	R-21 int[7]	R-21	R-12	R-30	R-10
II.*	15%	**0.35**	0.58	0.20	R-38	R-30	R-19 + R-5[8]	R-21	R-12	R-30	R-10
III.	17%	**0.32**	0.58	0.20	R-38	R-30	R-19 + R-5[8]	R-21	R-12	R-30	R-10
IV.	25% Group R-1 and R-2 Occupancies Only	0.35	0.58	0.20	R-38 / U=0.031	R-30 / U=0.034	R-21 int[7] / U=0.054	R-15	R-12	R-30 / U=0.029	R-10 / F=0.54
V.	Unlimited Group R-3 and R-4 Occupancies Only	0.35	0.58	0.20	R-38	R-30	**R-19+ R-5[8]**	R-21	R-12	R-30	R-10
VI.	**Unlimited Group R-3 and R-4 Occupancies Only**	**0.30**	**0.58**	**0.20**	**R-49 or R-38 Adv**	**R-38**	**R-21 int[7]**	**R-21**	**R-12**	**R-30**	**R-10**
VII.	Unlimited Group R-1 and R-2 Occupancies Only	0.32	0.58	0.20	R-38 / U=0.031	R-30 / U=0.034	R-21 int[7] / U=0.054	R-15	R-12	R-30 / U=0.029	R-10 / F=0.54

* Reference Case

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 complying with note 3. '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-12, 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.

Washington State Energy Code
Prescriptive Approach-Worksheet Instructions

For the Washington State Energy Code (WSEC, 2006 edition), the prescriptive approach is the simplest method of code compliance. However, depending on the prescriptive option and exceptions used, documentation can be quite complex.

This set of forms has been developed to assist permit applicants documenting compliance with the WSEC, 2006 edition.

The followint forms provide much of the required documentation for plan review. The details noted here must also be shown on the drawings (WSEC 104.2.)

This form is not a substitute for the energy code itself. To obtain a copy of the energy or ventilation codes and the worksheets go to the following website address. http//www.energy.wsu.edu/code/code2006.cfm

Which worksheets do I need to complete?

There are three worksheets included in the set of forms from the above referenced website.

Insulation Worksheet:
Glazing Schedule Worksheet:
Heating Sizing Worksheet:

Heating Sizing Worksheet:
The energy and residential code requires a heating and cooling sizing sizing calculations for all projects. If you are using this set of worksheets to size the heating system, you will need to complete all the worksheets. It is important to note that the codes also require a cooling system sizing calculation. This form will not provide the cooling calculation. It does not have the needed solar gains function. If a cooling system is included in your submission, you will not be using the heating system sizing worksheet. Perform a Manual J or equivalent calculation.

Glazing Schedule Worksheet:
There are three reasons to complete the Glazing Schedule. If none apply to your project, you do not need to complete this worksheet. A glazing schedule is required to meet the following conditions.

The Prescriptive option includes a glazing to floor area limit (WSEC 602.7.2.)

Not all the windows, skylights or doors comply with the maximum U-factor requirement. Qualification will be demonstrated using an area weighted window, skylight or door U-factor (WSEC 602.7.2.)

As part of the heating and cooling system sizing calculation (IRC M1401.3 & WSEC 503.2.2.)

Insulation Worksheet:
The insulation worksheet documents the prescriptive option chosen to show compliance. It also provides a few checks on insulation compliance that need more detailed input. This includes the rules for single rafter joist ceiling insulation, heated slabs and in climate zone 2, header insulation. This worksheet is also used to document the reason for submission of the Glazing Schedule Worksheet.

If you are choosing a limited glazing area prescriptive option, completing the Glazing Schedule Worksheet will be the first task.

Completing the Insulation Worksheet:

This is a simple fill form.

Fill in the project information on this worksheet. It will be copied to the other worksheets.

Note what options will be chosen to show compliance.
Note the glazing documentation included.
Note how you will be meeting the single rafter joist requirement if needed.

Complete the Glazing Schedule Worksheet:

Exterior Doors:

The exterior door section is for swinging doors only. Enter the sliding doors in the vertical glazing section of the worksheet.

If a swinging door includes glazing, it may be entered in the vertical glazing schedule or the exterior door schedule.

Obtain NFRC tested U-factor from the door manufacturer or use the U-factors from the WSEC Tables.

Table 10-6A Default U-Factors for vertical Glazing (use for doors with greater than 50% glazing.)
Table 10-6C Default U-Factors for doors (limited to doors with less than 50% glazing.)

Area of windows, doors and skylights are measured using the rough opening area.

Glazing area in exterior doors is added to the total glazing area of the project as follows:
If greater than 50% , 100% of the area is entered in the door glazing area.
If less than or equal to 50%, only the glazed area will be entered in the door glazing area.

Exempt Door: One door, 24 square feet or less is not included in the U-factor glazing area calculations. You must calculate the door area to assure it is 24 square feet or less. This also enters the door heat loss into the heating system size calculation.

Vertical and Horizontal Glazing:

Obtain NFRC tested U-factors from the glazing supplier. These will give the most accurate and likely the most favorable results. If you can't obtain this data, the tables in Chapter 10 of the WSEC must be used.
For default U-factors for vertical glazing, refer to Table 10-6A.
If the window manufacturer can legitimately be claimed as a "small business" (as defined in Chapter 2 *of the* WSEC), *you may use Table 10-6B for default U-factors. Note: the term "small business" refers to the glazing manufacturer, not the builder.*
For default U-factors for overhead glazing refer to Table 10-6E.
If doors are being entered into the vertical glazing table, refer to Table 10-6C and 10-6D.

Single Glazing and Garden Window Exception Schedule:

The WSEC allows single glazing and unrated garden windows to be exempt from the U-factor calculations under the following rules:
The total area of this exemption is limited to 1 percent of the conditioned floor area.
The area of the glazing must be multiplied by 3 and added to the glazing area for the project.

Completing the Heating System Size Worksheet:

This worksheet is used to calculate the design heat load of the structure. It also calculates the maximum heating system size required by code. This worksheet does not perform the required cooling load calculations. Use Manual J or equivalent for cooling system size calculations.

Go to the Outdoor Design Temperature Worksheet Tab. Locate the design temperature for the location near the project. (For Spokane the outdoor winter design temperature is 4 degrees F.)

Calculate and enter the volume of the interior space of the building (conditioned space only.)

Measure the dimensions of each exterior building assembly, wall, attic floor, etc. Enter the area next to the R-value description that matches the construction. If a construction method is selected that is not represented here, select values from Chapter 10 of the WSEC and enter it in one of the blank spaces at the end of each components selection.

Enter the correction factor for duct location. If the ducts are indoors, enter 1. If the ducts are in the crawl space, attic or garage, enter 1.15.