Technical Bulletin: Effective Air Barriers - Tubs on Exterior Walls

March 1, 2013

ENERGY STAR (REV. 06) requires fully aligned air barriers behind showers and tubs on exterior walls (Item 3.1.1 Thermal Enclosure Checklist).

Footnote 6 further defines an air barrier:

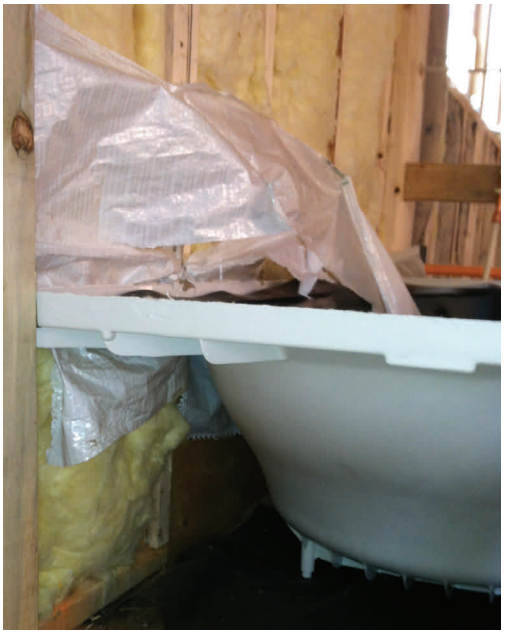
For purposes of this Checklist, an air barrier is defined as any durable solid material that blocks air flow between conditioned space and unconditioned space, including necessary sealing to block excessive air flow at edges and seams and adequate support to resist positive and negative pressures without displacement or damage. EPA recommends, but does not require, rigid air barriers.

Open-cell or closed-cell foam shall have a finished thickness ≥ 5.5 in. or 1.5 in., respectively, to qualify as an air barrier unless the manufacturer indicates otherwise.

If flexible air barriers such as house wrap are used, they shall be fully sealed at all seams and edges *and supported using fasteners with caps or heads ≥ 1 in. diameter unless otherwise indicated by the manufacturer. Flexible air barriers shall not be made of kraft paper, paper-based products, or other materials that are easily torn. If polyethylene is used, its thickness shall be ≥ 6 mil.*

Please note that flexible air barriers must be fully sealed at all seams and edges. This will help the project achieve success during final infiltration testing which will become more important as homes are built to the 2012 code.

Example 1
Tub wall has air barrier installed, but edges are not fully sealed.



Example 2
Tub air barrier not continuous and not sealed at edges. Completely ineffective.

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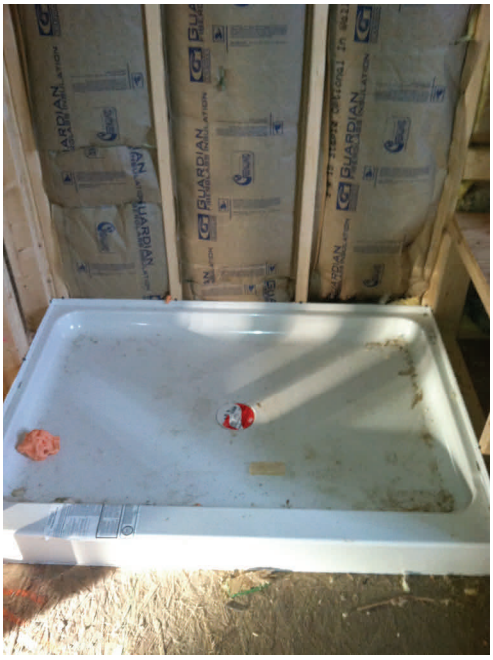
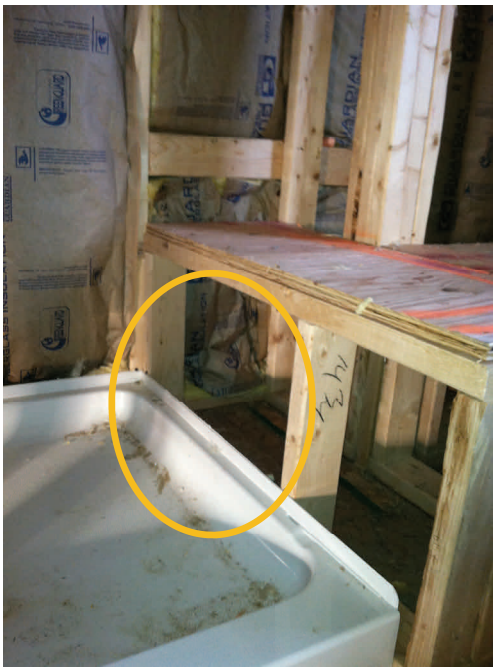
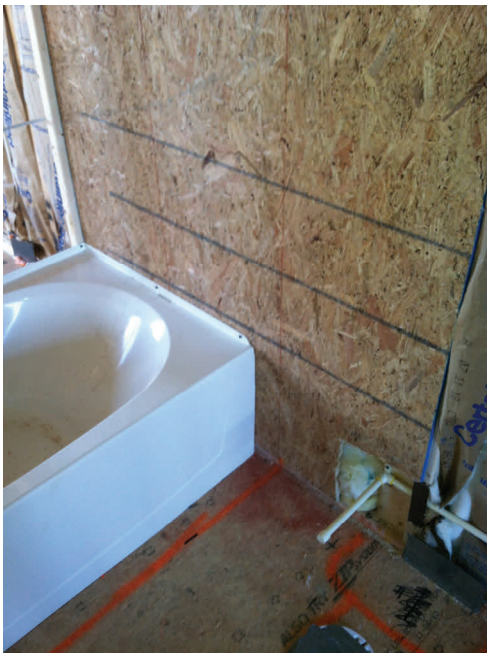


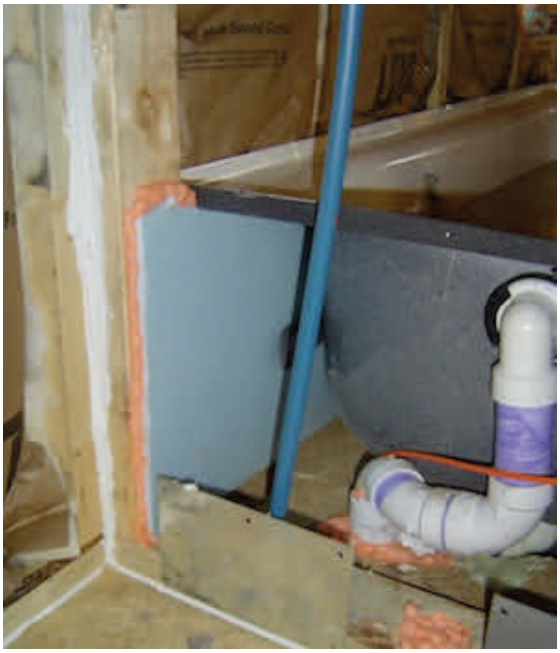
Example 3
No air barrier at shower pan. Shower pans on exterior walls must be treated like tubs.



Example 4
Shower benches on exterior walls are considered double walls and must also have a fully aligned air barrier.



Example 5
Rigid, continuous air barrier. (Best Practice)



Example 6
Fully aligned air barrier with sealed edges.