Beat Florida Heat with the Best Insulation Value for Block Walls

Heat travels through Florida walls three ways: conduction, convection and radiation. Competitive insulation products such as Fi-Foil, foil bubble pak or fiberglass address only one or two of the ways that heat flows into Florida homes.

TUFF-R™ Insulating Sheathing Blocks All Three Sources of Heat Transmission in Masonry Construction

In Florida, concrete block is a favored material for home walls and the walls of commercial and other buildings because of its structural strength, ease of assembly and resistance to termite damage and mold and moisture decay.

On the down side, porous concrete block has no insulation value to speak of, so walls constructed of this material should be fortified for energy savings and to ensure the lowest possible air conditioning and heating bills.

TUFF-R™ Insulating Sheathing, installed on the interior of block walls in Florida, provides an unequaled combination of energy performance, condensation control and ease of installation.

Here's Why TUFF-R™ Insulating Sheathing Is Tops for Block

First, TUFF-R™ Insulating Sheathing is unsurpassed in insulation value. It delivers more insulating R-value per inch because of its unique construction of closed cell foam and impermeable facers. Moreover, TUFF-R™ Insulating Sheathing inhibits all three sources of heat transmission: convection, conduction and radiation. Reflective insulations such as Fi-Foil, foil bubble pak or even fiberglass can not match the total performance of TUFF-R™ Insulating Sheathing.

And as an added bonus, TUFF-R™ Insulating Sheathing controls the dew-point, retarding damaging condensation and expensive and uncomfortable moisture migration into the home. Plus, a home's HVAC system does not have to work so hard to control interior humidity.

High Insulating Values

Stabilized R-Values	TUFF-R™	
Nominal Board Thickness, inches (mm)	3/4" (19.1)	1.0" (25.4)
Product R-Value, 75°F, mean temperature	5	6.5
System R-Value, with 3/4" airspace	7.8	9.27

Building & Construction

As for application ease, installation of TUFF-R™ Insulating Sheathing could hardly be simpler. The extremely lightweight insulation boards are attached to the block wall with construction-grade adhesive or merely held in place while the wood or metal furring strips are fastened through the sheathing into the wall.

Finally, gypsum board is secured to the wood or metal furring strips to furnish a protective interior finish. Apart from décor, gypsum board is essential to provide the thermal barrier required by building codes.

As an additional bonus, the reflective airspace created by the furring strips between the TUFF-R™ Insulating Sheathing and the gypsum board increases the insulating value of the wall system.

Block Out Heat with the Best

For builders with quality reputations, there's no substitute for the best insulation value: TUFF-R™ Insulating Sheathing. And the investment for this high value is small in comparison to total building cost, but will continue to pay significant energy-saving dividends** to the property owner.

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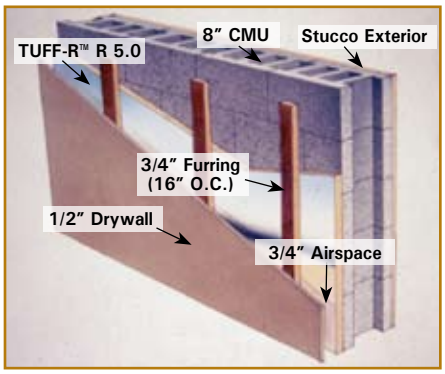
†System R-value is the total R-value achieved when a bright aluminum foil surface is installed next to a 3/4" airspace in a wall. The product R-value is then added to the airspace R-value of 2.77 (rounded to 2.8) to provide the system R value, per ASHRAE Fundamentals Handbook. R= °F•ft²•h/Btu; RSI= °C•m²/W. Calculation Note: RSI=R-value x 0.1761

**Savings vary. Find out why in the Dow fact sheet. Higher R-value means greater insulating power. In fact, Dow even offers a 15-year Thermal Resistance Limited Warranty for TUFF-R™ Insulating Sheathing. Now that's an added measure of confidence to help you select "the very best."

fast facts

To learn more about Dow's full line of building envelope solutions visit www.insulateyourhome.com or call 1-866-583-BLUE (2583).

CMU Block Example (Air Film to Air Film)



8" CMU wall assembly with 0.75" TUFF-R™ Insulating Sheathing, ¾" reflective airspace, ¾" furring @ 16" o.c. and stucco exterior.

Dow TUFF-R™

Component	R-value thru cavity/ airspace area	R-value thru ¾" furring area
Inside air film	0.68	0.68
1/2" drywall	0.45	0.45
3/4" furring	—	0.94
3/4" airspace	2.77	—
TUFF-R™ Insulating Sheathing, 3/4"	5.0	5.0
8" CMU	1.11	1.11
Stucco exterior	0.15	0.15
Outside air film	0.25	0.25
Total R-value	10.41	8.58
U-value	0.096	0.116
% air/furring	90%	10%
	0.086	0.012
Total U-value		0.098
Total Effective R-value		**10.16**

Fi-Foil*

Inside air film	0.68	0.68
1/2" drywall	0.45	0.45
3/4" furring	—	0.94
3/4" airspace	—*	—
Fi-Foil	4.2*	—
8" CMU	1.11	1.11
Stucco exterior	0.15	0.15
Outside air film	0.25	0.25
Total R-value	6.84	2.64
U-value	0.146	0.379
% air/furring	90%	10%
	0.131	0.0379
Total U-value		0.169
Total Effective R-value		**5.92**

Overall thermal resistance of wall assembly based on ASHRAE calculations.

*Information taken from Fi-Foil tech data sheet

TUFF-R™ Insulating Sheathing Facts that Figure In for Energy Savings

Features	Benefits
Low-emissivity foil facers (both sides of TUFF-R™ Insulating Sheathing)	Reflects radiant heat, an absolute must when using air conditioners.
Vapor-retarder quality facers	Eliminates the need for polyethylene. When the joints are taped, TUFF-R™ Insulating Sheathing retards the influx of moisture-laden air better than any continuous vapor retarder, keeping the moisture out. This means occupants are more comfortable, and the air conditioning equipment is needed less often.
Polyisocyanurate foam core	The most efficient foam insulation made is polyisocyanurate, and TUFF-R™ Insulating Sheathing is the most efficient of all polyisocyanurates. The stabilized R-values of TUFF-R™ Insulating Sheathing are warranted for 15 years.
Three-way thermal resistance	Some insulations block radiant heat flow, some work well against conduction and others work well against convection (the movement of air). But TUFF-R™ Insulating Sheathing blocks heat flow in all three ways: radiation by the foil facers and conduction by closed cells. Because of closed cells, convection heat transfer is impossible.
Factory Mutual Research Corporation specification tested. 15-year Thermal Resistance Warranty by Dow.	TUFF-R™ Insulating Sheathing has third-party inspections so that you and your customers know you are getting the very best in insulations.
Continuous insulation; no framing short circuits	TUFF-R™ Insulating Sheathing covers the whole wall. Furring strips are installed over the boards allowing room for shallow electrical boxes. This feature also increases R-values provided by the reflective airspace.
Code approvals: ICC ES NER 616; Florida Product Approval # FL 3839	Meets building codes for the state of Florida thermal requirements.
TUFF-R™ Insulating Sheathing tri-plex reinforced foil facers	Many foams and foil bubble pak products use single or double facers with resultant loss of strength and utility. TUFF-R™ Insulating Sheathing is made with a tri-plex foil facer against the polyisocyanurate foam core, producing the highest-quality uniform closed-cell foams available. Other manufacturers' foam sheathings typically are full of worm holes where there should be insulation. Because of its superior strength, the tri-plex foil facer improves handling ease and reduces facer damage. At the same time, it can be nailed, stapled or glued, and can be cut with a utility knife or any sharp blade.

fast facts

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