

CITY OF DEER PARK
DEPARTMENT OF BUILDING & SAFETY
P.O. BOX F * 316 E CRAWFORD AVENUE
DEER PARK WA 99006
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(509) 276-8801 FAX (509) 276-5764

Office Use Only
Tr # _____
Amount \$ _____
Ck # _____
Date _____

RESIDENTIAL AND DUPLEX APPLICATION

Lot _____ Block _____ Subdivision _____

Street Address: _____

Zone: _____ Tax Parcel # _____ Lot Area _____ square feet

Owner: _____ Telephone #: _____

Mailing Address: _____

Style of House (Duplex, Rancher, Split, 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 SPACE _____

Contact Person: _____ Telephone #: _____

Resale of Structure Planned: Yes ___ No ___ (REQUIRED)

BUILDER INFORMATION

Contractor License Number _____

Contractor: _____ Telephone #: _____

Mailing Address: _____

Architect/Engineer: _____ Telephone #: _____

Mailing Address: _____

Specify if any unconventional construction materials or methods (e.g. foam form foundations, foam core panels, steel studs, etc.) will be used on this project.

PLEASE RETURN THIS PAGE WITH YOUR PLANS.

Please provide Two (2) full sets of plans and Energy Code Compliance Forms and Two (2) Site Plans drawn to scale which include the curb to property line distance, provide a drainage plan and width of driveway at property line. Please submit all building permit plans and data – 10 days prior to Planning Commission meetings which are held the 2nd and 4th Mondays of every month.

Community Services Director: Roger Krieger

CITY OF DEER PARK
RESIDENTIAL AND DUPLEX APPLICATION – (Continued)
Washington State Energy Code Information

Part 1. Completed Prescriptive Path or Component Performance Forms are required to be submitted with an application for a new single-family residence or duplex building permit. Plans cannot be reviewed until the required forms are submitted.

Design Parameters:

70°F – Indoor Heating Design Temp. -5°F – Winter Outdoor Design Temp.
78°F – Indoor Cooling Design Temp. 96°F – Summer Outdoor Design Temp.

The Prescriptive Path method has a form for a Simple Heating System that can be used to determine the size of the heating system. A cooling system takes a Manual “J” form or similar form. If a heat pump is to be used, the heating contractor shall provide the “Balance Point” for the system. The balance point is where the heat pump cannot maintain the indoor temperature without additional supplemental heat.

Heat Pump Balance Point: _____ **Supplemental Heat:** _____

The furnace or air conditioner/heat pump cannot exceed 150% of the heat loss or heat gain, whichever is larger. If the air handler cannot provide the required CFM to heat and/or cool the structure the next larger AHU can be used.

Part 2. Ventilation Compliance

Whole House Fan w/fresh air inlets Integrated Forced Air Supply Fan System

Part 3. Radon Mitigation – See Appendix F in the IRC for questions.

Prescriptive Active System (drawings or system manufacturer required)

Part 4. Washington State Energy Code Compliance Method – Identify the manner of compliance and complete the forms required by the method selected.

Component Performance Method - Submit 2 completed copies of the Component Performance Worksheets Available from the WSU Extension Energy Program website www.energy.wsu.edu/BuildingEfficiency/EnergCode.aspx (Skip Part 5 below.)

Prescriptive Path Method - Submit 2 completed copies of the Prescriptive Energy Code Compliance Worksheets (attached) or available from the WSU Extension Energy Program website noted above.

Part 5. Glazing Percentage Calculation – The number and size of the windows on the plans must match what is listed in the Prescriptive or Component Performance forms.

_____ divided by _____ = _____
Total Glazing Total Conditioned Floor Area Glazing Percentage

PLEASE RETURN THIS PAGE WITH YOUR PLANS.

Community Services Director: Roger Krieger

City of Deer Park
Building and Planning Department
Attachment to Building Information Sheet
Please keep with your building plans.

DESIGN REVIEW – APPLICATION SUBMITTAL:

Provide two complete sets of building plans for permit approval. Applications for design review shall be filed with the planning department; a determination shall be made whether the application and materials are complete prior to submittal to the planning commission. **Information to be supplied with the application shall include but is not limited to: (check all items provided in submittal)**

- Dimensioned site plan (to scale) Building Floor Plans Building Elevation Views
- Framing plan showings walls, floor system, roof, braced wall panel locations and attachments
- Description of type, color and texture of building finish to be utilized
- Perscriptive Energy Code Compliance Forms (4 pages), or Component Performance Plan Review
(Contact us for link, or go to City of Deer Park Website for electronic link to forms)
- Landscape plan indicating grass area, planting beds, textures of walks, drives and fences

DESIGN REVIEW – STANDARDS:

The following standards and criteria may be used by the planning commission which may require changes in materials, general design layout, and other design changes as may be necessary.

- 1) In addition to the height and minimum setback requirements set forth of the zone in which the property is located, changes in material, height, projections in the vertical or horizontal plane, or similar façade changes should be encouraged on visible exterior building walls. Primary attention shall be given to those sides visible from the public right-of-way.
- 2) The appropriateness of a new or remodeled building to the zoning and area within which it is located, surrounding architectural design, scale, and streetscape appearance should be considered. Integrated and harmonious design themes are encouraged, including the use of consistent materials, colors, textures, and signs on exposed building walls. New development or remodeling should be designed in such a way as to upgrade the appearance and quality of the area and be harmonious with existing improvements. To the extent practical, walkways, patios, court yards, driveways, and parking areas should be complementary in design to the development as a whole.
- 3) Pursuant to Municipal Code, the entire lot is to be landscaped prior to occupancy. Landscaping shall be integrated into the architectural scheme so as to accent and enhance the appearance of the development. Existing mature trees over eight inches in diameter on the site and within the public right-of-way, as well as trees on adjacent property within 20 feet of the common property line, should be considered for preservation in the site planning.
- 4) Rooftop equipment shall be incorporated into the design of the project in such a manner that is completely enclosed on all sides or concealed from view by screening, roofing, or parapets at least six inches higher than the height of the uppermost part of such equipment.

DESIGN REVIEW – APPLICABILITY

The provisions of the design review sections of this chapter shall apply to new buildings, exterior remodeling and exterior changes or to existing buildings for which a building permit is required. Upon approval by the planning commission and issuance of a building permit, no changes to approved plans which affect the exterior of a project shall be permitted unless approved by the planning commission.

DESIGN REVIEW – IMPLEMENTATION: NO CERTIFICATE OF OCCUPANCY WILL BE ISSUED FOR ANY PROJECT UNTIL ALL ASPECTS OF THE APPROVED DESIGN REVIEW APPLICATION HAVE BEEN SATISFACTORILY IMPLEMENTED.

This is including but not limited to building completion. Installation of all landscaping and irrigation, completion of walkways, walls or fences, completion of parking garages or areas and completion of driveway improvements to the roadway within the public right-of-way.

Prescriptive Continuous Footing Calculator Based on 2015 IRC ^{d e}

Designer:	Project Address:
Project Description:	

Soil Bearing Pressure (lb/sq ft) ^a	1500
Roof Snow Load (lb/sq ft) ^b	45

Continuous Footing for Wall Line Identified as:

	Dead Load (lb/sq ft)	Wall Height (ft)	Wall Load (lb/lin ft)
Exterior Light Frame Wood Walls	15		0
Exterior Light Frame Cold-Formed Steel Walls	14		0
Interior Light Frame Wood Walls	10		0
Interior Light Frame Cold-Formed Steel Walls	5		0
Masonry Veneer	50		0
Masonry Walls (8")	80		0
Concrete Walls (6")	85		0
Concrete Walls (8")	110		0
SIP Walls	10		0
Weight of Walls (lbs/lin ft)			0

	Dead Load (lb/sq ft)	Live Load (lb/sq ft)	Tributary Width (ft)	Floor Load (lb/lin ft)
Roof Snow Loads	15	45		0
Floor 2 Live Load	10	40		0
Floor 1 Live Load	10	40		0
Deck Live Load	10	40		0
Weight of Floors and Roof (lb/lin ft)				0

Total Weight of Walls, Floors, and Roof (lb/lin ft)	0
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Continuous Footing Width (in)	12
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Continuous Footing Depth (in)	6
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Spread Footing Identified as:

Point loads greater than 1500 lb	
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Spread Footing Width (in) ^c	12
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Spread Footing Depth (in)	6
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Notes:

a. Minimum soil bearing pressure is 1,500 lb/sq ft

b. Roof Snow Load = 0.7 X Ground Snow Load

c. Provide spread footing at point load location if width is greater than continuous footing width

d. User to input values in white cells only

e. Weights of materials shall not exceed values listed in R301.2.2.2.1



MECHANICAL AND VENTILATION

2012 WSEC SECTION R403.5, 2012 AMENDED IRC SECTION R303.4,
2012 AMENDED IMC SECTION 403.8.5, WAC 51-51-1507, IRC SECTION M1507

JOB ADDRESS: _____

FURNACE BRAND: _____

FURNACE MODEL #: _____

ECM OR VARIABLE SPEED BLOWER? YES NO

TOTAL CONDITIONED FLOOR AREA _____ CFM

OF BEDROOMS _____

REQ AIR FLOW _____ CFM

*TABLE 403.8.1 *TABLE 2A *TABLE M1507.3.3(1)

CONTINUOUS VENTILATION

INTERMITTENT VENTILATION

* REFER TO TABLE 403.8.5.1 OR M1507.3.3(2)

EFFICACY RATING _____ CFM / WATT

* REFER TO TABLE R403.51

RUN % _____

FACTOR _____

INSTALLED AIR FLOW _____ CFM

METHOD

WHOLE HOUSE SUPPLY FAN

VOLUME _____ DUCT SIZE _____

WA ST AMENDED IMC 403.8.5.2
WAC 51-51-1507 IRC SECTION M1507.3.4

*REFER TO TABLE: IMC 403.8.5.2 OR IRC M1507.3.6.2 FOR SIZING
*PROVIDE SUBMITTAL FOR VERIFICATION

WHOLE HOUSE EXHAUST FAN WITH OUTDOOR AIR INLETS

MAKE _____

MODEL _____

VENTILATION RATE AT .25 W.G. _____

SONE RATING AT .1 W.G. _____

WA ST AMENDED IMC 403.8.6
WAC 51-51-1507 IRC SECTION M1507.3.4

*PROVIDE SUBMITTAL FOR VERIFICATION

INTEGRATED FORCED AIR SYSTEM

VOLUME _____ CFM

DUCT SIZE _____

WA ST AMENDED IMC 403.8.7
WAC 51-51-1507 IRC SECTION M1507.3.5
WA STATE AMENDED IMC R403.5.1 *EXCEPTION*

FLEX DUCT

RIGID DUCT

*PROVIDE SUBMITTAL FOR VERIFICATION

HEAT RECOVERY VENTILATION (HRV / ERV)

MAKE _____

MODEL _____

VENTILATION RATE AT .25 W.G. _____

SONE RATING AT .1 W.G. _____

WA ST AMENDED IMC 403.8.6
WAC 51-51-1507 IRC SECTION M1507.3.7

*PROVIDE SUBMITTAL FOR VERIFICATION

ALTERNATE SYSTEM DESIGN

MAKE _____

MODEL _____

VENTILATION RATE AT .25 W.G. _____

SONE RATING AT .1 W.G. _____

WA ST AMENDED IMC 403.8.11
ASHRAE 62.2-2010

*PROVIDE SUBMITTAL FOR VERIFICATION
*REFER TO TABLE 2A

TABLE M1507.3.3(1), 403.8.1, 2A					
(Square Feet)	NUMBER OF BEDROOMS				
	0 - 1	2 - 3	4 - 5	6 - 7	>7
	Airflow in CFM				
<1,500	30	45	60	75	90
1,501 - 3,000	45	60	75	90	105
3,001 - 4,500	60	75	90	105	120
4,501 - 6,000	75	90	105	120	135
6,001 - 7,500	90	105	120	135	150
>7,501	105	120	135	150	165

**TABLE R403.5.1
MECHANICAL VENTILATION SYSTEM FAN EFFICACY**

FAN LOCATION	AIR FLOW RATE MINIMUM (CFM)	MINIMUM EFFICACY (CFM / WATT)	AIR FLOW RATE MAXIMUM (CFM)
Range Hood	Any	2.8 cfm/watt	Any
In-line fan	Any	2.8 cfm/watt	Any
Bathroom, utility room	10	1.4 cfm/watt	<90
Bathroom, utility room	90	2.8 cfm/watt	Any

**TABLE 403.8.5.2
PRESCRIPTIVE SUPPLY FAN DUCT SIZING**

Specified Volume from Table 403.8.1	Minimum Smooth Duct Diameter	Minimum Flexible Duct Diameter
50-90 cfm	4 inch	5 inch
90-150 cfm	5 inch	6 inch
150-120 cfm	6 inch	7 inch
250-400 cfm	7 inch	8 inch

**TABLE M1507.3.3(2)
INTERMITTENT WHOLE-HOUSE MECHANICAL VENTILATION RATE FACTORS^{a,b}**

Run-Time Percentage in Each	25%	33%	50%	66%	75%	100%
Factor	4	3	2	1.5	1.3	1

a. For ventilation system run-time values between those given, the factors are permitted to be determined by interpolation.

b. Extrapolation beyond the table is prohibited

Prescriptive Energy Code Compliance for All Climate Zones in Washington

Project Information

Contact Information

This project will use the requirements of the Prescriptive Path below and incorporate the the minimum values listed. In addition, based on the size of the structure, the appropriate number of additional credits are checked as chosen by the permit applicant.

Authorized Representative _____ Date _____

All Climate Zones		
	R-Value ^a	U-Factor ^a
Fenestration U-Factor ^b	n/a	0.30
Skylight U-Factor	n/a	0.50
Glazed Fenestration SHGC ^{b,e}	n/a	n/a
Ceiling ^k	49 ^j	0.026
Wood Frame Wall ^{g,m,n}	21 int	0.056
Mass Wall R-Value ⁱ	21/21 ^h	0.056
Floor	30 ^g	0.029
Below Grade Wall ^{c,m}	10/15/21 int + TB	0.042
Slab ^d R-Value & Depth	10, 2 ft	n/a

*Table R402.1.1 and Table R402.1.3 Footnotes included on Page 2.

Each dwelling unit in a residential building shall comply with sufficient options from Table R406.2 so as to achieve the following minimum number of credits:

- 1. Small Dwelling Unit: 1.5 credits**
Dwelling units less than 1500 square feet in conditioned floor area with less than 300 square feet of fenestration area. Additions to existing building that are greater than 500 square feet of heated floor area but less than 1500 square feet.
- 2. Medium Dwelling Unit: 3.5 credits**
All dwelling units that are not included in #1 or #3. **Exception:** Dwelling units serving R-2 occupancies shall require 2.5 credits.
- 3. Large Dwelling Unit: 4.5 credits**
Dwelling units exceeding 5000 square feet of conditioned floor area.
- 4. Additions less than 500 square feet: .5 credits**

Table R406.2 Summary

Option	Description	Credit(s)		
1a	Efficient Building Envelope 1a	0.5	<input type="checkbox"/>	
1b	Efficient Building Envelope 1b	1.0	<input type="checkbox"/>	
1c	Efficient Building Envelope 1c	2.0	<input type="checkbox"/>	
1d	Efficient Building Envelope 1d	0.5	<input type="checkbox"/>	
2a	Air Leakage Control and Efficient Ventilation 2a	0.5	<input type="checkbox"/>	
2b	Air Leakage Control and Efficient Ventilation 2b	1.0	<input type="checkbox"/>	
2c	Air Leakage Control and Efficient Ventilation 2c	1.5	<input type="checkbox"/>	
3a	High Efficiency HVAC 3a	1.0	<input type="checkbox"/>	
3b	High Efficiency HVAC 3b	1.0	<input type="checkbox"/>	
3c	High Efficiency HVAC 3c	1.5	<input type="checkbox"/>	
3d	High Efficiency HVAC 3d	1.0	<input type="checkbox"/>	
4	High Efficiency HVAC Distribution System	1.0	<input type="checkbox"/>	
5a	Efficient Water Heating 5a	0.5	<input type="checkbox"/>	
5b	Efficient Water Heating 5b	1.0	<input type="checkbox"/>	
5c	Efficient Water Heating 5c	1.5	<input type="checkbox"/>	
5d	Efficient Water Heating 5d	0.5	<input type="checkbox"/>	
6	Renewable Electric Energy	0.5	<input type="checkbox"/>	
				*1200 kwh
Total Credits				0.00

*Please refer to Table R406.2 for complete option descriptions

Table R402.1.1 Footnotes

For SI: 1 foot = 304.8 mm, ci = continuous insulation, int = intermediate framing.

^a R-values are minimums. U-factors and SHGC are maximums. When insulation is installed in a cavity which is less than the label or design thickness of the insulation, the compressed R-value of the insulation from Appendix Table A101.4 shall not be less than the R-value specified in the table.

^b The fenestration U-factor column excludes skylights. The SHGC column applies to all glazed fenestration.

^c "10/15/21.+TB" means R-10 continuous insulation on the exterior of the wall, or R-15 on the continuous insulation on the interior of the wall, or R-21 cavity insulation plus a thermal break between the slab and the basement wall at the interior of the basement wall. "10/15/21.+TB" shall be permitted to be met with R-13 cavity insulation on the interior of the basement wall plus R-5 continuous insulation on the interior or exterior of the wall. "10/13" means R-10 continuous insulation on the interior or exterior of the home or R-13 cavity insulation at the interior of the basement wall. "TB" means thermal break between floor slab and basement wall.

^d R-10 continuous insulation is required under heated slab on grade floors. See R402.2.9.1.

^e There are no SHGC requirements in the Marine Zone.

^f Reserved.

^g Reserved.

^h Reserved.

ⁱ The second R-value applies when more than half the insulation is on the interior of the mass wall.

^j Reserved.

^k For single rafter- or joist-vaulted ceilings, the insulation may be reduced to R-38.

^l Reserved.

^m Int. (intermediate framing) denotes standard framing 16 inches on center with headers insulated with a minimum of R-10 insulation.

Table R402.1.3 Footnote

^a Nonfenestration U-factors shall be obtained from measurement, calculation or an approved source or as specified in Section R402.1.3.

Simple Heating System Size: Washington State

This heating system sizing calculator is based on the Prescriptive Requirements of the 2015 Washington State Energy Code (WSEC) and ACCA Manuals J and S. This calculator will calculate heating loads only. ACCA procedures for sizing cooling systems should be used to determine cooling loads.

The glazing (window) and door portion of this calculator assumes the installed glazing and door products have an area weighted average U-factor of 0.30. The incorporated insulation requirements are the minimum prescriptive amounts specified by the 2015 WSEC.

Please fill out all of the green drop-downs and boxes that are applicable to your project. As you make selections in the drop-downs for each section, some values will be calculated for you. If you do not see the selection you need in the drop-down options, please call the WSU Energy Extension Program at (360) 956-2042 for assistance.

Project Information

Contact Information

Heating System Type:

 All Other Systems

 Heat Pump

To see detailed instructions for each section, place your cursor on the word "Instructions".

Design Temperature

Instructions

Design Temperature Difference (ΔT)
 $\Delta T = \text{Indoor (70 degrees)} - \text{Outdoor Design Temp}$

75

Area of Building

Conditioned Floor Area

Instructions

Conditioned Floor Area (sq ft)

Average Ceiling Height

Instructions

Average Ceiling Height (ft)

Conditioned Volume

Glazing and Doors

Instructions

U-Factor X Area = UA
 0.30 X = ---

Skylights

Instructions

U-Factor X Area = UA
 0.50 X = ---

Insulation

Attic

Instructions

U-Factor X Area = UA
 No selection X = ---

Single Rafter or Joist Vaulted Ceilings

Instructions

U-Factor X Area = UA
 No selection X = ---

Above Grade Walls (see Figure 1)

Instructions

U-Factor X Area = UA
 No selection X = ---

Floors

Instructions

U-Factor X Area = UA
 No selection X = ---

Below Grade Walls (see Figure 1)

Instructions

U-Factor X Area = UA
 No selection X = ---

Slab Below Grade (see Figure 1)

Instructions

F-Factor X Length = UA
 No selection X = ---

Slab on Grade (see Figure 1)

Instructions

F-Factor X Length = UA
 No selection X = ---

Location of Ducts

Instructions

Duct Leakage Coefficient

1.10

Sum of UA

Envelope Heat Load _____ Btu / Hour

Sum of UA X ΔT

Air Leakage Heat Load _____ Btu / Hour

Volume X 0.6 X ΔT X .018

Building Design Heat Load _____ Btu / Hour

Air Leakage + Envelope Heat Loss

Building and Duct Heat Load _____ Btu / Hour

Ducts in unconditioned space: Sum of Building Heat Loss X 1.10

Ducts in conditioned space: Sum of Building Heat Loss X 1

Maximum Heat Equipment Output _____ Btu / Hour

Building and Duct Heat Loss X 1.40 for Forced Air Furnace

Building and Duct Heat Loss X 1.25 for Heat Pump

Figure 1.



Table 406.2 Energy Credits (2015 Code)

OPTION	DESCRIPTION	CREDIT(S)	Estimated Cost
1a	<p>EFFICIENT BUILDING ENVELOPE 1a: Prescriptive compliance is based on Table R402.1.1 with the following modifications: Vertical fenestration U = 0.28 Floor R-38 Slab on grade R-10 perimeter and under entire slab Below grade slab R-10 perimeter and under entire slab</p> <p>or</p> <p>Compliance based on Section R402.1.4: Reduce the Total UA by 5%.</p>	0.5	
1b	<p>EFFICIENT BUILDING ENVELOPE 1b: Prescriptive compliance is based on Table R402.1.1 with the following modifications: Vertical fenestration U = 0.25 Wall R-21 plus R-4 Floor R-38 Basement wall R-21 int plus R-5 ci Slab on grade R-10 perimeter and under entire slab Below grade slab R-10 perimeter and under entire slab</p> <p>or</p> <p>Compliance based on Section R402.1.4: Reduce the Total UA by 15%.</p>	1.0	
1c	<p>EFFICIENT BUILDING ENVELOPE 1c: Prescriptive compliance is based on Table R402.1.1 with the following modifications: Vertical fenestration U = 0.22 Ceiling and single-rafter or joist-vaulted R-49 advanced Wood frame wall R-21 int plus R-12 ci Floor R-38 Basement wall R-21 int plus R-12 ci Slab on grade R-10 perimeter and under entire slab Below grade slab R-10 perimeter and under entire slab</p> <p>or</p> <p>Compliance based on Section R402.1.4: Reduce the Total UA by 30%.</p>	2.0	
1d ^a	<p>EFFICIENT BUILDING ENVELOPE 1d: Prescriptive compliance is based on Table R402.1.1 with the following modifications: Vertical fenestration U = 0.24</p>	0.5	
2a	<p>AIR LEAKAGE CONTROL AND EFFICIENT VENTILATION 2a: Compliance based on R402.4.1.2: Reduce the tested air leakage to 3.0 air changes per hour maximum</p> <p>and</p> <p>All whole house ventilation requirements as determined by Section M1507.3 of the <i>International Residential Code</i> shall be met with a high efficiency fan (maximum 0.35 watts/cfm), not interlocked with the furnace fan. Ventilation systems using a furnace including an ECM motor are allowed, provided that they are controlled to operate at low speed in ventilation only mode.</p> <p>To qualify to claim this credit, the building permit drawings shall specify the option being selected and shall specify the maximum tested building air leakage and shall show the qualifying ventilation system.</p>	0.5	
2b	<p>AIR LEAKAGE CONTROL AND EFFICIENT VENTILATION 2b: Compliance based on Section R402.4.1.2: Reduce the tested air leakage to 2.0 air changes per hour maximum</p> <p>and</p> <p>All whole house ventilation requirements as determined by Section M1507.3 of the <i>International Residential Code</i> shall be met with a heat recovery ventilation system with minimum sensible heat recovery efficiency of 0.70.</p> <p>To qualify to claim this credit, the building permit drawings shall specify the option being selected and shall specify the maximum tested building air leakage and shall show the heat recovery ventilation system.</p>	1.0	

Table 406.2 Energy Credits (2015 Code)

OPTION	DESCRIPTION	CREDIT(S)	Estimated Cost
2c	<p>AIR LEAKAGE CONTROL AND EFFICIENT VENTILATION 2c: Compliance based on Section R402.4.1.2: Reduce the tested air leakage to 1.5 air changes per hour maximum</p> <p>and</p> <p>All whole house ventilation requirements as determined by Section M1507.3 of the <i>International Residential Code</i> shall be met with a heat recovery ventilation system with minimum sensible heat recovery efficiency of 0.85.</p> <p>To qualify to claim this credit, the building permit drawings shall specify the option being selected and shall specify the maximum tested building air leakage and shall show the heat recovery ventilation system.</p>	1.5	
3a ^b	<p>HIGH EFFICIENCY HVAC EQUIPMENT 3a: Gas, propane or oil-fired furnace with minimum AFUE of 94%, or Gas, propane or oiled-fired boiler with minimum AFUE of 92%</p> <p>To qualify to claim this credit, the building permit drawings shall specify the option being selected and shall specify the heating equipment type and the minimum equipment efficiency.</p>	1.0	
3b ^b	<p>HIGH EFFICIENCY HVAC EQUIPMENT 3b: Air-source heat pump with minimum HSPF of 9.0</p> <p>To qualify to claim this credit, the building permit drawings shall specify the option being selected and shall specify the heating equipment type and the minimum equipment efficiency.</p>	1.0	
3c ^b	<p>HIGH EFFICIENCY HVAC EQUIPMENT 3c: Closed-loop ground source heat pump; with a minimum COP of 3.3</p> <p>or</p> <p>Open loop water source heat pump with a maximum pumping hydraulic head of 150 feet and minimum COP of 3.6</p> <p>To qualify to claim this credit, the building permit drawings shall specify the option being selected and shall specify the heating equipment type and the minimum equipment efficiency.</p>	1.5	
3d ^b	<p>HIGH EFFICIENCY HVAC EQUIPMENT 3d: Ductless Split System Heat Pumps, Zonal Control: In homes where the primary space heating system is zonal electric heating, a ductless heat pump system shall be installed and provide heating to the largest zone of the housing unit.</p> <p>To qualify to claim this credit, the building permit drawings shall specify the option being selected and shall specify the heating equipment type and the minimum equipment efficiency.</p>	1.0	
4	<p>HIGH EFFICIENCY HVAC DISTRIBUTION SYSTEM:</p> <p>All heating and cooling system components installed inside the conditioned space. This includes all equipment and distribution system components such as forced air ducts, hydronic piping, hydronic floor heating loop, convectors and radiators. All combustion equipment shall be direct vent or sealed combustion.</p> <p>For forced air ducts: A maximum of 10 linear feet of return ducts and 5 linear feet of supply ducts may be located outside the conditioned space. All metallic ducts located outside the conditioned space must have both transverse and longitudinal joints sealed with mastic. If flex ducts are used, they cannot contain splices. Flex duct connections must be made with nylon straps and installed using a plastic strapping tensioning tool. Ducts located outside the conditioned space must be insulated to a minimum of R-8. Locating system components in conditioned crawl spaces is not permitted under this option.</p> <p>Electric resistance heat and ductless heat pumps are not permitted under this option. Direct combustion heating equipment with AFUE less than 80% is not permitted under this option.</p> <p>To qualify to claim this credit, the building permit drawings shall specify the option being selected and shall specify the heating equipment type and shall show the location of the heating and cooling equipment and all the ductwork.</p>	1.0	

Table 406.2 Energy Credits (2015 Code)

OPTION	DESCRIPTION	CREDIT(S)	Estimated Cost
5a	<p>EFFICIENT WATER HEATING 5a: All showerhead and kitchen sink faucets installed in the house shall be rated at 1.75 GPM or less. All other lavatory faucets shall be rated at 1.0 GPM or less.^c To qualify to claim this credit, the building permit drawings shall specify the option being selected and shall specify the maximum flow rates for all showerheads, kitchen sink faucets, and other lavatory faucets.</p>	0.5	
5b	<p>EFFICIENT WATER HEATING 5b: Water heating system shall include one of the following: Gas, propane or oil water heater with a minimum EF of 0.74 or Water heater heated by ground source heat pump meeting the requirements of Option 3c. or For R-2 occupancy, a central heat pump water heater with an EF greater than 2.0 that would supply DHW to all the units through a central water loop insulated with R-8 minimum pipe insulation. To qualify to claim this credit, the building permit drawings shall specify the option being selected and shall specify the water heater equipment type and the minimum equipment efficiency.</p>	1.0	
5c	<p>EFFICIENT WATER HEATING 5c: Water heating system shall include one of the following: Gas, propane or oil water heater with a minimum EF of 0.91 or Solar water heating supplementing a minimum standard water heater. Solar water heating will provide a rated minimum savings of 85 therms or 2000 kWh based on the Solar Rating and Certification Corporation (SRCC) Annual Performance of OG-300 Certified Solar Water Heating Systems or Electric heat pump water heater with a minimum EF of 2.0 and meeting the standards of NEEA's Northern Climate Specifications for Heat Pump Water Heaters To qualify to claim this credit, the building permit drawings shall specify the option being selected and shall specify the water heater equipment type and the minimum equipment efficiency and, for solar water heating systems, the calculation of the minimum energy savings.</p>	1.5	
5d	<p>EFFICIENT WATER HEATING 5d: A drain water heat recovery unit(s) shall be installed, which captures waste water heat from all the showers, and has a minimum efficiency of 40% if installed for equal flow or a minimum efficiency of 52% if installed for unequal flow. Such units shall be rated in accordance CSA B55.1 and be so labeled. To qualify to claim this credit, the building permit drawings shall include a plumbing diagram that specified the drain water heat recovery units and the plumbing layout needed to install it and labels or other documentation shall be provided that demonstrates that the unit complies with the standard.</p>	0.5	

Table 406.2 Energy Credits (2015 Code)

OPTION	DESCRIPTION	CREDIT(S)	Estimated Cost
6	<p>RENEWABLE ELECTRIC ENERGY:</p> <p>For each 1200 kWh of electrical generation per each housing unit provided annually by on-site wind or solar equipment a 0.5 credit shall be allowed, up to 3 credits. Generation shall be calculated as follows:</p> <p>For solar electric systems, the design shall be demonstrated to meet this requirement using the National Renewable Energy Laboratory calculator PVWATTS. Documentation noting solar access shall be included on the plans.</p> <p>For wind generation projects designs shall document annual power generation based on the following factors:</p> <p>The wind turbine power curve; average annual wind speed at the site; frequency distribution of the wind speed at the site and height of the tower.</p> <p>To qualify to claim this credit, the building permit drawings shall specify the option being selected and shall show the photovoltaic or wind turbine equipment type, provide documentation of solar and wind access, and include a calculation of the minimum annual energy power production.</p>	0.5	

Prescriptive Checklist for the 2015 Washington State Energy Code

Chapter 51-11R WAC

**STATE BUILDING CODE ADOPTION AND AMENDMENT OF
THE 2015 EDITION OF THE
INTERNATIONAL ENERGY CONSERVATION CODE,
RESIDENTIAL PROVISIONS**

WASHINGTON STATE ENERGY CODE, RESIDENTIAL PROVISIONS

Prepared by:

**Washington State University Energy Program
Building Sciences**

**Updated
May 2016**

2015 Washington State Energy Code Prescriptive Checklist for the

Washington State Energy Program
Building Division
Energy Code
Prescriptive Checklist for the
2015 Washington State Energy Code
Prescriptive Provisions

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WSUEEP13-060 • May 2016

The following Prescriptive checklist cites 2015 Washington State Energy Code (WSEC) items that apply to most residential new construction projects. This checklist is not a substitute for the energy code itself nor is it a list of comprehensive energy code requirements. To obtain a copy of the energy code, go to: www.energy.wsu.edu/code

R103.2

Include details in construction documents regarding insulation materials and their R-values; fenestration U-factors; area-weighted U-factor calculations; mechanical system design criteria; mechanical and service water heating system and equipment types, sizes and efficiencies; equipment and systems controls; duct sealing, duct and pipe insulation and location; and air sealing details.

R103.3.1 Approved Drawings on Site

One set of construction documents so reviewed shall be retained by the code official. The other set shall be returned to the applicant, kept at the site of work and shall be open to inspection by the code official or a duly authorized representative.

R104.2.2.1 Wall Insulation Inspection

The building official, upon notification, shall make a wall insulation inspection in addition to those inspections required in Section R109 of the International Residential Code. This inspection shall be made after all wall and cavity insulation is in place and prior to cover.

R302.2 Design Conditions for Sizing HVAC

The heating or cooling outdoor design temperatures shall be selected from the **WSEC Appendix:** http://www.energy.wsu.edu/Documents/ga_2015WSEC_Apx.pdf

R303.1.1 Insulation Certification

The insulation installers shall provide a certification listing the type, manufacturer and R-value of insulation installed in each element of the building thermal envelope. For blown or sprayed insulation (fiberglass and cellulose), the initial installed thickness, settled thickness, settled R-value, installed density, coverage area and number of bags installed shall be listed on the certification. For sprayed polyurethane foam (SPF) insulation, the installed thickness of the areas covered and R-value of installed thickness shall be listed on the certification. The insulation installer shall sign, date and post the certification in a conspicuous location on the job site.

Insulation Certificate for Residential New Construction:

http://www.energy.wsu.edu/Documents/Insulation%20Certificate%205_20.pdf

R303.1.1.1 Insulation Markers

The thickness of blown-in or sprayed roof/ceiling insulation (fiberglass or cellulose) shall be written in inches (mm) on markers that are installed at least one for every 300 square feet (28 m²) throughout the attic space.

R303.2.1 Protection of Exposed Foundation Insulation above grade and 6" below grade

Insulation applied to the exterior of basement walls, crawlspace walls and the perimeter of slab-on-grade floors shall have a rigid, opaque and weather-resistant protective covering to prevent the degradation of the insulation's thermal performance.

R401.3 Certificate

A permanent certificate shall be completed and posted on or within three feet of the electrical distribution panel by the builder or registered design professional. The certificate shall be completed by the builder or registered design professional. The certificate must list the energy features of the structure.



R303.1.3 Insulation Markers
Insulation marker installed in attic. Make sure the marker is applicable to the type of insulation installed (fiberglass, cellulose, etc.).

Design Certificate: http://www.energy.wsu.edu/Documents/WSEC-2015-Avery-6573_2_Per_Sheet.pdf

Table 402.1.1 Footnote "d" Slab R-Value

R-10 continuous insulation is required under heated slab on grade floors. See R402.2.9.1.

Table 402.1.1 Footnote "k" Ceiling R-Value

For single rafter or joist-vaulted ceilings, the insulation may be reduced to R-38.



Table R402.1.1 Footnote "d" Slab R-Value
R-10 fully insulated slab for heated slab-on-grade floors.

□ **Table 402.1.1 Footnote “m” Intermediate Framing**

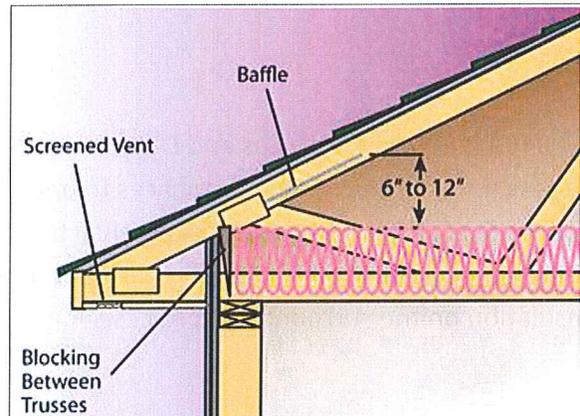
Int. (intermediate framing) denotes standard framing 16 inches on center with headers insulated with a minimum of R-10 insulation.



Table 402.1.1 Footnote “k” Intermediate Framing
“INT” walls require R-10 insulated headers..

□ **R402.2.1 Ceilings with Attic Spaces**

R-38 shall be deemed to satisfy the requirement for R-49 wherever the full height of uncompressed R-38 insulation extends over the wall top plate at the eaves.



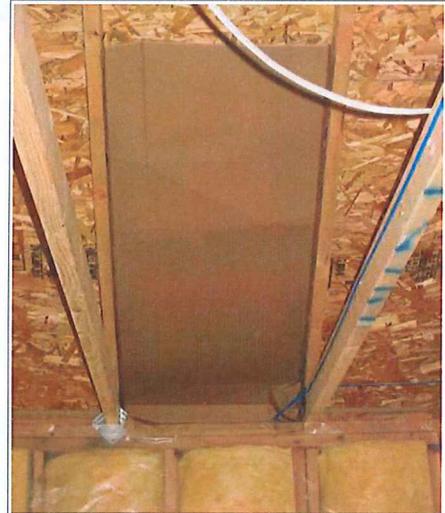
R402.2.1 Ceilings with Attic Spaces
You can reduce ceiling insulation R-value to 38 if you have R-38 extending to the exterior wall line.

R402.2.1.1 Loose Fill Insulation in Attic Spaces

Open-blown or poured loose fill insulation may be used in attic spaces where the slope of the ceiling is not more than 3 feet in 12 and there is at least 30 inches of clear distance from the top of the bottom chord of the truss or ceiling joist to the underside of the sheathing at the roof ridge.

R402.2.3 Eave Baffle

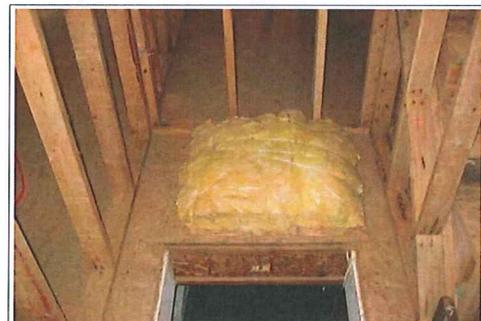
For air permeable insulations in vented attics, a baffle shall be installed adjacent to soffit and eave vents.



R402.2.3 Eave Baffle
Baffle at eave vent. Minimum 1" unobstructed air space required.

R402.2.4 Access Hatches and Doors

Access doors from conditioned spaces to unconditioned spaces (e.g., attics and crawl spaces) shall be weather stripped and insulated to a level equivalent to the insulation on the surrounding surfaces.



R402.2.4 Access Hatches and Doors
Insulated crawl space access. The same method applies to attic access hatches.

□ **R402.2.7 Floors**

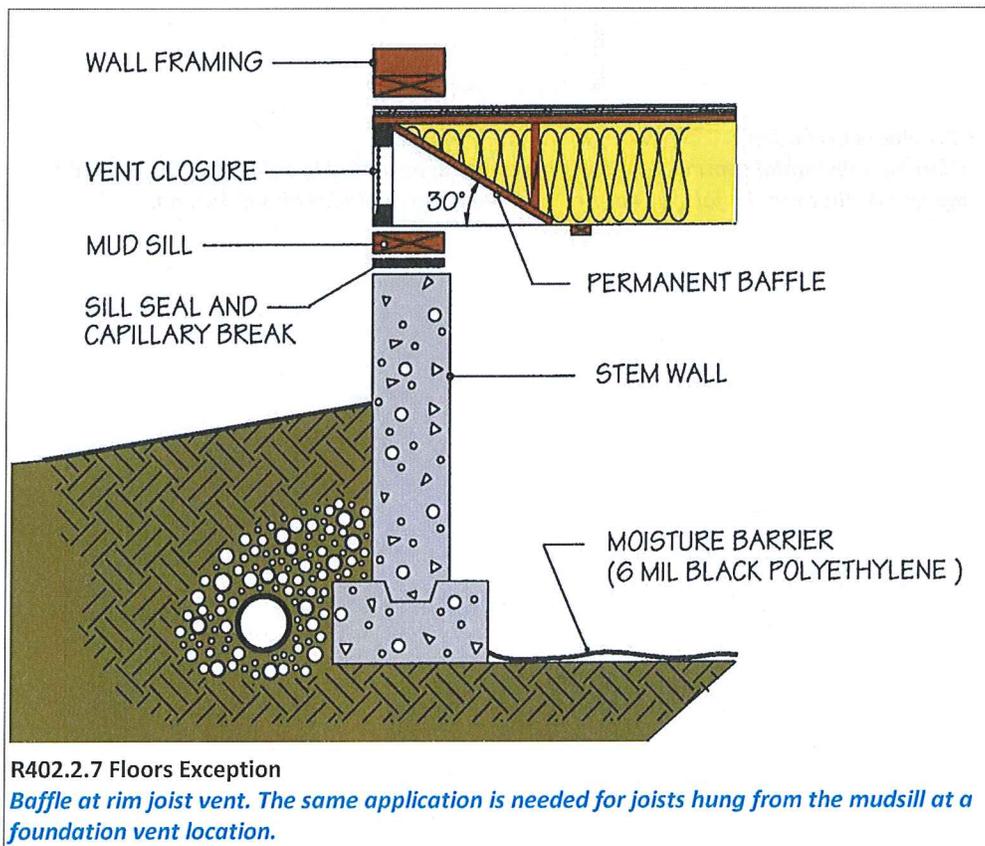
Floor insulation shall be installed to maintain permanent contact with the underside of the subfloor decking. Insulation supports shall be installed so spacing is no more than 24 inches on center. Foundation vents shall be placed so that the top of the vent is below the lower surface of the floor insulation.



R402.2.7 Floors
Floor insulation installed with contact to the underside of the floor decking. Note the inset stapled twine.

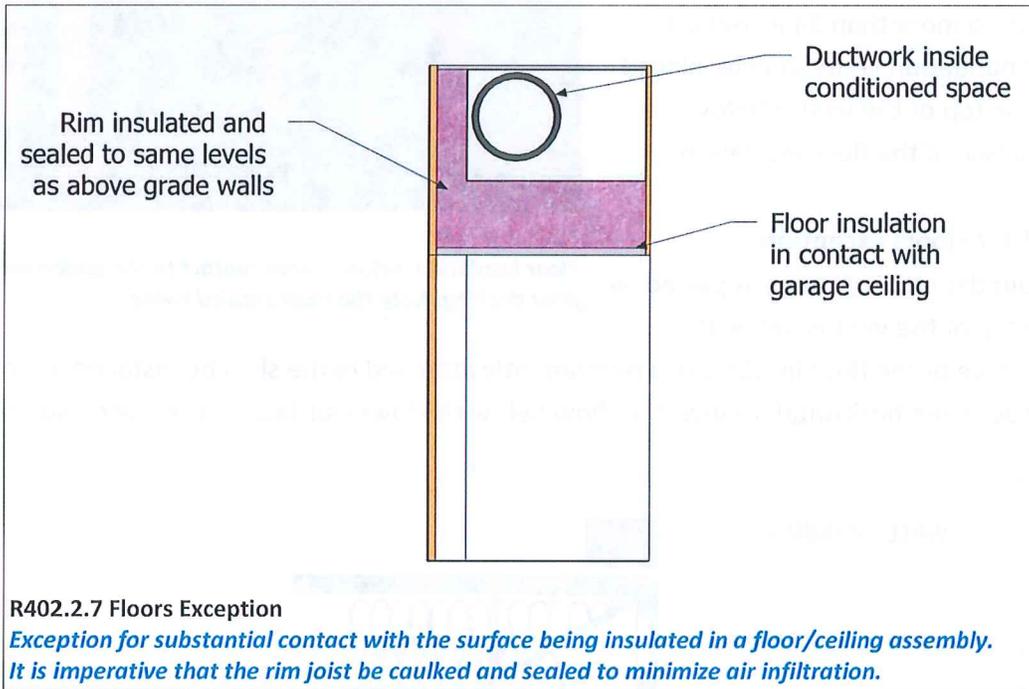
□ **R402.2.7 Floors Exception**

When foundation vents are not placed so that the top of the vent is below the lower surface of the floor insulation, a permanently attached baffle shall be installed at an angle of 30° from horizontal, to divert air flow below the lower surface of the floor insulation.



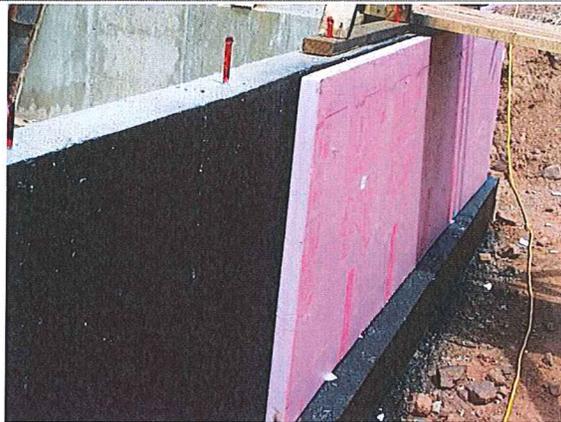
□ R402.2.7 Floors Exception

Substantial contact with the surface being insulated is not required in enclosed floor/ceiling assemblies containing ducts where full R value insulation is installed between the duct and the exterior surface.

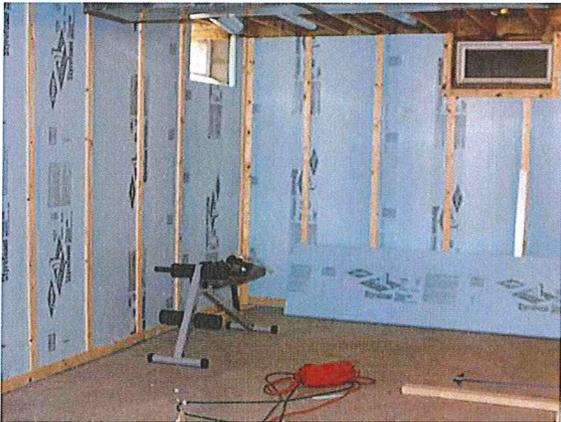


R402.2.8 Basement Walls

Below-grade exterior wall insulation used on the exterior (cold) side of the wall shall extend from the top of the below-grade wall to the top of the footing and shall be approved for below-grade use. Above-grade insulation shall be protected. Insulation used on the interior (warm) side of the wall shall extend from the top of the below-grade wall to the below-grade floor level and shall include R-5 rigid board providing a thermal break between the concrete wall and the slab.



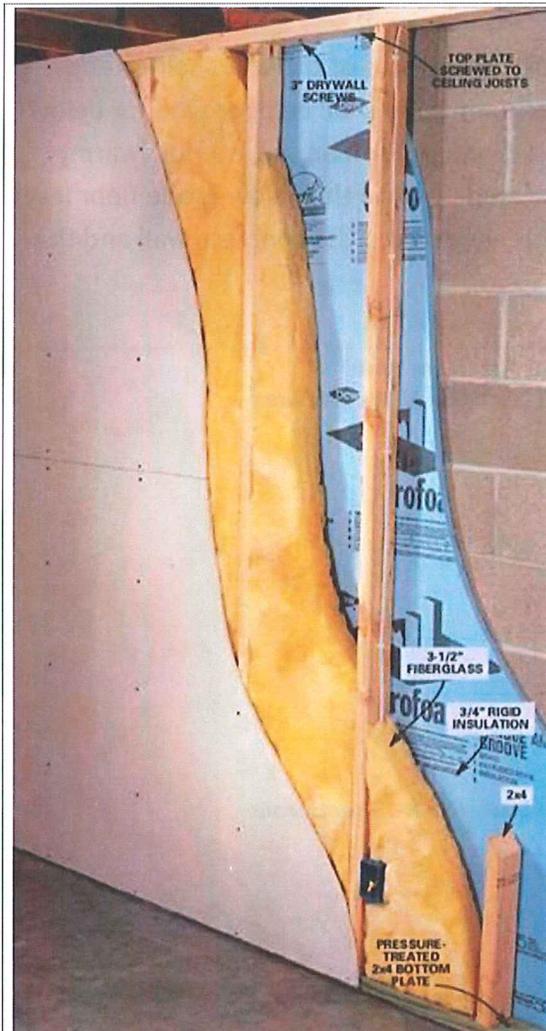
R402.2.8 Basement Walls
Exterior insulation R-10 continuous



Interior insulation R-15 continuous



R-21 cavity allowed but not recommended due to potential moisture problems



R402.2.8 Basement Walls

Recommended wall assembly

R-13 batt applied over R-5 foam. This is equivalent to an R-21 wall

Do not install vapor retarders in below grade walls



2012 International Residential Code

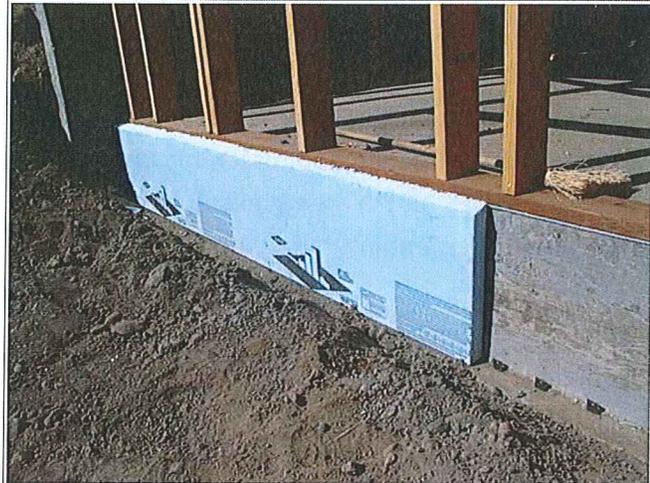
R702.7 Vapor retarders. Class I or II vapor retarders are required on the interior side of frame walls in Climate Zones 5, 6, 7, 8 and Marine 4.

Exceptions:

1. Basement walls.
2. Below grade portion of any wall.
3. Construction where moisture or its freezing will not damage the materials.

R402.2.9 Slab-on-Grade Floors

The minimum thermal resistance (R-value) of the insulation around the perimeter of unheated or heated slab-on-grade floors shall be as specified in Table R402.1.1. The insulation shall be placed on the outside of the foundation or on the inside of the foundation wall. The insulation shall extend downward from the top of the slab for a minimum distance as shown in the table or to the top of the footing, whichever is less, or downward to at least the bottom of the slab and then horizontally to the interior or exterior for the total distance shown in the table. A two-inch by two-inch (maximum) pressure treated nailer may be placed at the finished floor elevation for attachment of interior finish materials. Insulation extending away from the building shall be protected by pavement or by a minimum of 10 inches (254 mm) of soil.



R402.2.9 Slab-on-Grade Floors
Exterior applied foundation insulation on a monolithic slab.

R402.3.1 U-factor

An area-weighted average of fenestration products shall be permitted to satisfy the U-factor requirements.

Example of Area Weighted U-Value Calculation:

Window #1 area 10 ft ²	U = .34	U x A = 3.4
Window #2 area 15 ft ²	U = .28	<u>U x A = 4.2</u>
Total area 25 ft ²		Total U x A = 7.6
Area weighted average 7.6/25 = 0.30		

R402.3.3 Glazed Fenestration Exemption

Up to 15 square feet (1.4 m²) of glazed fenestration per dwelling unit shall be permitted to be exempt from U-factor requirements in Section R402.3.3.

R402.3.4 Opaque Door Exemption

One side-hinged opaque door assembly up to 24 square feet (2.22 m²) in area is exempted from the U-factor requirement in Section 402.3.4.

R402.4.1.2 Testing

The building or dwelling unit shall be tested and verified as having an air leakage rate of not exceeding 5 air changes per hour.

Building Air Leakage Testing Specifications:

http://www.energy.wsu.edu/Documents/Air%20Leakage%20Testing%201_29_12.pdf

R402.4.2 Fireplaces

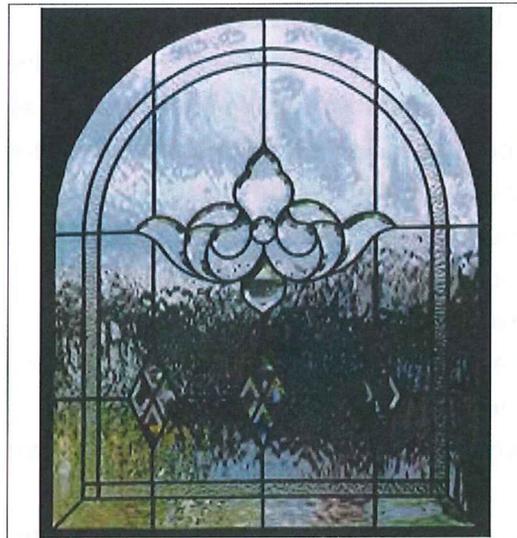
New wood-burning fireplaces shall have tight-fitting flue dampers and outdoor combustion air.

R402.4.4 Recessed Lighting

Recessed luminaires installed in the building thermal envelope shall be sealed to limit air leakage between conditioned and unconditioned spaces. All recessed luminaires shall be Type IC-rated and labeled certified under ASTM E283 and shall have a label attached showing compliance with this test method. All recessed luminaires shall be sealed with a gasket or caulk between the housing and the interior wall or ceiling covering.

Table 402.4.1.1 Air Barrier and Insulation Installation Requirements

Air barriers and insulation must be installed in accordance with Table 402.4.1.1, below.



Glazed Fenestration Exemption
Up to 15 square feet of glazing are exempt from U-factor requirements. This does not apply if you are doing a UA tradeoff approach.



R402.3.4 Opaque Door Exemption
One door assembly, up to 24 square feet, is exempt from U-factor requirements.



R402.4.4 Recessed Lighting
Labeled and sealed recessed light.

**TABLE R402.4.1.1
AIR BARRIER AND INSULATION INSTALLATION**

COMPONENT	AIR BARRIER CRITERIA ^a	INSULATION CRITERIA ^a
General Requirements	<p>A continuous air barrier shall be installed in the building envelope.</p> <p>Exterior thermal envelope contains a continuous air barrier.</p> <p>Breaks or joints in the air barrier shall be sealed.</p>	<p>Air-permeable insulation shall not be used as a sealing material.</p>
Cavity insulation installation		<p>All cavities in the thermal envelope shall be filled with insulation. The density of the insulation shall be at the manufacturers' product recommendation and said density shall be maintained for all volume of each cavity. Batt type insulation will show no voids or gaps and maintain an even density for the entire cavity. Batt insulation shall be installed in the recommended cavity depth. Where an obstruction in the cavity due to services, blocking, bracing or other obstruction exists, the batt product will be cut to fit the remaining depth of the cavity. Where the batt is cut around obstructions, loose fill insulation shall be placed to fill any surface or concealed voids, and at the manufacturers' specified density. Where faced batt is used, the installation tabs must be stapled to the face of the stud. There shall be no compression to the batt at the edges of the cavity due to inset stapling installation tabs.</p> <p>Insulation that upon installation readily conforms to available space shall be installed filling the entire cavity and within the manufacturers' density recommendation.</p>
Ceiling/attic	<p>The air barrier in any dropped ceiling/soffit shall be aligned with the insulation and any gaps in the air barrier sealed.</p> <p>Access openings, drop down stair or knee wall doors to unconditioned attic spaces shall be</p>	<p>The insulation in any dropped ceiling/soffit shall be aligned with the air barrier</p> <p>Batt insulation installed in attic roof assemblies may be compressed at exterior wall lines to allow for required attic</p>

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	sealed.	ventilation.
Walls	The junction of the foundation and sill plate shall be sealed. The junction of the top plate and top of exterior walls shall be sealed. Knee walls shall be sealed.	Cavities within corners and headers of frame walls shall be insulated by completely filling the cavity with a material having a thermal resistance of R-3 per inch minimum. Exterior thermal envelope insulation for framed walls shall be installed in substantial contact and continuous alignment with the air barrier.
Windows, skylights and doors	The space between window/door jambs and framing and skylights and framing shall be sealed.	
Rim Joists	Rim joists shall include the air barrier.	Rim joists shall be insulated.
Floors (including above garage and cantilevered floors)	The air barrier shall be installed at any exposed edge of insulation.	Floor framing cavity insulation shall be installed to maintain permanent contact with the underside of subfloor decking or floor framing cavity insulation shall be permitted to be in contact with the top side of sheathing or continuous insulation installed on the underside of floor framing and extend from the bottom to the top of all perimeter floor framing members.
Crawl space walls	Exposed earth in unvented crawl spaces shall be covered with a Class I, black vapor retarder with overlapping joints taped.	Where provided instead of floor insulation, insulation shall be permanently attached to the crawlspace walls.
Shafts, penetrations	Duct shafts, utility penetrations, and flue shafts opening to exterior or unconditioned space shall be sealed.	
Narrow cavities		Batts in narrow cavities shall be cut to fit and installed to the correct density without any voids or gaps or compression, or narrow cavities shall be filled by insulation that on installation readily conforms to the available cavity space.
Garage separation	Air sealing shall be provided between the garage and conditioned spaces.	
Recessed lighting	Recessed light fixtures installed in the building thermal envelope shall be sealed to the drywall.	Recessed light fixtures installed in the building thermal envelope shall be air tight and IC rated.

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Plumbing and wiring		Batt insulation shall be cut neatly to fit around wiring and plumbing in exterior walls. There shall be no voids or gaps or compression where cut to fit. Insulation that on installation readily conforms to available space shall extend behind piping and wiring.
Shower/tub on exterior wall	The air barrier installed at exterior walls adjacent to showers and tubs shall separate them from the showers and tubs.	Exterior walls adjacent to showers and tubs shall be insulated.
Electrical/phone box on exterior wall	The air barrier shall be installed behind electrical or communication boxes or air sealed boxes shall be installed.	
HVAC register boots	HVAC register boots that penetrate building thermal envelope shall be sealed to the subfloor or drywall.	
Concealed sprinklers	When required to be sealed, concealed fire sprinklers shall only be sealed in a manner that is recommended by the manufacturer. Caulking or other adhesive sealants shall not be used to fill voids between fire sprinkler cover plates and walls or ceilings.	

IC = insulation contact

- a. In addition, inspection of log walls shall be in accordance with the provisions of ICC-400.

R403.1.1 Programmable Thermostats for Forced Air Furnaces

Where the primary heating system is a forced-air furnace, at least one thermostat per dwelling unit shall be capable of controlling the heating and cooling system on a daily schedule to maintain different temperature set points at different times of the day. The thermostat shall allow for, at a minimum, a 5-2 programmable schedule (weekdays/weekends) and be capable of providing at least two programmable setback periods per day.

R403.1.2 Heat Pump Supplementary Heat

Unitary air cooled heat pumps shall include controls that minimize supplemental heat usage during start-up, set-up, and defrost conditions. See R403.1.2 for control and set-up requirements.

R403.3.1 Duct Insulation

Ducts in attics shall be insulated to a minimum of R-8.

Exception: Ducts or portions thereof located completely inside the building thermal envelope. Ducts located in crawl spaces (vented or unvented) do not qualify for this exception. Ducts within a slab or in the ground shall be insulated to R-10.

R403.3.3 Sealing and Testing

Ducts, air handlers, and filter boxes shall be sealed. Joints and seams shall comply with either the International Mechanical Code or International Residential Code, as applicable. Ducts shall be leak tested in accordance with WSU RS-33, using the maximum duct leakage rates specified.

RS-33 Duct Testing Standards:

http://www.energy.wsu.edu/Documents/Duct%20Testing%20Standards_modified_2015_WSEC.pdf

R403.3.3 Building Cavities

Installation of ducts in exterior walls, floors or ceilings shall not displace required envelope insulation.

R403.5.3 Hot Water Pipe Insulation

Insulation for hot water pipe shall have a minimum thermal resistance of R-3. An SBCC interpretation states that insulation can be discontinuous where passing through framing members or where necessary to pass another pipe in a stud space.

R403.5.5 Electric Water Heater Insulation

All electric water heaters in unheated spaces or on concrete floors shall be placed on an incompressible, insulated surface with a minimum thermal resistance of R-10.

R403.6.1 Mechanical Ventilation

A mechanical ventilation system is required to be installed in accordance with the **Washington State amendments to the IRC and/or IMC or to ASHRAE Standard 62.2-2010:**
<http://apps.leg.wa.gov/WAC/default.aspx?cite=51-50>

R404.1 Lighting Equipment

A minimum of 75 percent of permanently installed lamps in lighting fixtures shall be high-efficacy lamps.

HIGH-EFFICACY LAMPS. Compact fluorescent lamps, T-8 or smaller diameter linear fluorescent lamps, or lamps with a minimum efficacy of:

1. 60 lumens per watt for lamps over 40 watts;
2. 50 lumens per watt for lamps over 15 watts to 40 watts; and
3. 40 lumens per watt for lamps 15 watts or less.

SECTION R406 ADDITIONAL ENERGY EFFICIENCY REQUIREMENTS

R406.1 Scope. This section establishes options for additional criteria to be met for one- and two-family dwellings and townhouses, as defined in Section 101.2 of the International Residential Code to demonstrate compliance with this code.

R406.2 Additional energy efficiency requirements (Mandatory). Each dwelling unit in a residential building shall comply with sufficient options from Table R406.2 so as to achieve the following minimum number of credits:

1. Small Dwelling Unit: 1.5 credits

Dwelling units less than 1500 square feet in conditioned floor area with less than 300 square feet of fenestration area. Additions to existing building greater than 500 square feet of heated floor area but less than 1500 square feet.

2. Medium Dwelling Unit: 3.5 credits

All dwelling units that are not included in #1 or #3.
Exception: Dwelling units serving R-2 occupancies shall require 2.5 credits.

3. Large Dwelling Unit: 4.5 credits

Dwelling units exceeding 5000 square feet of conditioned floor area.
Exception: Dwelling units serving R-2 occupancies shall require 2.5 credits.

4. Additions less than 500 square feet: 0.5 credits

The drawings included with the building permit application shall identify which options have been selected and the point value of each option, regardless of whether separate mechanical, plumbing, electrical, or other permits are utilized for the project.

Table R406.2: http://www.energy.wsu.edu/Documents/Table_406.2_2015_Energy_Credits.pdf

Examples of how to obtain 3.5 credits:

Table 406.2
How to meet the mark
1,501-5,000 sf homes (3.5 credits)

Opt	Description	Pts
3a or 3b	94 AFUE Gas Furnace or 9.0 HSPF heat pump	1.0
4	All ducts and furnace located inside the conditioned space	1.0
5a	Kitchen sink and showerheads \leq 1.75 GPM, lavatory faucets \leq 1.0 GPM	0.5
5b	Gas water heater \geq 0.74 EF	1.0
Total		3.5

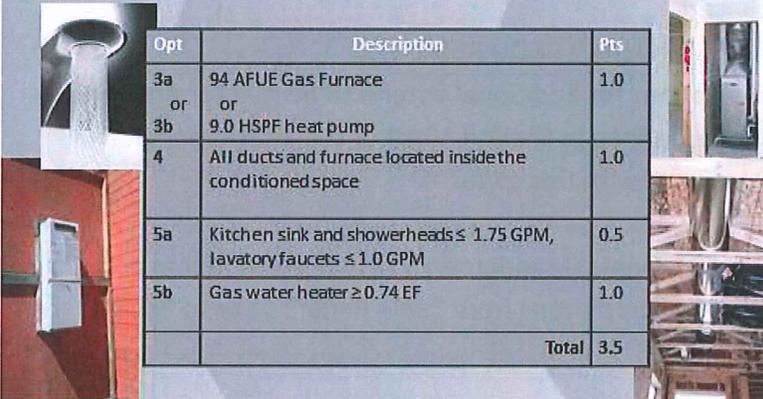


Table 406.2
How to meet the mark
1,501-5,000 sf homes (3.5 credits)

Opt	Description	Pts
1a	R-38 Floors and U-0.28 Windows	0.5
3a or 3b	94 AFUE Gas Furnace or 9.0 HSPF heat pump	1.0
5a	Kitchen sink and showerheads \leq 1.75 GPM, lavatory faucets \leq 1.0 GPM	0.5
5c	Gas water heater \geq 0.91 EF or Electric water heater \geq 2.0 EF	1.5
Total		3.5

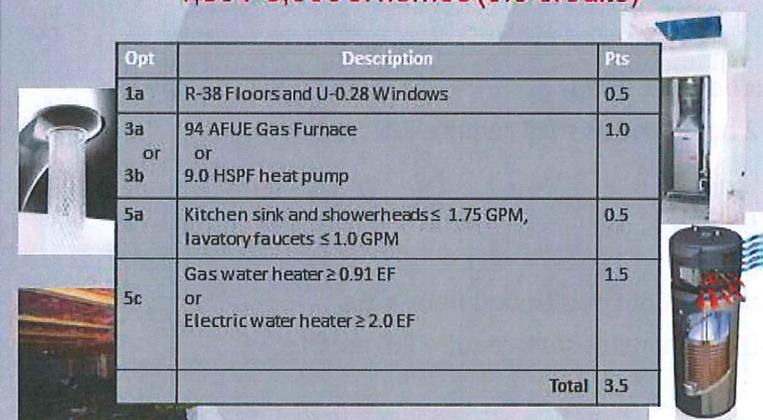
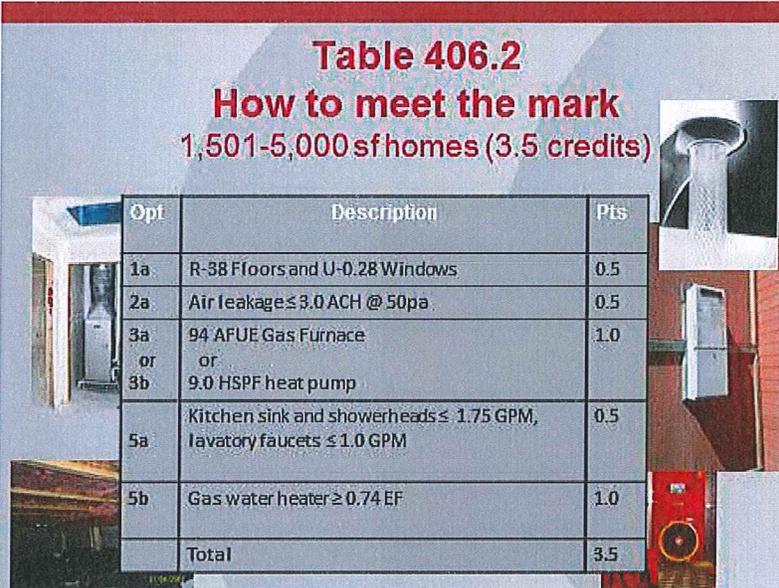
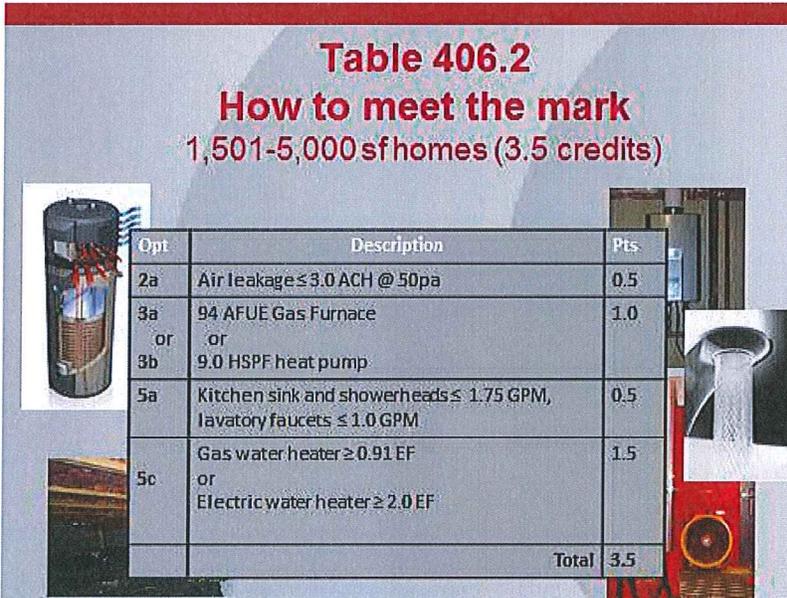


Table 406.2
How to meet the mark
 1,501-5,000 sf homes (3.5 credits)



Opt	Description	Pts
1a	R-38 Floors and U-0.28 Windows	0.5
2a	Air leakage ≤ 3.0 ACH @ 50pa	0.5
3a or 3b	94 AFUE Gas Furnace or 9.0 HSPF heat pump	1.0
5a	Kitchen sink and showerheads ≤ 1.75 GPM, lavatory faucets ≤ 1.0 GPM	0.5
5b	Gas water heater ≥ 0.74 EF	1.0
	Total	3.5

Table 406.2
How to meet the mark
 1,501-5,000 sf homes (3.5 credits)



Opt	Description	Pts
2a	Air leakage ≤ 3.0 ACH @ 50pa	0.5
3a or 3b	94 AFUE Gas Furnace or 9.0 HSPF heat pump	1.0
5a	Kitchen sink and showerheads ≤ 1.75 GPM, lavatory faucets ≤ 1.0 GPM	0.5
5c	Gas water heater ≥ 0.91 EF or Electric water heater ≥ 2.0 EF	1.5
	Total	3.5

Table 406.2
How to meet the mark
 1,501-5,000 sf homes (3.5 credits)

Opt	Description	Pts
1a	R-38 Floors and U-0.28 Windows	0.5
3d	Ductless Heat Pump	1.0
5a	Kitchen sink and showerheads \leq 1.75 GPM, lavatory faucets \leq 1.0 GPM	0.5
5c	Electric water heater \geq 2.0 EF	1.5
Total		3.5

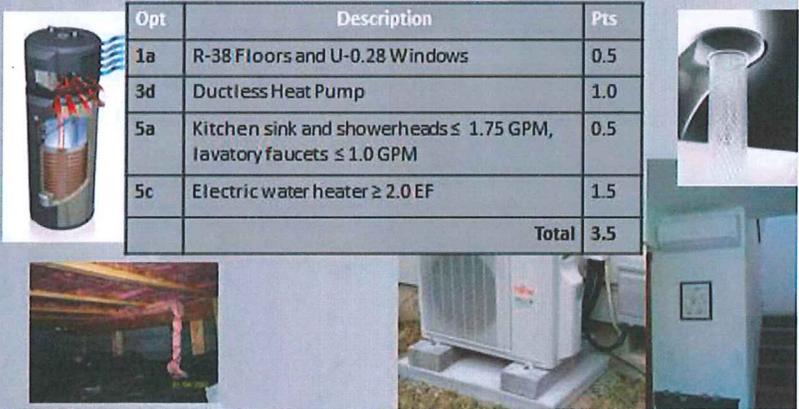


Table 406.2
How to meet the mark
 1,501-5,000 sf homes (3.5 credits)

Opt	Description	Pts
3a	92 AFUE Gas Boiler	1.0
4	All heating and cooling system components installed within the conditioned space. Electric resistance and ductless heat pumps not permitted under this option.	1.0
5c	Gas water heater \geq 0.91 EF	1.5
Total		3.5

