

Achieving Less than 3 Air Changes per Hour

Rmax Envelope First | Reduce Air Leakage with Rmax Foam Sheathing





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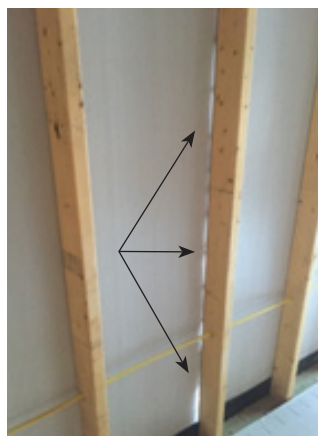
Traditional methods of sheathing do not reduce the thermal bridging through the studs. Builders also have to add a house wrap over OSB or plywood, or they have to perform an intense air sealing program when using fiber boards.

Typical construction in Texas uses fiber board structural sheathing, which provide the bracing strength for shear walls and have a built in water resistant coating. While these often claim to provide a one-step WRB and air barrier, they are too thin and flexible to provide a sealed envelope.

ALLOWING AIR TO ESCAPE

In the images below, the fiber boards are overlapped and stapled as recommended by the manufacturer. However, this installation technique causes the boards to warp and bend creating gaps.

From inside, visible light at the board joints show paths for air and water leaks when installed under normal building practices to manufacturers' specifications. With these structural sheathing solutions, it is still a problem to get a good air barrier on the opaque wall.



Air Barrier and Insulation Installation

The table below (IECC 2015, R402.4.1.1) shows guidelines for air barrier and insulation installation and provides specific criteria for air sealing. Simply installing Rmax foam sheathing with taped seams allows builders to meet 13 of the 23 specific criteria without additional labor or the material costs of strategic air sealing.

House Component	Criteria to Meet Code	Rmax Solution Foam Sheathing Benefit
Air Barrier and Thermal Barrier	A continuous air barrier shall be installed in building envelope	Per ASTM E2178
	Exterior thermal envelope contains a continuous air barrier	Per ASTM E2178
	Breaks or joints in the air barrier shall be sealed	Seal joints with R-SEAL Tape
	Air-permeable insulation shall NOT be used as a sealing material	Foam sheathing is an air barrier material
Ceiling/Attic	The air barrier in any dropped ceiling/soffit shall be aligned with the insulation and any gaps in the air barrier sealed	
	The junction of the top plate and top of exterior walls shall be sealed	Foam sheathing can be caulked at top plate
	Exterior thermal envelope insulation for framed walls shall be installed in substantial contact and continuous alignment with the air barrier	When taped, the system is a WRB and fully tested air barrier
	Knee wall shall be sealed	Using foam sheathing with taped seams
Window, Skylights and Doors	The space between window/door jambs, framing and skylights shall be sealed	
Rim Joists	Rim joists shall be insulated and include the air barrier	Using foam sheathing and air seal perimeter
Floors (including above-garage and cantilevered floors)	Insulation shall be installed to maintain permanent contact with underside of sub-floor decking	
	The air barrier shall be installed at any exposed edge of insulation	
Crawl Space and Walls	Where provided in lieu of floor insulation - insulation shall be permanently attached to the crawl space walls	Using Thermasheath®-XP with taped joints
	Exposed earth in unvented crawl spaces shall be covered with Class I vapor retarder with overlapping joints taped	Can lay polyiso over vapor retarder for thermal barrier on floor
Shafts, Penetrations	Duct shafts, utility penetrations and flue shafts opening to exterior or unconditioned space shall be sealed	
Narrow Cavities	Batt in narrow cavities shall be cut to fit, or narrow cavities shall be filled by insulation that readily conforms to the available cavity space	
Garage Separation	Air sealing shall be provided between the garage and conditioned spaces	Foam sheathing with taped seams
Recessed Lighting	Recessed light fixtures installed in the buildings thermal envelope shall be air tight, IC rated and sealed to the dry wall	
Plumbing and Wiring	Batt insulation shall be cut neatly to fit around wiring and plumbing in exterior walls or insulation that on installation readily conforms to the available space shall extend behind piping and wiring	
Shower/Tub on Exterior Walls	Exterior walls adjacent to showers and tubs shall be insulated and the air barrier installed separating them from the showers and tubs	Using foam sheathing with taped seams on external shower walls will meet this criteria
Electrical/Phone Box on Exterior Walls	The air barrier shall be installed behind electrical or communication boxes or air sealed boxes shall be installed	Using foam sheathing with taped seams will ensure all these boxes are behind the air barrier
HVAC Register Boots	HVAC register boots that penetrate building thermal envelope shall be sealed to the sub-floor or drywall	
Fireplaces	An air barrier shall be installed on fireplace walls, these shall have gasket doors	



Improve Performance by Using Rmax Foam Sheathing

A home that uses Rmax foam sheathing is assured to have a good air and water barrier on the opaque wall. The board is thicker and more rigid, the ends butt tightly together and can be taped to provide a weather tight seal. Gaps are eliminated, the joints are sealed with tape and no visible light can be seen from inside.

The Rmax Residential Solution creates a clean and consistent look to homes under construction. It is a tight and rigid sheathing system that will not warp or bend at the joints, and is easy to cut and install with minimal labor.

Traditional Assembly: Fiber Board, OSB or Plywood



Fiber board requires a lot of material to seal edges and joints due to the thin and flexible nature of the board.



OSB, plywood and gypsum also require strategic and expensive air sealing.

Advanced Assembly: Rmax Foam Sheathing



External wall with sealed joints where electrical boxes are inside the air barrier.



Corners and joints are sealed with external tape. Only top and bottom plates require additional sealant.



Improving Your Design.

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