



**Styrofoam**<sup>®</sup>  
Spray Polyurethane Foam



# Push the Thermal Envelope

WITH STYROFOAM<sup>™</sup> BRAND SPF INSULATION

Since the invention of STYROFOAM<sup>™</sup> Brand Extruded Polystyrene Insulation 60 years ago, Dow has been a leader in insulation science. Once again, Dow has pushed the thermal envelope – with the introduction of STYROFOAM<sup>™</sup> Brand Spray Polyurethane Foam (SPF) Insulation – RS. Quality builders looking for a differentiated offering will appreciate the added comfort and durability they can give their customers with STYROFOAM<sup>™</sup> Brand SPF Insulation.

## Expand the Comfort Zone

STYROFOAM<sup>™</sup> Brand SPF Insulation is a two-component spray-applied polyurethane foam insulation that, when properly applied, creates a seamless, monolithic barrier for protection against water and air. The SPF blend successfully incorporates

the Enovate 3000 blowing agent from Honeywell, with zero ozone-depletion potential.

Available in two formulas (RS 2045 and RS 2060) for both new and retrofit applications, STYROFOAM<sup>™</sup> Brand SPF Insulation is created from a unique polyol technology, which offers high foam yield and wide processing latitude. The closed-cell 2.0 pcf foam expands during installation to fill cavities, cracks and crevices, blocking the uncontrolled air leakage that can threaten consistent, comfortable indoor temperatures (not to mention drive up energy bills). STYROFOAM<sup>™</sup> Brand SPF Insulation serves as both an insulation and air sealant, plus resists moisture and provides structural reinforcement.

**Expand the comfort zone and watch customer satisfaction grow with STYROFOAM<sup>™</sup> Brand SPF Insulation.**

### The Benefits of STYROFOAM<sup>™</sup> Brand SPF Insulation

- Closed-cell 2.0 pcf foam
- Maximum insulation performance (initial R-value of 6.5 and aged R-value of 5.1 per inch<sup>(1)</sup>)
- Two formulas for wide processing latitude
- Resists moisture and minimizes condensation potential
- Allows installation of air barrier and insulation in one step, reducing construction time
- Eliminates extra steps for flashing and vapor barrier installation (depending on local code requirements)
- Can increase wall strength by approximately 50 percent
- Offers upsell opportunities based on energy savings and enhanced home performance

(1) Aged R-value: 5.1 at 180 days, 73°F, 50% R.H. per FTC requirements. R means resistance to heat flow. The higher the R-value, the greater the insulating power.



## Stop the Great Escape

Uncontrolled air leakage is an enemy of energy efficiency in a home, responsible for up to 40 percent of energy loss.\*

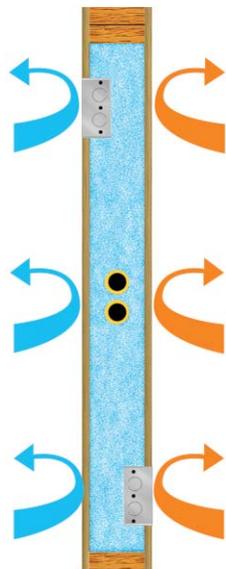
While fibrous batts provide minimal resistance to air infiltration and exfiltration, STYROFOAM™ Brand SPF Insulation fills cracks, crevices and penetrations in the building envelope, when properly applied, creating an airtight seal. STYROFOAM™ Brand SPF Insulation also helps contribute to a quieter home by minimizing vibrations and noises that transmit through gaps and cracks in the building envelope.



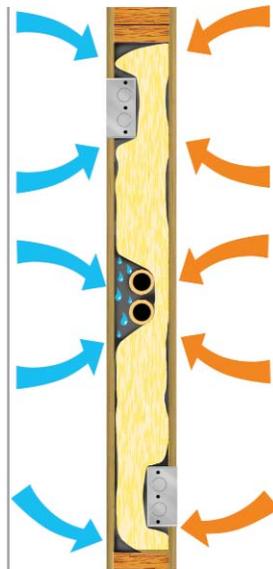
STYROFOAM™ Brand SPF Insulation provides an edge-to-edge air seal, effectively blocking random air leakage and moisture intrusion.



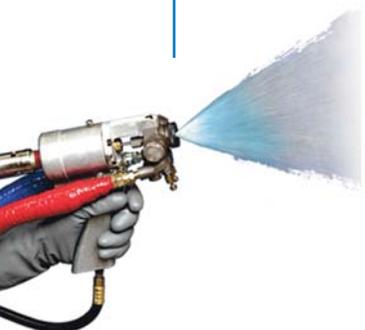
Air escapes easily through and around fibrous batt insulation, decreasing insulation efficiency and trapping dirt and moisture in the fibers.



STYROFOAM™ Brand SPF Insulation expands within the wall cavity, eliminating opportunities for moisture intrusion, when properly applied.



Gaps and open air pockets around batt insulation create optimal conditions for condensation, moisture accumulation and increased potential for mold and mildew growth.



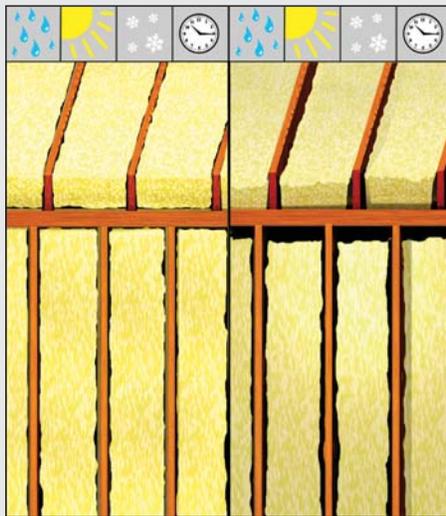
## Manage Moisture

Most building failures are related to moisture. Moisture accumulation can result from uncontrolled air movement.

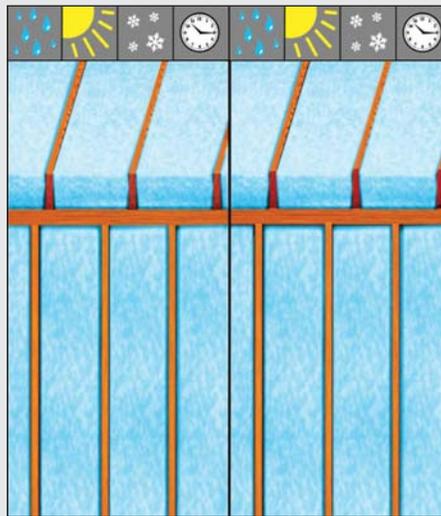
Fiberglass batts have gaps and open pockets that let air circulate within the cavity. And the air-permeable nature of fiberglass allows air to move right through – just like in a furnace filter. Condensation occurs inside attics, ceilings, walls and floors when warm, humid air passes through or around the insulation and contacts a cold surface.

STYROFOAM™ Brand SPF Insulation fills gaps and cracks, halting the majority of airborne moisture movement.

In addition, the closed-cell, uniform structure of STYROFOAM™ Brand SPF Insulation forms an effective air seal to minimize air movement and accompanying moisture. In this way, it helps prevent moisture accumulation and reduces the potential for mold and mildew growth. The rigid foam is also semi-permeable to vapor transmission, allowing for cavity drying in both directions when necessary.



Over time, batt insulation sags and settles, losing insulation value and increasing opportunities for air and moisture movement.



Spray polyurethane foam, such as STYROFOAM™ Brand SPF Insulation, does not shrink, sag or settle, and maintains its insulating and air barrier properties over time.

## Achieve Maximum R-Value

When comparing rated R-values of different insulation options, be sure you have all the facts. In order to achieve the ratings claimed by fiberglass batt manufacturers in their literature and on their packaging, batt insulation must maintain its full loft. And that's not easily achieved.

STYROFOAM™ Brand SPF Insulation expands to fill every nook and cranny during installation when applied properly, providing consistent R-value. But when compressed, the effective R-value of batt insulation can be reduced by as much as 50 percent from the maximum rating on the product. Batt insulation also leaves gaps, allowing energy-robbing air and moisture intrusion.

STYROFOAM™ Brand SPF Insulation is such an efficient insulator it enables the use of smaller, less-expensive HVAC equipment. At the same time, it reduces the amount of ozone-depleting fossil fuels needed for heating and cooling.

TABLE 1  
Why Choose STYROFOAM™ Brand SPF Insulation Over Fiberglass Batt?

Fiberglass Batt	STYROFOAM™ Brand SPF Insulation
Allows air to pass easily through	Creates an airtight, moisture-resistant seal
Does not expand; allows gaps for air and moisture intrusion	Expands to seal and insulate cavities, cracks and crevices, when properly applied
Can hold and allow moisture entry	Repels/deflects water
Rated R-value dependent on "perfect" installation; compresses easily, losing insulating value	Will not compress, settle, shrink or sag; delivers a high initial R-value of 6.5 and aged R-value of 5.1 per inch
Does not provide structural reinforcement	Adds strength and rigidity to the wall assembly

## Add Structural Reinforcement

STYROFOAM™ Brand SPF Insulation provides structural reinforcement\*\* to the homes you build in two important ways:

- reduces fluctuating temperatures and moisture changes in wood structural components
- bonds to studs and sheathing, adding strength and rigidity

Temperature and moisture changes of wood are one of the biggest contributors to building movement. By effectively blocking

air leakage, STYROFOAM™ Brand SPF Insulation helps keep temperature and moisture levels constant, minimizing expansion and contraction of wood frame walls.

In testing conducted by the National Association of Home Builders' (NAHB) research center†, SPF insulation between wood- and steel-stud wall panels increased rack and shear by a factor of two to three when sprayed onto gypsum wallboard or vinyl siding. When sprayed onto oriented strand board (OSB), SPF insulation increased racking strength by approximately 50 percent (see Figure 1). The NAHB concluded that during a design racking event like a hurricane, there would be less permanent deformation of wall elements and possibly less damage to a structure braced with SPF-filled walls.

### Racking Load: Structural Resistance to Wind

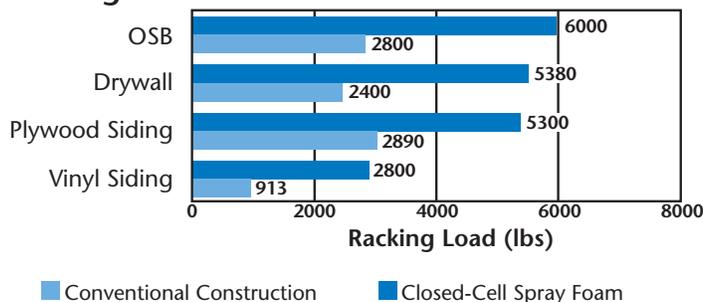


Figure 1

\*\*STYROFOAM™ Brand SPF Insulation provides structural enhancement only. Use in conjunction with approved structural components and framing members consistent with local building code requirements.

†National Association of Home Builders, Testing and Adoption of Spray Polyurethane Insulation for Wood Frame Building Construction, May 25, 1992



STYROFOAM™ Brand SPF Insulation meets IBC/IRC requirements for foam plastic insulation and is UL Classified Class I at 4 inches (UL 723). Also see ASTM C1029 and ASTM E84.

## Sealing the Envelope

Incorporating STYROFOAM™ Brand SPF Insulation into your construction process is easy. The spray-applied liquid expands on contact and cures to a rigid foam, sealing and insulating all of the hard-to-reach places fiberglass cannot.

STYROFOAM™ Brand SPF Insulation can be installed in new construction after the rough plumbing, electrical wiring, and heating and air conditioning ductwork are installed. In retrofit situations, the foam is sprayed between rafters and floor joists

to increase airtightness in the attic and/or crawl space.<sup>††</sup> When residing, a layer of STYROFOAM™ Brand SPF Insulation can be sprayed in wall cavities and over wood studs before new sheathing and siding are installed, improving comfort and energy efficiency and adding to a home's resale value.<sup>§</sup>

**Dow recommends that trained SPF applicators install STYROFOAM™ Brand SPF Insulation. Contact your Dow representative for a list of qualified insulation contractors in your area.**

<sup>††</sup>A fire-retardant coating, plywood or thermal barrier is recommended for these applications. Contact Dow at 1-866-583-BLUE (2583) for more information.  
<sup>§</sup>Energy-efficient upgrades can increase home value by approximately \$20 for every \$1 reduction in annual utility bills. (The Appraisal Journal)

Spray foam insulation is an energy-efficient upgrade that offers tremendous upsell potential for the homes you build. When you insulate with STYROFOAM™ Brand SPF Insulation, your customers will appreciate the premium performance and may qualify for an energy-efficient mortgage.

***Are you ready to push the thermal envelope?  
 Contact your Dow representative to learn more about STYROFOAM™ Brand SPF Insulation.  
 www.sprayfoamatdow.com • 1-866-583-BLUE (2583)***

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COMBUSTIBLE: Protect from high heat sources. Local building codes may require a protective or thermal barrier. For more information, consult MSDS, call Dow at 1-866-583-BLUE (2583) or contact your local building inspector. In an emergency, call 1-989-636-4400.

STYROFOAM™ Brand SPF Insulation contains isocyanate, hydrofluorocarbon blowing agent and polyol. Read the instructions and Material Safety Data Sheet carefully before use. Wear protective clothing, gloves, goggles or safety glasses, and proper respiratory protection. Supplied air or an approved air-purifying respirator equipped with an organic vapor sorbent and a particle filter is required to maintain exposure levels below ACGIH, OSHA, WEEL or other applicable limits. Provide adequate ventilation. Contents under pressure. STYROFOAM™ SPF should be installed by a trained SPF applicator.

Building and/or construction practices unrelated to building materials could greatly affect moisture and the potential for mold formation. No material supplier including Dow can give assurance that mold will not develop in any specific system.

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