



**San Juan County
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POLICIES / PROCEDURES / INTERPRETATIONS

Energy Code Requirements for Heated Garage/Workshop

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BP-2012-03

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Issued 03/28/2012

ISSUE:

The Washington State Energy Code (WSEC), section **101.3 “Scope”**, states, in part *“Spaces within the scope of Section R101.2 of the International Residential Code shall comply with Chapters 1 through 10 of this Code.”* Review of the scope of the IRC (in part), would include *“detached one- and two-family dwellings.....and their accessory structures.”*

What energy code requirements should be applied to accessory structures (as defined by the IRC and clarified in SJC Policy BP-2012-02 *“Freestanding Residential Structures”*) that are provided with a source of heat, either at time of construction or after construction and operation when a need or desire for heat has been identified?

ANALYSIS:

The stated intent of the WSEC in part is *“...to achieve efficient use and conservation of energy”*. The IRC also contains an intent provision which states, in part, *“The purpose of this code is to establish minimum requirements to safeguard the public safety, health and general welfare through affordability,energy conservation....”*. It is clear that the conservation of energy is important, however, consideration should be given to economics as well.

Garages and workshops are typically occupied and used on an infrequent basis. It is reasonable to infer that the heating of such would occur infrequently as well, on an as needed or on demand basis. If requirements are felt to be excessive, in the perception of the owner, there is a tendency to install heating equipment without a permit, ignoring additional safety regulations, in an effort to circumvent the perceived onerous energy code regulations. This outcome is likely as well as undesirable for the protection of life and property.

Another issue arising in this discussion is what provisions would apply to an unheated garage/workshop that the owner seeks to later convert to a heated space. The energy code has two provisions that address this. First, **101.3.2 “Application to Existing Buildings”** provides an exception to full compliance that states (in part) *“The building official may approve designs of alterations or repairs which do not fully conform with all of the requirements of this Code where in the opinion of the building official full compliance is physically impossible and/or economically impractical and: 1. The alteration or repair improves the energy efficiency of the building...”*. Next, Section **101.3.2.5 “Building Envelope”** provides an exception to the prescribed insulation values in existing construction that states (in part) *“2. Where the structural elements of the altered portions of roof/ceiling, wall or floor are not being replaced, these elements shall be deemed to comply with this Code if all existing framing cavities which are exposed during construction are filled to the full depth with batt insulation or insulation having an equivalent nominal R-value. 2x4 framed walls shall be insulated to a minimum of R-15 and 2x6 framed walls shall be insulated to a minimum of R-21.”*

Roof/ceiling assemblies shall maintain the required space for ventilation. Existing walls and floors without framing cavities need not be insulated. Existing roofs shall be insulated to the requirements of this Code if:

- a. The roof is un-insulated or insulation is removed to the level of the sheathing, or*
- b. All insulation in the roof/ceiling was previously installed exterior to the sheathing or nonexistent.*

A final element not given specific consideration in the energy code is reuse of windows. The energy code provisions for unrated windows offer a very high default “U factor”, making prescriptive compliance impossible and component analysis compliance extremely difficult. The energy code does not assign any value to the energy savings realized by reuse of materials including actual energy used in manufacturing, transportation energy costs, or additional energy used for installation. While it would be difficult to quantify these values, it is clear that reuse of materials is often encouraged and contributes in a positive way to energy conservation.

POLICY:

It shall be the policy of San Juan County to allow heated accessory structures when they comply with the following:

- 1) A permit and required inspections shall be obtained for the installation of the heat source(s).
- 2) Insulation shall be installed in the walls and roof/ceiling to a minimum of the extent provided in 101.3.2.5 exception #2 (as noted above in discussion)
- 3) Used/reclaimed double pane windows shall be allowed for use in garage/workshop glazing without documentation of “U-factor”. Where a condition exists that would require safety glazing, compliance is required.
- 4) The exterior doors used on a heated garage/workshop may be installed without regard to “U-Factor”.
- 5) Future conversion to habitable space or dwelling use will require full compliance with the current energy code and may require alterations in order to achieve compliance.
- 6) Compliance with all other applicable codes, laws, rules, and regulations is required.