



Northwest ENERGY STAR® Homes Approved Technical Compliance Options Summary

TCO: Raised Heel Truss & Advanced Framing Trade-Off (Idaho & Montana)	
Option Type:	Component Trade-Off
Submitted By:	NEEA
Date Approved:	November 2010
Description:	Defines tradeoffs for Advanced Framing and Raised Heel Trusses until Thermal Enclosure Checklist requirements go into effect on January 1, 2012.
References:	<ol style="list-style-type: none"> 1. Northwest ENERGY STAR Homes 2011 Specifications for ID/MT BOP1 2. Thermal Enclosure Checklist 3. Raised Heel Truss & Advanced Framing Trade-Off Specification, attached
Additional Comments:	<ol style="list-style-type: none"> 1. All requirements specified in ID/MT BOP1 would apply to this TCO except as specified below. <ul style="list-style-type: none"> • Furnace AFUE \geq 0.94 AFUE or Heat Pump HSPF \geq 9.2 OR • Water Heater EF \geq 0.67 OR • Window U-Value \leq 0.28 and SHGC \geq 0.28 OR • Wall U-Value \leq 0.041 OR • Envelope tightness \leq 2.5ACH @50 Pa with H/ERV OR • Ducts Inside



Equipment Specifications and Installation Standards for Raised Heel Truss & Advanced Framing Trade-Off

1.1 General

This section focuses on the equipment specifications and installation standards for the Raised Heel Truss & Advanced Framing Trade-Off to meet the requirements of the NW EnergyStar program as applied to either the ID&MT BOP1 or the WA BOP1. Wherever local codes are more stringent than these requirements such that application of the code would result in a higher level of efficiency, local code requirements shall apply.

To comply with the TCO, one trade-off item from requirement (2) of this TCO shall be selected. The specifications for each of these items is given in the following sections of this specification.

1.2 Window Upgrade (Option)

The window upgrade trade-off requires a window with U-value ≤ 0.28 and SHGC ≥ 0.28 , NFRC rated.

1.3 Wall Upgrade (Option)

The overall wall U-value shall be .041; the reference wall construction shall be wall construction with intermediate framing techniques using R-21 batt insulation and R-5 foam sheathing. Other alternatives could include double wall construction or structural insulated panels and high density foam in-place insulation that achieve this U-value.

1.4 Air sealing and Envelope Tightness with HRV (Option)

1.4.1 Air Sealing:

Envelope air tightness shall be verified by Blower Door test and provided as part of the certification process. All homes certified under this TCO shall include a Blower Door test showing overall leakage. For this TCO the air leakage shall not exceed 2.5 ACH measured at 50 Pa pressure. Blower door procedures shall meet the provisions set forth in the BOP2 Northwest ENERGY STAR Homes specification.

1.4.2 H/ERV:

An Energy or Heat Recovery Ventilator (H/ERV) shall be installed in conjunction with the envelope tightening measure which meets the requirements of the H/ERV set forth in the BOP2 Northwest ENERGY STAR Homes specification.

1.5 Interior Duct Placement (Option)

Ducts shall be installed within the conditioned envelope per the Performance Tested Comfort Systems specifications. Up to five percent (5%) of the linear feet of the supply duct system and up to five percent (5%) of the linear feet of the return duct system may be located outside the thermal and/or air barriers of the house or in exterior cavities of the house.

1.6 Gas Furnace or Heat Pump Upgrade

The primary heating system in this trade-off shall be a gas furnace with a minimum AFUE rating of 0.94 or a heat pump with a minimum HSPF rating of 9.2.

1.7 Water Heater Upgrade

The gas water heater shall have a minimum annual energy factor of 0.67.