RESNET
Residential Energy Services Network

Setting the STANDARD for QUALITY

Implementing the TBC:
Raters Perspective in the Field

Wednesday 8:30am – 10am / Nautilus 1

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ENERGY STAR Qualified Homes
Thermal Bypass Inspection Checklist

Home Address:_____ City:_____ State:_____

Thermal Bypass	Inspection Guidelines	Corrections Needed	Builder Verified	Rater Verified	N/A
1. Overall Air Barrier and Thermal Barrier Alignment	**Requirements:** Insulation shall be installed in full contact with sealed interior and exterior air barrier except for alternate to interior air barrier under item no. 2 *(Walls Adjoining Exterior Walls or Unconditioned Spaces)*				
	All Climate Zones:				
	1.1 Overall alignment throughout home	☐	☐	☐	☐
	1.2 Garage band joist air barrier (at bays adjoining conditioned space)	☐	☐	☐	☐
	1.3 Attic eave baffles where vents/leakage	☐	☐	☐	☐
	Only at Climate Zones 4 and Higher:				
	1.4 Slab-edge insulation (A maximum of 25% of the slab edge may be uninsulated in Climate Zones 4 and 5.)	☐	☐	☐	☐
	Best Practices Encouraged, Not Req'd.:				
	1.5 Air barrier at all band joists (Climate Zones 4 and higher)	☐	☐	☐	☐
	1.6 Minimize thermal bridging (e.g., OVE framing, SIPs, ICFs)	☐	☐	☐	☐
2. Walls Adjoining Exterior Walls or Unconditioned Spaces	**Requirements:** • Fully insulated wall aligned with air barrier at both interior and exterior, **OR** • alternate for **Climate Zones 1 thru 3**, sealed exterior air barrier aligned with RESNET Grade 1 insulation fully supported • Continuous top and bottom plates or sealed blocking				
	2.1 Wall Behind Shower/Tub	☐	☐	☐	☐
	2.2 Wall Behind Fireplace	☐	☐	☐	☐
	2.3 Insulated Attic Slopes/Walls	☐	☐	☐	☐
	2.4 Attic Knee Walls	☐	☐	☐	☐
	2.5 Skylight Shaft Walls	☐	☐	☐	☐
	2.6 Wall Adjoining Porch Roof	☐	☐	☐	☐
	2.7 Staircase Walls	☐	☐	☐	☐
	2.8 Double Walls	☐	☐	☐	☐
3. Floors between Conditioned and Exterior Spaces	**Requirements:** • Air barrier is installed at any exposed insulation edges • Insulation is installed to maintain permanent contact with sub-floor above • **Optional until July 1, 2008**, insulation is installed to maintain permanent contact with air barrier below				
	3.1 Insulated Floor Above Garage	☐	☐	☐	☐
	3.2 Cantilevered Floor	☐	☐	☐	☐
4. Shafts	**Requirements:** Openings to unconditioned space are fully sealed with solid blocking or flashing and any remaining gaps are sealed with caulk or foam (provide fire-rated collars and caulking where required)				
	4.1 Duct Shaft	☐	☐	☐	☐
	4.2 Piping Shaft/Penetrations	☐	☐	☐	☐
	4.3 Flue Shaft	☐	☐	☐	☐
5. Attic/ Ceiling Interface	**Requirements:** • All attic penetrations and dropped ceilings include a full interior air barrier aligned with insulation with any gaps fully sealed with caulk, foam or tape • Movable insulation and fits snug in opening and air barrier is fully gasketed				
	5.1 Attic Access Panel (fully gasketed and insulated)	☐	☐	☐	☐
	5.2 Attic Drop-down Stair (fully gasketed and insulated)	☐	☐	☐	☐
	5.3 Dropped Ceiling/Soffit (full air barrier aligned with insulation)	☐	☐	☐	☐
	5.4 Recessed Lighting Fixtures (ICAT labeled and sealed to drywall)	☐	☐	☐	☐
	5.5 Whole-house Fan (insulated cover gasketed to the opening)	☐	☐	☐	☐
6. Common Walls Between Dwelling Units	**Requirements:** Gap between drywall shaft wall (i.e., common wall) and the structural framing between units is fully sealed at all exterior boundary conditions				
	6.1 Common Wall Between Dwelling Units	☐	☐	☐	☐

Home Energy Rating Provider: _____ Builder Company Name: _____
Home Energy Rater Company Name: _____ Builder Employee Signature: _____
Home Energy Rater Signature: _____ Inspection Date: _____

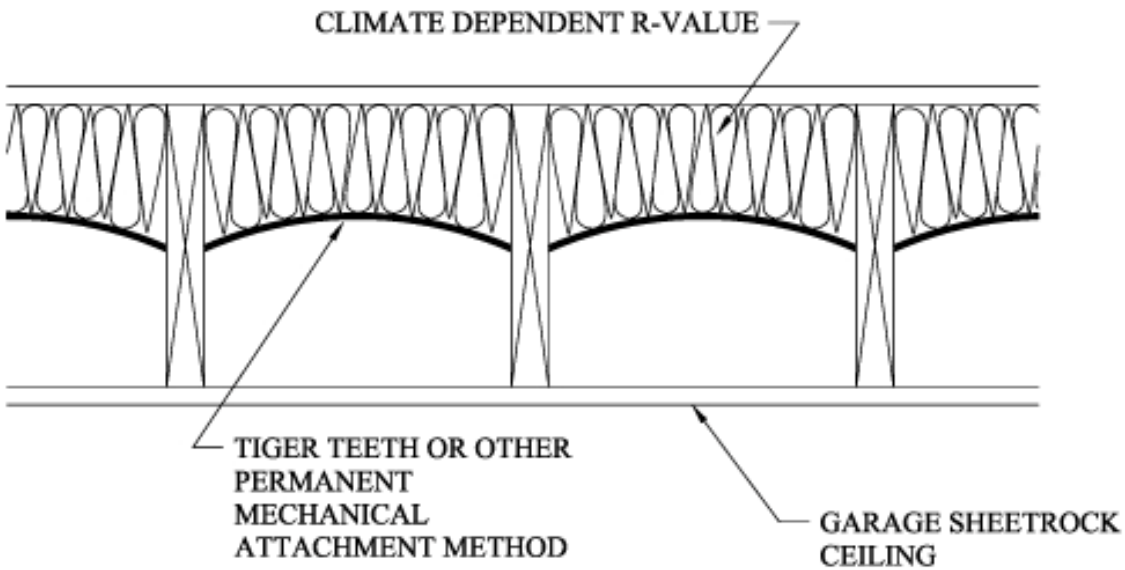
ENERGY STAR Qualified Homes
Thermal Bypass Inspection Checklist

The Thermal Bypass Inspection Checklist must be completed for homes to earn the ENERGY STAR label. The Checklist requires visual inspection of framing areas where air barriers are commonly missed and inspection of insulation to ensure proper alignment with air barriers, thus serving as an extra check that the air and thermal barriers are continuous and complete. State, local, and regional codes, as well as regional ENERGY STAR program requirements, supersede the items specified in this Checklist.

Guidance on Completing the Thermal Bypass Inspection Checklist:

1. Accredited HERS Providers and certified home energy raters shall use their experience and discretion in verifying that each Inspection Checklist item is installed per the inspection guidelines (e.g., identifying minor defects that the Provider or rater deems acceptable versus identifying major defects that undermine the intent of the Checklist item).
2. Alternative methods of meeting the Checklist requirements may be used in completing the Checklist, if the Provider deems them to be equivalent, or more stringent, than the Inspection Checklist guidelines.
3. In the event an item on the Checklist cannot be verified by the rater, the home cannot be qualified as ENERGY STAR, unless the builder assumes responsibility for verifying, under the direction and oversight of the Provider, that the item has met the requirements of the Checklist. This option is available at the discretion of the Provider or rater but may not be used to verify more than six (6) items on the Inspection Checklist. This responsibility will be formally acknowledged by the builder signing-off on the Checklist for the item(s) that they verified. The column titled "N/A" should be used when the checklist item is not present in the home or when local code requirements take precedent.
4. The Checklist may be completed for a batch of homes using a RESNET-approved sampling protocol when qualifying homes as ENERGY STAR. For example, if the approved sampling protocol requires rating one in seven homes, then the Checklist will be completed for the one home which was rated.
5. In the event that a Provider or rater finds an item that is inconsistent with the Checklist Inspection guidelines, the home cannot be qualified as ENERGY STAR until the item is corrected in a manner that meets the ENERGY STAR requirements. If correction of the item is not possible, the home cannot earn the ENERGY STAR label.
6. The Provider or rater is required to keep a hard copy record of the completed and signed Checklist. The signature of a builder employee is also required if the builder verified compliance with any item on the Checklist.
7. For purposes of this Checklist, an air barrier is defined as any solid material that blocks air flow between a conditioned space and an unconditioned space, including necessary sealing to block excessive air flow at edges and seams. Additional information on proper air sealing of thermal bypasses can be found on the Building America Web site (www.eere.energy.gov/buildings/building_america) and in the EEBA Builder's Guides (www.eeba.org). These references include guidance on identifying and sealing air barriers, as well as details on many of the items included in the Checklist.

DETAIL #29 FLOOR INSULATION OF ROOM ABOVE GARAGE



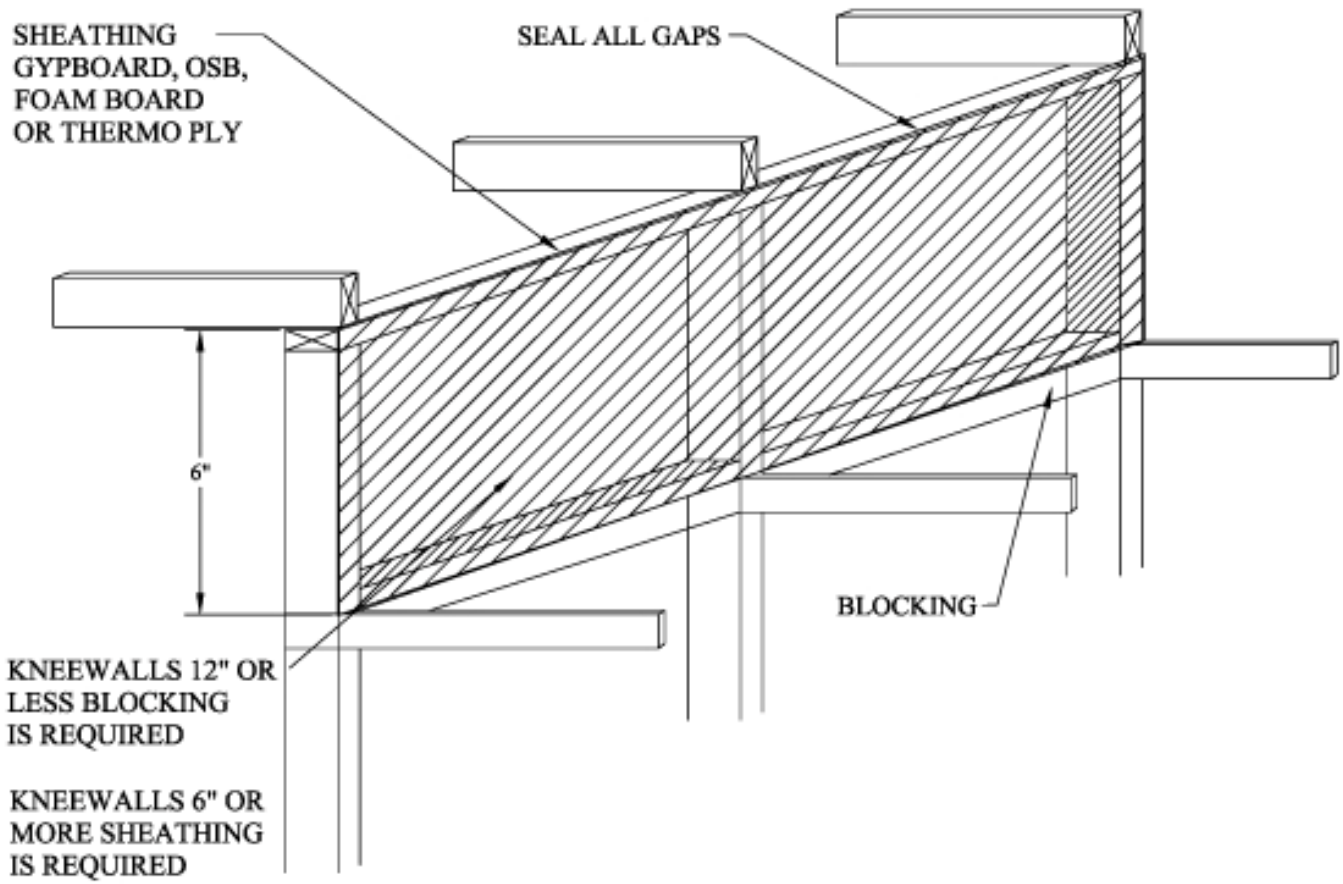
ADD END BLOCKING WHEN END OF FLOOR JOIST CAVITY IS EXPOSED TO ATTIC OR UNDER THE ROOM WALLS.

HOT HUMID - MINIMUM R-19

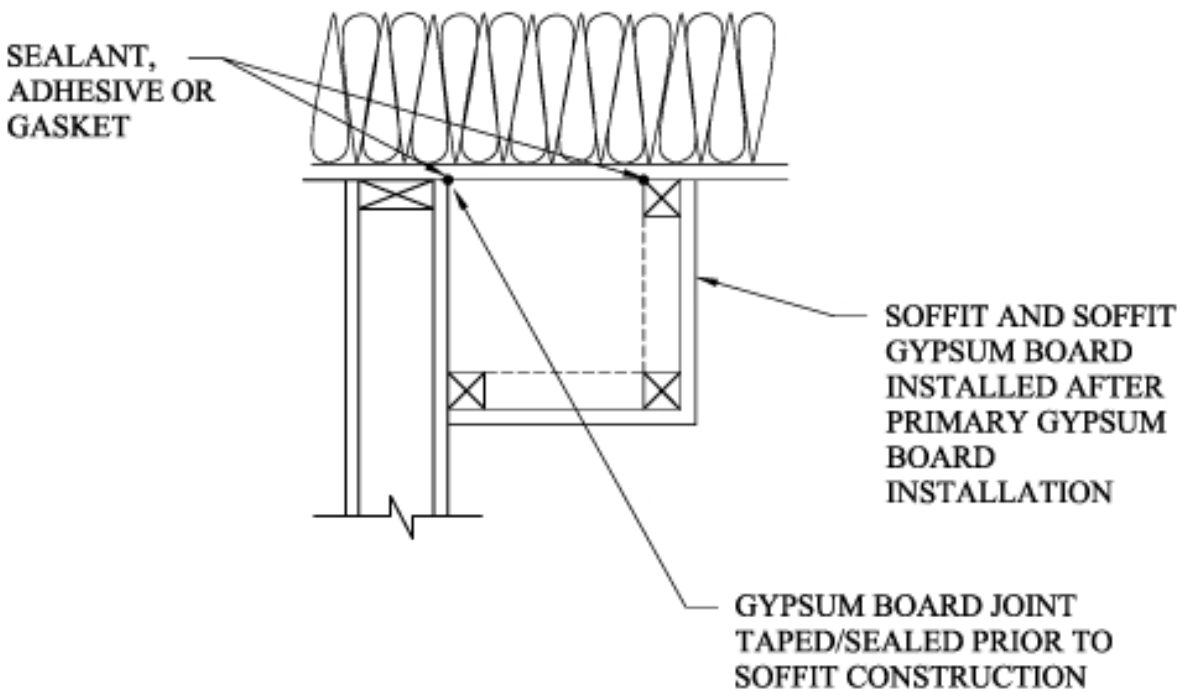
MIXED HUMID - MINIMUM R-19

DETAIL # 4

KNEEWALL/PONYWALLS SHEATHING



DETAIL #28 DROPPED CEILING/SOFFIT



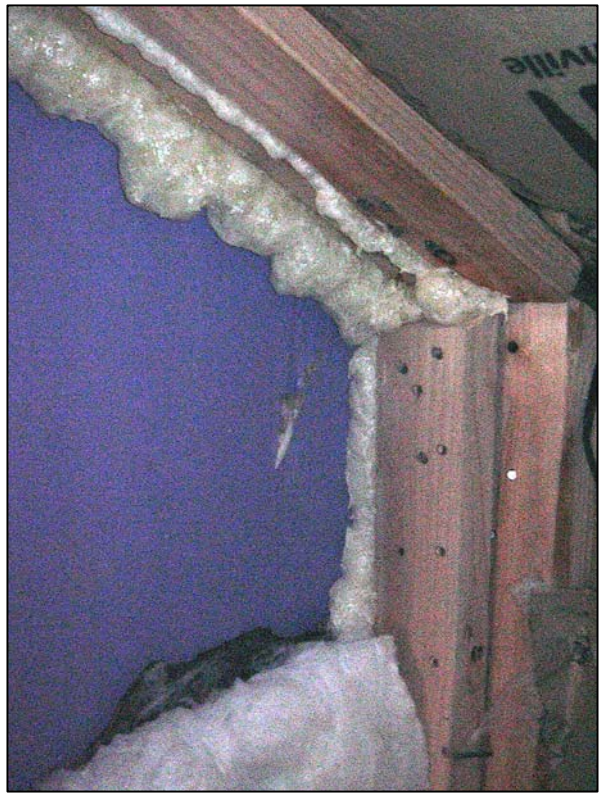
If you are not removing insulation to inspect these bypasses, you are missing them!

Sound batt in place

Party wall sealed

Wire hole sealed,
but party wall is not

Insulation in place



Wall sealed

Insulation in wrong place, area not sealed

What You Don't Want To See

Caulk where there is no leak – wasted time and money

QUESTIONS?