



Building Department Newsletter



City of Pullman

December 2010

Special points of interest:

- The 2009 Energy Code and One and Two Family Dwellings
- Gas Fitter Card Renewal
- Carbon Monoxide Alarm Requirements Changed Again
- City Office's Will Be Closed For the Holidays

The 2009 Energy Code and One and Two Family Dwellings

The following is a compilation of some major changes in the 2009 Washington State Energy Code (WSEC). Code changes have been developed and adopted by Washington State Building Code Council and are required state wide of contractors, home owners, developers and building departments for the repair, alteration and construction of one and two family dwellings as of January 1, 2011. The complete text of the WSEC can be downloaded at: www.fortress.wa.gov/ga/apps/sbcc/page.aspx

Some of the major changes in the WSEC for the construction of new dwellings and additions greater than 750 square feet are:

- A permanent certificate completed by the builder or registered design professional listing the home's insulation R-values, fenestration (gazing) U-values, door U-values, solar heat gain coefficient, the type and efficiency of heating, cooling and water heating equipment, duct leakage rates including test conditions (specified in section 503.10.2) and air leakage results if a blower door test was conducted, is required to be posted within 3 feet of the electrical panel.*
- Unvented attic spaces are now allowed if all of the conditions listed in the exception to WSEC, Section 502.1.6.3 are met. They are listed below:
 1. The unvented attic space is completely contained within the building thermal envelope.
 2. No interior vapor retarders are installed on the ceiling side (attic floor) of the assembly.
 3. Where wood shingles or shakes are used, a minimum 1/4-inch vented air space separates the shingles or shakes and the roofing underlayment above the structural sheathing.
 4. Any air-impermeable insulation shall be a vapor retarder, or shall have a vapor retarder coating or covering in direct contact with the underside of the insulation.
 5. Either items a, b, or c shall be met, depending on the air permeability of the insulation directly under the structural roof sheathing.
 - a. **Air-impermeable insulation only:** Insulation shall be applied directly to the underside of the structural roof sheathing.
 - b. **Air-permeable insulation only:** In addition to the air-permeable insulation installed directly below the structural sheathing, ridged board or air-impermeable sheet insulation shall be installed directly above the structural roof sheathing as specified per WA Climate Zone for condensation. (Pullman is in Climate Zone 2 and R-25 minimum ridged board or air-impermeable

Gas Fitter Card Renewal Time

2010 Gas Fitter's License cards expire January 15 and January 17 is the last day to renew gas fitter cards for \$7.50; cards renewed after that date are considered "new" and cost \$15.00.

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Duct

insulation R-value is required).

- c. **Air-impermeable and air-permeable insulation:** The air-impermeable insulation shall be applied in direct contact to the underside of the structural roof sheathing as specified per WA Climate Zone for condensation. (Pullman is in Climate Zone 2 and R-25 minimum ridged board or air-impermeable insulation R-value is required).

Go to www.energy.wsu.edu for an illustrated explanation of unvented attics.

Ducts in New Construction

- Ducts that are installed in an exterior wall, floor or ceiling are not allowed to displace the required envelope insulation. Building cavities are not allowed to be used as ducts. All duct, air handler and filter boxes are required to be sealed. Joints and seams are required to meet the requirements of International Residential Code, Section M1601.4.
- A **Duct Tightness Test** is required when the duct(s) or the air handler is located outside the conditioned space (attic, crawl space, garage, etc). A **Post-Construction Test or a Rough-In Test** may be used to determine duct tightness as detailed in WSEC, Section 503.10.3. The testing agent must sign an affidavit documenting the test results. The affidavit is required to be provided to the building department. It can be mailed or be left for the building inspector with the appliance installation instructions.*
- A duct tightness test is not required on a system consisting of a non-direct vent type combustion appliance located in an unconditioned space that is connected to a maximum of 6-feet or less of duct in the unconditioned space.



Duct Tightness Testing Kit



Testing the Duct Tightness

A copy of RS-33 may be found at:
www.energy.wsu.edu

Prescriptive Approach

- Prescriptive Table 6-2 is now only applicable for one and two family dwellings and contains only three prescriptive options. Note that two of the prescriptive options require R-24 above grade wall insulation.

**TABLE 6-2
PRESCRIPTIVE REQUIREMENTS FOR SINGLE-FAMILY RESIDENTIAL
CLIMATE ZONE 2**

Option	Glazing Area % of Floor	Glazing U-Factor		Door U-Factor	Ceiling	Vaulted Ceiling	Wall Above Grade	Wall• int. Below Grade	Wall• ext. Below Grade	Floor	Slab on Grade
		Vertical	Overhead								
I.	12%	0.32	0.50	0.20	R-49 or R-38 adv	R-38	R-21 int	R-21 TB	R-12	R-30	R-10 2'
II.	15%	0.32	0.50	0.20	R-49 or R-38 adv	R-38	R-19 + R-5	R-21 TB	R-12	R-30	R-10 2'
III.	Unlimited	0.30	0.50	0.20	R-49 or R-38 adv	R-38	R-19 + R-5	R-21 TB	R-12	R-30	R-10 2'

*see the WSEC for footnotes

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Lighting

- At least 50% of the interior lighting fixtures are required to be High Efficacy Luminaries. A High Efficacy Luminaire is defined as a lighting fixture that does not contain medium screw base socket (E24/E26) and whose lamps or other light source have a minimum efficiency of:
 - a. 60 lumens per watt for lamps over 40 watts;
 - b. 50 lumens per watt for lamps 15 watts to 40 watts;
 - c. 40 lumens per watt for lamps 15 watts or less.



Energy Efficiency Requirements

- At least one credit is required to be developed from Chapter 9, Table 9-1. This table has a list of options for describing the credits or debits based upon the design of the dwelling.

Building Submittals

- Building plans submitted for review will need to state on the plan cover sheet the compliance method used (systems analysis, component performance, or prescriptive). Regardless of the method used, supporting compliance documentation (calculations, building components, credits, debits, etc) must be submitted with the building permit application. The plan sheets must clearly show the R or U values contained in supporting documentation.

Existing Dwellings

There are also changes in the WSEC for existing structures, one and two family dwellings, and additions less than 750 square feet:

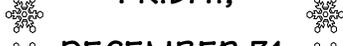
- Any non-residential space or structure converted to a residential use is now required to come into full compliance with the WSEC.
- When existing wall cavities, in one and two family dwelling, are exposed during an alteration or repair, they are required to be filled to full depth with insulation having an equivalent minimum R value of R-15 in 2x4 framed walls and R-21 in 2x6 framed walls.
- The WSEC states “When a space-conditioning system is altered by the replacement or installation of space-conditioning equipment (including replacement of the air handler, outdoor condensing unit of a split system air conditioner or heat pump, cooling coil, or the furnace heat exchanger), the duct system that is connected to the new or replacement space-heating equipment shall be tested as specified in RS-33.” The test results are required to be provided to the homeowner and the building inspector. Testing is not required if the duct system is documented as being previously tested and meeting the above requirements; or with less than 40 feet of duct outside the building envelope; or the duct system is constructed, insulated or sealed with asbestos.
- The alterations to lighting systems are same as new construction.

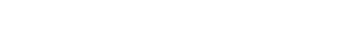
The WSU Energy Extension Office has and continues to conduct trainings throughout the state. Training locations, times and additional information may be found at www.energy.wsu.edu .

*Examples of the certificates can be found at <http://www.energy.wsu.edu/BuildingEfficiency/EnergyCode.aspx> . The certificates may be down loaded and used as is or customized for your company as long as it contains the required information.



Flip Flopping Like Frog Legs in a Hot Skillet, Carbon Monoxide Alarm Requirements Changed


**CITY OFFICES**
**WILL BE**
**CLOSED:**
**FRIDAY,**
**DECEMBER 24,**
**FOR**
**CHRISTMAS.**

**FRIDAY,**
**DECEMBER 31,**
**FOR NEW**
**YEAR'S DAY.**



In the June News Letter we outlined the new requirement for installation of Carbon Monoxide Alarms in residential construction. Then in August the State Building Code Council (SBCC) informed us that changes were made to the Carbon Monoxide Alarm rules before final adoption. Corrections to the Carbon Monoxide Alarm requirements were then printed in the September News Letter. November 19, 2010 the SBCC had an emergency rule making session and decided to change the requirements for Carbon Monoxide Alarms back to the original language. The Carbon Monoxide Alarm issue will be further discussed at the next regular rule making session. Go to <https://fortress.wa.gov/ga/apps/sbcc/default.aspx> for the latest updates.

The following paragraph contains the original news letter article about Carbon Monoxide Alarms:

Carbon Monoxide Alarms

Starting July 1, 2010 the State of Washington will require Single Station Carbon Monoxide Alarms to be installed in all newly constructed Residential Buildings that have fuel-fired (natural gas, propane or wood burning) appliances (furnace's, water heaters, fireplaces, cook stoves etc.), or have attached garages. Alarms must be placed outside of bedrooms in the immediate vicinity of the bedrooms such as in a hall or common area. The Carbon Monoxide Alarms will need to be compliant with UL 2034 and installed according to the manufacturer's installation instructions.

All existing Residential occupancies built prior to July 1, 2010 that have fuel-fired appliances or attached garages shall be required to have Carbon Monoxide Alarms installed by January 1, 2013. This is applicable to all residential buildings even if the permit was issued before July 1, 2010. **EXCEPTION: Owner occupied one and two family dwellings legally occupied (passed final inspection and certificate of occupancy issued) prior to July 1, 2010 are exempt from this retrofitting requirement.**

Reference WAC 51-51-0315 and WAC 51-50-0907.

