Catalog Index

Why You Should Insulate Foundations

Products

- Styrofoam Brand SM Extruded Polystyrene Foam Insulation
- Styrofoam Brand Ultra SL Polystyrene Foam Insulation
- Styrofoam Brand Square Edge Insulation
- Styrofoam Brand Tongue and Groove Insulation
- Styrofoam Brand Scoreboard Extruded Polystyrene Foam Insulation
- Styrofoam Brand Ag Board Insulation
- Styrofoam Highload 40, 60 and 100 Extruded Polystyrene Insulation
Why You Should Insulate Foundations.

There is a science to adding value.
Within Every Great Home Is Great Science.

No matter how well you build your home, it isn’t complete until you add a layer of rigid foam insulation from Dow. STYROFOAM™ extruded polystyrene and polyisocyanurate insulations from Dow provide the scientific footing to help solve the energy and moisture issues that can compromise building performance.

Whether you build your homes with basements, crawl spaces or slab-on-grade, rigid foam insulation from Dow can help any type of foundation perform better. Depend on the insulation science expertise of Dow to help you build more value into your homes.

Built On Science.

STYROFOAM™ extruded polystyrene and polyisocyanurate insulations from Dow are the only rigid insulation products built on the scientific expertise of The Dow Chemical Company, a leading global supplier of chemical, plastic and agricultural products and services.

More than 50 years ago, Dow pioneered STYROFOAM extruded polystyrene insulation, which revolutionized insulation science. Our commitment to innovation continues. Drawing on the vast research, development and technological resources of Dow and an open exchange of information with building professionals, STYROFOAM building materials offer proven thermal envelope solutions for every application.
INSIDE INSULATION

To insulate is to reduce the transfer of heat. Insulations are formed by trapping air in a material. But not all insulating materials are created equal. The more compartments of air across a given span of material, the greater the thermal resistance, or R-value**.

Rigid foam insulations from Dow contain about a million tiny pockets of trapped air in every cubic inch of material. Proprietary formulations and manufacturing processes ensure that these cells are closed, which enables the insulation to resist moisture and maintain R-value.

An insulation’s performance is greatly reduced when the trapped air is able to circulate or move freely within the insulation material. This happens primarily through convective air movement. Insulation performance is also reduced when the trapped air is displaced, which can happen through compression or moisture uptake.

Rigid foam insulation from Dow has a closed-cell structure. Air can’t infiltrate or circulate within the boards, and they resist moisture. So the trapped air stays trapped … and the insulating value remains high.

Below Grade. Top Of Mind.

All buildings have one thing in common: Their foundations must come in contact with the earth. So wherever you build your home, moderating the effects of soil, water, temperature and air on the foundation can impact the performance and integrity of the total structure.

For new construction and retrofit foundation applications, STYROFOAM extruded polystyrene and polyisocyanurate insulations from Dow can help:
- reduce energy loss
- keep foundations drier
- improve occupant comfort

Continuous insulation from footing to sill plate can reduce the average home heating and cooling bill by hundreds of dollars per year.

**R means resistance to heat flow. The higher the R-value, the greater the insulating power.
Concrete is a highly heat-conductive material. In an uninsulated or poorly insulated basement, heat escapes through two paths: horizontally through the wall into the earth, and vertically through the concrete wall and into the air above the grade line.

Insulating the outside or inside of the foundation wall slows both vertical and horizontal heat flow through the wall, helping to mitigate conditions that cause energy loss.

Basement walls can be the major source of conductive heat loss in the whole house. In fact, heat loss from an uninsulated, conditioned basement can account for up to 50 percent of total heat loss in an otherwise tightly sealed, well-insulated home.

The gap between the foundation wall and the sill plate of a building can enable significant air infiltration and energy loss. Sealing the gap with STYROFOAM Sill Seal foam gasket reduces air infiltration and moisture wicking from the concrete foundation into the wood sill plate.

Heat flows two ways through an uninsulated concrete wall: horizontally into the earth and vertically to the air above the grade line.

Insulating with rigid foam (exterior insulation shown here) slows both vertical and horizontal heat flow through the wall.

†Report, Kansas State University and the U.S. Department of Energy
Manage Moisture.

Foundation walls exist in a typically wet environment. Soil around the foundation is often wet, due to rain, melting snow or the water table.

The porous materials used to build most foundation walls – concrete and cement block – absorb water from the soil and allow it to move through the wall. Much of this movement is due to capillary suction: Water moves from an area of high concentration to low concentration, often against gravity. Water can also pass directly through cracks in the basement wall.

**Exterior Insulated Basement**

When building a new home, adding a continuous layer of STYROFOAM extruded polystyrene insulation to the exterior of basement walls is one of the most important steps you can take to protect your home from the damaging effects of moisture.

The closed-cell rigid foam does this in three ways:

1. It protects the waterproofing or the damp-proofing membrane (see sidebar)
2. It keeps the wall warm, which reduces the potential for condensation on the inside surface of the wall
3. A specialized drainage insulation product (STYROFOAM PERIMATE* insulation) features a patented groove design that assists with the drainage of water down and away from the basement wall, which reduces hydro-static pressure against the wall (see next page)

*STYROFOAM extruded polystyrene insulation is inherently moisture-resistant, helping defend against moisture penetration.*

**Enhance Damp-Proofing and Waterproofing**

Both damp-proofing and waterproofing involve applying an impermeable material to foundation walls to help reduce moisture intrusion. This moisture intrusion is most often caused by bulk water movement through cracks, or capillary suction through pores in the concrete wall.

Damp-proofing reduces moisture intrusion due to capillary suction. The typical 10-mil thickness of damp-proofing will not bridge the foundation settling cracks that allow bulk water to enter the structure. Damp-proofing is also easily damaged by backfill, making it susceptible to water driven by hydrostatic pressure.

In comparison, waterproofing consists of a spray-applied flexible membrane bonded to the foundation. Not only does the waterproofing membrane reduce moisture intrusion by capillary action, it also has the ability to bridge small cracks, reducing water penetration through bulk water movement.

Exterior foam insulation and drainage are an important part of damp-proofing and waterproofing systems. Exterior foam insulation protects waterproofing or the damp-proofing membrane from damage caused by backfill. It also keeps the basement wall warmer, which reduces the potential for condensation on the basement wall.

STYROFOAM extruded polystyrene insulation resists water absorption and compression under soil loads, so it retains its insulation value in wet environments. STYROFOAM PERIMATE insulation has patented drainage grooves in the long direction of the board. In addition to protecting the waterproofing membrane and providing insulation, the grooves in the product assist drainage of water away from the foundation.

The most common problem home inspectors find in homes less than 12 years old is basement leaks. SOURCE: USA TODAY
Stand Up Under Pressure.

Hydrostatic Pressure

A typical basement can be compared to a boat surrounded by water, because water in the ground behaves in a manner similar to other bodies of water. Groundwater exerts hydrostatic pressure on submerged objects (like the basement wall), and that pressure must be managed.

Hydrostatic pressure increases at greater depths. So the pressure exerted on the bottom of a foundation wall – at the footer – is much greater than at the ground level. Without proper drainage, water can pool at the lowest point on the wall. Pressure builds up, and the water seeks the path of least resistance – right through cracks in the foundation wall.

Waterproofing can resist hydrostatic pressure, but a more effective way to manage the pressure is to drain the water away from the foundation.

STYROFOAM PERIMATE insulation is an important part of a drainage system to help relieve hydrostatic pressure on foundation walls. The insulation boards have high compressive strength, resisting increased pressures near the bottom of the wall. And the patented drainage grooves help direct water movement toward the drainage tile, reducing hydrostatic pressure and pooling of water near the foundation base.
**Soil Loads**

Below grade, soil exerts a pressure both downward and horizontally (laterally). The deeper the soil, the greater the pressure. At eight feet below grade, this lateral soil pressure against the basement wall can be as much as 1,000 lbs/ft². So to resist compression and loss of R-value, foundation insulation must be able to withstand this pressure.

STYROFOAM extruded polystyrene insulation products have the necessary compressive strength to fully resist soil pressures over the life of the building. Long-term performance of STYROFOAM extruded polystyrene insulation below grade helps to save energy and reduce moisture problems in basements.

Table 1 illustrates the importance of compressive strength as it relates to an insulation’s drainage ability. Compared to a typical fiberglass drainage product, STYROFOAM PERIMATE insulation is far better at maintaining high water drainage rates under increasing soil pressures.

**Table 1**

<table>
<thead>
<tr>
<th>Soil Pressure, lb/ft²</th>
<th>1” STYROFOAM PERIMATE gal/hr/linear foot, 1.0 gradient</th>
<th>1-3/16” Fiberglass, gal/hr/linear foot, 1.0 gradient</th>
</tr>
</thead>
<tbody>
<tr>
<td>600</td>
<td>366</td>
<td>63</td>
</tr>
<tr>
<td>800</td>
<td>357</td>
<td>39</td>
</tr>
<tr>
<td>1,000</td>
<td>363</td>
<td>12</td>
</tr>
</tbody>
</table>

(1) Figures based on average soil pressures at average basement depths
(2) Third-party testing by STS Consultants using ASTM D4716

The high compressive strength of STYROFOAM extruded polystyrene insulation resists lateral earth pressure, protecting the integrity of the foundation wall and maintaining long-term thermal performance.
Crawl Spaces

Crawl spaces are prone to moisture problems and heat loss due to their proximity to the soil. The practice of adding vents to crawl space walls is meant to address these moisture problems and help dry out the crawl space area. However, the vents actually allow moisture to enter the crawl space, and they do little to help it dry out.

Moisture that enters through the crawl space vents clings to floor joists, batt insulation, heating/cooling equipment and plumbing fixtures. In this moist environment, mold and mildew can quickly degrade the integrity of the crawl space’s contents, as well as compromise indoor air quality. And moisture isn’t the only thing to worry about. Wood-eating insects, dust mites and other small creatures can crawl in through the vents to take up permanent residence.

A solution to this problem is gaining popularity: the non-vented, conditioned and properly insulated crawl space. This type of foundation construction can be a big contributor to a home’s overall energy efficiency and comfort.

Rigid foam insulation is an important component of a non-vented crawl space – it helps to keep the crawl space dry and energy-efficient. And THERMAX® Sheathing polyisocyanurate insulation from Dow is the only rigid foam insulation product that can be left exposed on crawl space walls, as stated in the ICC code report NER-681.

Poorly constructed crawl spaces are a major source of moisture problems and a big contributor to poor indoor air quality in many of today’s homes.
Slab-On-Grade

Digging a conventional deep foundation is not always feasible or desired. Building codes require that a foundation extend below the local frost line. In cold climates, this can mean digging a foundation more than 60" below grade.

Frost-Protected Shallow Foundation

STYROFOAM extruded polystyrene insulation as part of a frost-protected shallow foundation design†† allows the construction of a much shallower foundation, which saves on building costs. The insulation regulates heat loss and changes the depth of frost penetration into the soil, resisting frost penetration into the building foundation.

Radiant Floors

In a slab-on-grade radiant floor heating design, radiant heat tubes are installed in the slab and concrete becomes the conductive medium, dispersing hot water heat across the surface of the floor. But without adequate insulation, this heat can be lost as it flows horizontally to the edges of the slab and the outside of the building, or downward to the soil beneath the slab.

Rigid foam insulation at floor edges and under the slab helps maintain a comfortable floor temperature, and keeps heat in the house to save energy.

When soil under the foundation freezes, it expands with great force and can cause foundations to shift and crack.

As part of a frost-protected shallow foundation, STYROFOAM extruded polystyrene insulation regulates heat loss and changes the depth of frost penetration into the soil. This allows a much shallower footing to be used in the foundation.

Rigid foam insulation at floor edges and under the slab helps radiant floor heat stay in the building, enhancing comfort and saving energy.

††As found in section R403.3 of the International Residential Code.

In states with heavy termite infestation (Florida, South Carolina, Georgia, Alabama, Mississippi, Louisiana, Eastern Texas, California and Hawaii), rigid foam in new construction is not allowed in contact with the soil on the exterior foundations of homes or light construction where wood is found in the structural components of construction. Your Dow representative can provide recommendations for alternative insulation methods for these areas.
Installing rigid foam insulation on interior basement walls is a fast and easy way to extend the living space of your home. But when insulating a basement, it’s important to do it right. Rigid foam insulations from Dow can be installed right over masonry walls with no need for studs or a vapor barrier, providing a solid wall of moisture-resistant insulating comfort, without cavities or thermal bridges.

Specially designed and formulated insulation products from Dow are available to help meet specific application needs. For example, STYROFOAM WALLMATE* extruded polystyrene insulation with slotted vertical edges is installed with furring strips and covered with gypsum board for a finished appearance. For areas such as a laundry room or storage space, THERMAX Sheathing, with its reflective foil facers, can be left exposed without a thermal barrier, for a semi-finished appearance.

STYROFOAM WALLMATE insulation is designed for easy installation. The required drywall finish is easily attached to the furring strips slotted into the insulation.
Insulated Concrete Wall Systems

Today, precast, poured-in-place, tilt-up and other types of insulated concrete wall systems are being used to construct energy-efficient foundation walls and entire homes.

Insulated concrete walls eliminate many of the challenges of frame wall assemblies. Sandwiching rigid foam insulation between layers of concrete puts the insulation in the optimum position to help maximize the thermal mass of the concrete. And, insulated concrete wall assemblies minimize construction time, maximize a home’s interior usable space and offer a variety of attractive, fast and easy finish options.

Rigid foam insulation from Dow can be used in all types of insulated concrete panels or “sandwich walls.” Dow also offers complete systems of rigid foam insulation, patented composite fiber connectors, software and technical service, as well as licensing opportunities.

Continuous foam insulation – from footer to sill plate – is the most effective way to reduce foundation energy loss up to 75 percent. In addition to offering reliable R-values from 5.0 to 6.5 per inch, rigid foam insulations from Dow:

• enhance drainage
• insulate the below-grade wall to reduce condensation
• protect the dampproofing/waterproofing membrane
• resist movement of bulk water and water vapor through foundation walls above and below grade
• provide a more comfortable environment throughout the home

Learn more about building value into your homes with rigid foam insulation. Call your Dow representative today.
Build Green With Dow

Dow supports initiatives that help preserve our environment, and we strive for environmental sensitivity in our manufacturing processes and in our products. Dow produces insulating foams that:
• contain no CFCs
• are formaldehyde-free
• are not a known food source for mold or insects
• contain post-industrial recycled content
• are recyclable (extruded polystyrene)

Ask your Dow representative for more information.

NOTICE: Changes to the International Residential Code require the installation of a weather-resistive barrier (WRB) within most exterior wall assemblies in residential construction. The following Dow insulated sheathing products qualify as a WRB when installed according to the installation instructions developed for “Installation of foam sheathing as a weather-resistive barrier”: STYROFOAM™ DURAMATE™ Plus, STYROFOAM Residential Sheathing, STYROFOAM Tongue and Groove, STYROFOAM Square Edge, STYROFOAM Residing Board, THERMAX™, TUFF-R™ and Super TUFF-R and therefore do not require the use of a building paper or a housewrap as a WRB. When a WRB is not needed, these Dow foam sheathings may be installed according to standard installation instructions for foam sheathing from Dow. Be sure products and installation instructions meet code requirements for your particular location. Note: STYROFOAM WEATHERMATE™ and WEATHERMATE Plus housewraps have already qualified as weather-resistive alternatives to the prescribed felt (see Evaluation Reports NER 593 and NER 640 for approved alternative).

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STYROFOAM™ Extruded Polystyrene and Dow Polyisocyanurate Insulation Other Than THERMAX™ Products
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.

THERMAX™ Products
COMBUSTIBLE: THERMAX products should be used only in strict accordance with product application instructions. THERMAX products, when used in a building containing combustible materials, may contribute to the spread of fire. For more information, consult MSDS and/or call Dow at 1-866-583-BLUE (2583). In an emergency, call 1-989-636-4400.

WARNING: THERMAX insulation does not constitute a working walkable surface or qualify as a fall protection product.

Building and/or construction practices unrelated to insulation or housewrap 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.
**Styrofoam™ Brand SM Extruded Polystyrene Foam Insulation**

Versatile, Weather-Resistant Insulation for Below-Grade Applications

### FEATURES/BENEFITS

**Description**

Styrofoam™ Brand SM Extruded Polystyrene Foam Insulation is a versatile, multipurpose extruded polystyrene board that fits the needs of the commercial and residential foundation and slab market.

Styrofoam™ Brand SM Insulation’s closed-cell structure resists water absorption, enabling it to retain a high R-value (RSI)** over time – a necessary property in below-grade residential foundation applications. It helps to protect foundation damp-proofing and waterproofing, especially during backfilling. It also provides a secondary barrier against groundwater leakage.

With Styrofoam™ Brand SM Insulation, the freeze-thaw cycling of the foundation wall is minimized, reducing the possibility of cracking. And a warmer foundation wall reduces the potential for condensation and adds to the thermal mass of the building.

**Ease of Use**

Styrofoam™ Brand SM Insulation is:

- Usable against almost any commercial or residential foundation wall in above- and below-grade applications.
- Lightweight – easy to handle, cut and install
- Resistant to moisture infiltration, condensation and freeze-thaw cycles
- An excellent thermal barrier – helps reduce heat loss or gain
- Available with ranges of compressive strength and long-term durability
- Available in ranges of thicknesses, surface and edge treatments
- Reusable in many applications

**Available Sizes**

Available sizes, R-Values and edge treatments for Styrofoam™ Brand SM Extruded Polystyrene Foam Insulation can be found in Table 1. Additional sizes may be stocked on a regional basis. Contact your local DuPont seller for additional information.

### TABLE 1: Sizes, R-values and Edge Treatments for Styrofoam™ Brand SM Extruded Polystyrene Foam Insulation

<table>
<thead>
<tr>
<th>Standard Size (Imperial)</th>
<th>Board Thickness(1), Inches (mm)</th>
<th>R-Value</th>
<th>Board Size (Inches)</th>
<th>Edge Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0</td>
<td>5.0</td>
<td>24 x 96</td>
<td>Butt Edge &amp; Shiplap</td>
<td></td>
</tr>
<tr>
<td>1.5</td>
<td>7.5</td>
<td>24 x 96</td>
<td>Butt Edge &amp; Shiplap</td>
<td></td>
</tr>
<tr>
<td>2.0**</td>
<td>10.0</td>
<td>24 x 96</td>
<td>Butt Edge &amp; Shiplap</td>
<td></td>
</tr>
<tr>
<td>2.5</td>
<td>12.5</td>
<td>24 x 96</td>
<td>Shiplap</td>
<td></td>
</tr>
<tr>
<td>3.0</td>
<td>15.0</td>
<td>24 x 96</td>
<td>Butt Edge &amp; Shiplap</td>
<td></td>
</tr>
<tr>
<td>4.0</td>
<td>20.0</td>
<td>24 x 96</td>
<td>Butt Edge &amp; Shiplap</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Standard Size (Metric)</th>
<th>Board Thickness(1), Millimeters</th>
<th>RSI</th>
<th>Board Size (mm)</th>
<th>Edge Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>173</td>
<td>600 x 2400</td>
<td>Butt Edge &amp; Shiplap</td>
<td></td>
</tr>
<tr>
<td>75</td>
<td>261</td>
<td>600 x 2400</td>
<td>Butt Edge &amp; Shiplap</td>
<td></td>
</tr>
</tbody>
</table>

1 Not all product sizes are available in all regions.

**Also available in 4x8 Shiplap

*D Styrofoam™ Brand SM Extruded Polystyrene Foam Insulation is a former product of The Dow Chemical Company.

** R means resistance to heat flow. The higher the R-value or RSI, the greater the insulating power.
**Sustainable Solutions**

Styrofoam™ Brand SM Insulation is hydrochlorofluorocarbon (HCFC) free with zero ozone-depletion potential and is reusable in many applications. Styrofoam™ Brand Insulation products produced in North America contain an average of 20% pre-consumer recycled content certified by UL Environment Inc.

**PROPERTIES**

Styrofoam™ Brand SM Insulation exhibits physical properties as indicated in Table 2 when tested as represented. Review all instructions and (Material) Safety Data Sheet ((M)SDS) before use. Please contact DuPont at 1-866-583-2583 when additional guidance is required for writing specifications that include this product.

**TABLE 2: Physical Properties of Styrofoam™ Brand SM Extruded Polystyrene Foam Insulation**

<table>
<thead>
<tr>
<th>Property and Test Method</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thermal Resistance per inch (25 mm), ASTM C518 @ 75°F (24°C)</td>
<td>5.0 (0.88)</td>
</tr>
<tr>
<td>mean temp., ft²·h·°F/ft²·°F (m²·°C/W), min. R-value (RSI)</td>
<td></td>
</tr>
<tr>
<td>Compressive Strength, ASTM D1621, psi (kPa), min.</td>
<td>30 (207)</td>
</tr>
<tr>
<td>Water Absorption, ASTM D2842, % by volume, max.</td>
<td>0.7</td>
</tr>
<tr>
<td>Water Absorption, ASTM C272, % by volume, max.</td>
<td>0.3</td>
</tr>
<tr>
<td>Water Vapour Permeance, ASTM E96, perm (ng/Pa·s·m²), max.</td>
<td>15 (90)</td>
</tr>
<tr>
<td>Maximum Use Temperature, °F (°C)</td>
<td>165 (74)</td>
</tr>
<tr>
<td>Coefficient of Linear Thermal Expansion, ASTM D696, in/in·°F (mm/mm·°C)</td>
<td>$3.5 \times 10^{-5}$ ($6.3 \times 10^{-2}$)</td>
</tr>
</tbody>
</table>

1. Vertical compressive strength is measured at 10 percent deformation or at yield, whichever occurs first.
2. Based on 1” (25 mm) thickness.
TESTING

Applicable Standards
ASTM International:

- CAN/ULC S701 Type 4
- CCMC 04888-L

Use Conditions
- It is recommended that any masonry irregularities or jagged surfaces on the foundation wall or slab be removed prior to installation.
- Below-grade walls should be protected from moisture leakage and dampness prior to installation of Styrofoam™ Brand SM Insulation
- Use a polystyrene compatible adhesive to hold boards in place during backfilling. Apply caulk or mastic to the top of boards to prevent water infiltration behind the insulation. To complete the installation, parge the above-grade portions of Styrofoam™ Brand SM Insulation

HANDLING

WARNING: For Professional Use Only – Read and follow the entire Handling section and the Safety Data Sheets (SDSs, formerly MSDSs or Material Safety Data Sheets) carefully before use. The information below is designed to protect the user and allow for safe use and handling of Styrofoam™ Brand products.

Precautionary Statements
- Styrofoam™ Brand SM Insulation is combustible; protect from high heat sources.
- A protective barrier or thermal barrier may be required as specified in the appropriate building code. For more information, consult MSDS, call DuPont at 1-866-583-2583 or contact your local building inspector.
- Dispose of any residual DuPont product, coated debris, or solvent in accordance with applicable federal, state, and local government regulations.
- Follow all applicable federal, state, local and employer regulations.

Shelf Life and Storage
When stored outdoors, keep insulation boards tarped or covered to protect from weather and weighted down to prevent boards from being blown around by the wind. Store above standing water.
FEATURES/BENEFITS

Description
Styrofoam™ Brand Ultra SL Extruded Polystyrene Foam Insulation* is a moisture-resistant, durable and lightweight extruded polystyrene foam board with shiplap edges designed specifically to be used as a continuous insulation (ci) and installed over block, concrete or metal stud backup behind masonry or stone veneers.

Manufactured with a patented carbon-black technology, Styrofoam™ Brand Ultra SL Insulation features an R-value of 5.6 per inch (RSI of 0.97 per 25 mm)**, the highest of all extruded polystyrene foam insulation products. With its closed-cell structure offering advanced long-term thermal performance and moisture control, Styrofoam™ Brand Ultra SL Insulation with shiplap edges maximizes the performance of the entire wall assembly.

Styrofoam™ Brand Ultra SL Insulation — when tested with LiquidArmor™ Flashing & Sealant over joints, penetrations and transitions — complies with ASTM E2178 and ASTM E2357 Assembly Air Barrier tests. It is also an approved air barrier assembly by the Air Barrier Association of America (ABAA) and passed the ASTM E331 Water Penetration Test.

Sustainable Solutions
Styrofoam™ Brand Ultra SL Insulation is hydrochlorofluorocarbon-free (HCFC-free) with zero ozone-depletion potential and is reusable in many applications. Styrofoam™ Brand insulation products produced in North America contain an average of 20% pre-consumer recycled content certified by UL Environment Inc.

Complete System
Styrofoam™ Brand Ultra SL Insulation is one component of the 4-in-1, continuous insulation, water, air, and vapor barrier solution known as the Ultra Air Barrier Wall System.

Available Sizes
Styrofoam™ Brand Ultra SL Insulation is available in a range of sizes, R-values and edge treatments, as shown in Table 1.

TABLE 1: U.S. Sizes, R-Values and Edge Treatments for Styrofoam™ Brand Ultra SL Extruded Polystyrene Foam Insulation

<table>
<thead>
<tr>
<th>Nominal Board Thickness (in.)</th>
<th>R-Value</th>
<th>Board Size (ft.)</th>
<th>Edge Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.75</td>
<td>10.0</td>
<td>4' x 8'</td>
<td>8' Shiplap</td>
</tr>
<tr>
<td>2.125</td>
<td>12.0</td>
<td>4' x 8'</td>
<td>8' Shiplap</td>
</tr>
<tr>
<td>2.5</td>
<td>14.0</td>
<td>4' x 8'</td>
<td>8' Shiplap</td>
</tr>
<tr>
<td>3.0</td>
<td>16.8</td>
<td>4' x 8'</td>
<td>8' Shiplap</td>
</tr>
</tbody>
</table>

1 Not all product sizes are available in all regions.
2 R means resistance to heat flow. The higher the R-value, the greater the insulating power. R-values are expressed in ft² x h x°F/Btu. R-value determined by ASTM C518.
3 4' x 10', 4' x 12' lengths available through special order.

* Styrofoam™ Brand Ultra SL is a former product of The Dow Chemical Company
** Aged R-value (RSI) at 75°F (24°C) mean temp. R means resistance to heat flow. The higher the R-value or RSI, the greater the insulating power. Refer to Table 2 for thermal resistance at other mean temperatures.
Styrofoam™ Brand Ultra SL
Extruded Polystyrene Foam Insulation

Continuous, Moisture-Resistant Insulation with Shiplap Edges

FEATURES/BENEFITS

Description
Styrofoam™ Brand Ultra SL Extruded Polystyrene Foam Insulation* is a moisture-resistant, durable and lightweight extruded polystyrene foam board with shiplap edges designed specifically to be used as a continuous insulation (ci) and installed over block, concrete or metal stud backup behind masonry or stone veneers.

Manufactured with a patented carbon-black technology, Styrofoam™ Brand Ultra SL Insulation features an R-value of 5.6 per inch (RSI of 0.97 per 25 mm)**, the highest of all extruded polystyrene foam insulation products. With its closed-cell structure offering advanced long-term thermal performance and moisture control, Styrofoam™ Brand Ultra SL Insulation with shiplap edges maximizes the performance of the entire wall assembly.

Styrofoam™ Brand Ultra SL Insulation — when tested with LiquidArmor™ Flashing & Sealant over joints, penetrations and transitions — complies with ASTM E2178 and ASTM E2357 Assembly Air Barrier tests. It is also an approved air barrier assembly by the Air Barrier Association of America (ABAA) and passed the ASTM E331 Water Penetration Test.

Sustainable Solutions
Styrofoam™ Brand Ultra SL Insulation is hydrochlorofluorocarbon-free (HCFC-free) with zero ozone-depletion potential and is reusable in many applications. Styrofoam™ Brand insulation products produced in North America contain an average of 20% pre-consumer recycled content certified by UL Environment Inc.

Complete System
Styrofoam™ Brand Ultra SL Insulation is one component of the 4-in-1, continuous insulation, water, air, and vapor barrier solution known as the Ultra Air Barrier Wall System.

Available Sizes
Styrofoam™ Brand Ultra SL Insulation is available in a range of sizes, R-values and edge treatments, as shown in Table 1.

TABLE 1: U.S. Sizes, R-Values and Edge Treatments for Styrofoam™ Brand Ultra SL Extruded Polystyrene Foam Insulation

<table>
<thead>
<tr>
<th>Nominal Board Thickness1 (in.)</th>
<th>R-Value2</th>
<th>Board Size3 (ft.)</th>
<th>Edge Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.75</td>
<td>10.0</td>
<td>4' x 8'</td>
<td>8' Shiplap</td>
</tr>
<tr>
<td>2.125</td>
<td>12.0</td>
<td>4' x 8'</td>
<td>8' Shiplap</td>
</tr>
<tr>
<td>2.5</td>
<td>14.0</td>
<td>4' x 8'</td>
<td>8' Shiplap</td>
</tr>
<tr>
<td>3.0</td>
<td>16.8</td>
<td>4' x 8'</td>
<td>8' Shiplap</td>
</tr>
</tbody>
</table>

1 Not all product sizes are available in all regions.
2 R means resistance to heat flow. The higher the R-value, the greater the insulating power. R-values are expressed in ft² x h x°F/Btu. R-value determined by ASTM C518.
3 4' x 10', 4' x 12' lengths available through special order.

* Styrofoam™ Brand Ultra SL is a former product of The Dow Chemical Company
** Aged R-value (RSI) at 70°F (24°C) mean temp. R means resistance to heat flow. The higher the R-value or RSI, the greater the insulating power. Refer to Table 2 for thermal resistance at other mean temperatures.

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PROPERTIES

Styrofoam™ Brand Ultra SL Insulation exhibits physical properties as indicated in Table 1 when tested as represented. Review all instructions and (Material) Safety Data Sheet ((M)SDS) before use. Please contact DuPont at 1-866-583-2583 when additional guidance is required for writing specifications that include this product.

### TABLE 2: Physical Properties (U.S.) of Styrofoam™ Brand Ultra SL Extruded Polystyrene Foam Insulation

<table>
<thead>
<tr>
<th>Test Method</th>
<th>Property</th>
<th>Typical Value</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASTM C518</td>
<td>Thermal Resistance per in.</td>
<td>10.0</td>
<td>ft² x h x °F/Btu, R-value, 1 min.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>12.0</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>14.0</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>16.8</td>
<td></td>
</tr>
<tr>
<td>ASTM C1621</td>
<td>Compressive Strength²</td>
<td>25</td>
<td>psi, min.</td>
</tr>
<tr>
<td>ASTM C272</td>
<td>Water Absorption</td>
<td>0.3</td>
<td>% by volume, max.</td>
</tr>
<tr>
<td>ASTM E96</td>
<td>Water Vapor Permeance</td>
<td>11</td>
<td>perm, max.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.8</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.65</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.50</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Maximum Use Temperature</td>
<td>165</td>
<td>°F</td>
</tr>
<tr>
<td>ASTM D696</td>
<td>Coefficient of Linear Thermal Expansion</td>
<td>1.5 x 10⁻⁵</td>
<td>in/in x °F</td>
</tr>
<tr>
<td>ASTM C20¹</td>
<td>Flexural Strength</td>
<td>50</td>
<td>psi, min.</td>
</tr>
<tr>
<td>ASTM E84²</td>
<td>Flame Spread³</td>
<td>0</td>
<td>–</td>
</tr>
<tr>
<td>ASTM E843²</td>
<td>Smoke Developed</td>
<td>155</td>
<td>–</td>
</tr>
</tbody>
</table>

¹ Values are consistent with the criteria of ASTM C578 and the FTC R-value rule (16 CFR Part 460).
² Vertical compressive strength is measured at 10 percent deformation or yield, whichever occurs first. Since Styrofoam™ Brand Extruded Polystyrene Foam Insulations are visco-elastic materials, adequate design safety factors should be used to prevent long-term creep and fatigue deformation. For static loads, 3:1 is suggested. For dynamic loads, 5:1 is suggested. Contact DuPont for design recommendations.
³ These numerical flame-spread and smoke-developed ratings are not intended to reflect hazards presented by this or any other material under actual fire conditions.

TESTING

**Applicable Standards**

Styrofoam™ Brand Ultra SL Insulation meets ASTM C578 Type IV Standard Specification for Rigid Cellular Polystyrene Insulation. Applicable standards include:

- **D1621** – Standard Test Method for Compressive Properties of Rigid Cellular Plastics
- **E96** – Standard Test Methods for Water Vapor Transmission of Materials
- **D696** – Standard Test Method for Coefficient of Linear Thermal Expansion of Plastics Between -30°C and 30°C With a Vitreous Silica Dilatometer
- **C203** – Standard Test Methods for Breaking Load and Flexural Properties of Block-Type Thermal Insulation
- **D2126** – Standard Test Method for Response of Rigid Cellular Plastics to Thermal and Humid Aging
- **D2842** – Standard Test Method for Water Absorption of Rigid Cellular Plastics

When tested with LiquidArmor™ Flashing & Sealant or GREAT STUFF PRO™ Insulating Foam Sealant around joint treatments, penetrations and transitions, Styrofoam™ Brand Ultra SL Insulation meets the following standards:

- **ASTM E2357** Air Barrier Assembly Test
- **ASTM E2178** Air Barrier Assembly Test
- **ASTM E331** Water Penetration Test for Block and Steel Stud – Passed
- **Approved as an air barrier assembly by the Air Barrier Association of America (ABAA)**
- **Meets NFPA requirements¹**

**Notice**

Styrofoam™ Brand Ultra SL Insulation complies with the following codes:

- Meets IBC/IRC requirements for foam plastic insulation; see ICC-ES ESR 2142
- BOCA-ES RR 21-02
- Underwriters Laboratories, Inc. (UL) Classified, see Classification Certificate D369

Contact your DuPont sales representative or local authorities for state/provincial and local building code requirements and related acceptances.

**Warranty**

In the United States, a 50-year thermal limited warranty is available on Styrofoam™ Insulation products 1.5 inches and greater. For thickness less than 1.5 inches, other warranties may apply. Visit building.dupont.com/warranties or contact your DuPont representative for details.

* Consult label and Material Safety Data Sheet carefully before use.
** Meets NFPA 285 per Section 2603.5.5 of the building code. For specific assemblies, see code report ESR 2142.
Styrofoam™ Brand Square Edge Insulation

Water-Resistant Insulation for Attics, Foundations and Crawl Spaces

FEATURES/BENEFITS

**Description**
Styrofoam™ Brand Square Edge Insulation* is an extruded polystyrene foam (XPS) insulation board that meets the needs of the commercial foundation and building floor slab market and can also be used for attics, foundations/slabs and crawl spaces in residential applications.

With more than 60 years of proven performance in wet environments, the closed-cell structure of Styrofoam™ Brand Square Edge Extruded Polystyrene Foam Insulation resists water pickup, enabling it to retain a high R-value** over time – a necessary property in wet, below-grade commercial foundation applications.

Styrofoam™ Brand Square Edge Insulation is classified as a Type IV product when tested in accordance with ASTM C578 and provides a long term insulating performance of R-5 per inch.

**Sustainable Solutions**
- Styrofoam™ Brand Square Edge Insulation is reusable in many applications.
- Styrofoam™ Brand Square Edge Insulation is hydrochlorofluorocarbon (HCFC) free with zero ozone depletion potential.
- Styrofoam™ Brand insulation products produced in North America contain an average of 20% pre-consumer recycled content certified by UL Environment Inc.

**Available Sizes**
- Width and length: 2’ x 8’ and 4’ x 8’
- Thickness: .75”, 1”, 1.5”, 2”, 2.5”, 3”, 4”

See Table 1 for product and packaging data. Available lengths and edge configurations vary by thickness. Not all product sizes are available in all parts of the country. Contact your local DuPont representative for details.

**Ease of Use**
Styrofoam™ Brand Square Edge Insulation boards:
- are easy to handle, cut using a utility knife or serrated blade, and install
- provide a weather resistant barrier to enhance the building’s resistance to air and moisture penetration
- can be used in a number of applications like sheathing, foundation walls, masonry cavity walls, attics, crawl spaces, and more
- come in a wide selection of sizes and thicknesses
- have a minimum compressive strength of 25 psi and a flexural strength of 50 psi
- are designed to ensure energy efficiency and minimize on-site cutting and waste
- are resistant to degradation from soil components and will retain insulating performance characteristics after prolonged exposure to moisture
- provide a secondary barrier against groundwater leakage
- help protect foundation dampproofing and waterproofing, especially during backfilling
- minimize the freeze-thaw cycling of the foundation, reducing the potential for cracking
- warm the foundation, reducing the potential for condensation
- will not corrode, rot or support mold growth
- are compliant with international building codes and standards

* Styrofoam™ Brand Square Edge Insulation is a former product of The Dow Chemical Company
Use Conditions
Styrofoam™ Brand Square Edge Extruded Polystyrene Foam (XPS) Insulation can be used against commercial interior walls and exterior foundation walls in above- and below-grade applications. Styrofoam™ Brand Square Edge Insulation can be used under the slab or over the deck or subfloor and is suitable for use in pervious, semi-pervious and practically impervious soils.

Preparation
It is recommended that any masonry irregularities or jagged surfaces on the foundation wall or slab be removed prior to installation. Below-grade walls should be protected from moisture leakage and dampness prior to installation of Styrofoam™ Brand Square Edge Insulation. Code-approved drainage systems should be installed. Ensure foundation drainage meets local codes.

TABLE 1: Product and Packaging Data for Styrofoam™ Brand Square Edge Insulation

<table>
<thead>
<tr>
<th>Thickness (in)</th>
<th>Product Dimensions (in.)</th>
<th>Pallet Dimensions (ft.)</th>
<th>Board Feet per Pallet</th>
<th>Bundles per Unit</th>
<th>Pieces per Bundle</th>
<th>Pieces per Pallet</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1 x 48 x 96</td>
<td>4 x 8 x 8</td>
<td>3072</td>
<td>8</td>
<td>12</td>
<td>96</td>
</tr>
<tr>
<td>1.5</td>
<td>1.5 x 48 x 96</td>
<td>4 x 8 x 8</td>
<td>3072</td>
<td>8</td>
<td>8</td>
<td>64</td>
</tr>
<tr>
<td>2</td>
<td>2 x 48 x 96</td>
<td>4 x 8 x 8</td>
<td>3072</td>
<td>8</td>
<td>6</td>
<td>48</td>
</tr>
<tr>
<td>2.5</td>
<td>2.5 x 48 x 96</td>
<td>4 x 8 x 8</td>
<td>2800</td>
<td>7</td>
<td>5</td>
<td>35</td>
</tr>
<tr>
<td>3</td>
<td>3 x 48 x 96</td>
<td>4 x 8 x 8</td>
<td>3072</td>
<td>8</td>
<td>4</td>
<td>32</td>
</tr>
<tr>
<td>3.5</td>
<td>3.5 x 48 x 96</td>
<td>4 x 8 x 8</td>
<td>2688</td>
<td>8</td>
<td>3</td>
<td>24</td>
</tr>
<tr>
<td>4</td>
<td>4 x 48 x 96</td>
<td>4 x 8 x 8</td>
<td>3072</td>
<td>8</td>
<td>3</td>
<td>24</td>
</tr>
</tbody>
</table>

* R means resistance to heat flow. The higher the R-value, the greater the insulating power. R-value determined by ASTM C518.

PROPERTIES
Styrofoam™ Brand Square Edge Insulation exhibits physical properties as indicated in Table 2 when tested as represented. Review all instructions and (Material) Safety Data Sheet (MSDS) before use. Please contact DuPont at 1-866-583-2583 when additional guidance is required for writing specifications that include this product.

TABLE 2: Physical Properties of Styrofoam™ Brand Square Edge Insulation

<table>
<thead>
<tr>
<th>Test Method</th>
<th>Property</th>
<th>Typical Value</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASTM C518</td>
<td>Thermal Resistance(^1) per inch</td>
<td>5.0</td>
<td>ft²•h•°F/Btu, R-value, min.</td>
</tr>
<tr>
<td></td>
<td>@ 75°F mean temp.</td>
<td>5.4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>@ 40°F mean temp.</td>
<td>5.6</td>
<td></td>
</tr>
<tr>
<td>ASTM D1621</td>
<td>Compressive Strength(^2)</td>
<td>25</td>
<td>psi, min.</td>
</tr>
<tr>
<td>ASTM C272</td>
<td>Water Absorption</td>
<td>0.3</td>
<td>% by volume, max.</td>
</tr>
<tr>
<td>ASTM E96</td>
<td>Water Vapor Permeance(^3)</td>
<td>15</td>
<td>perm, max.</td>
</tr>
<tr>
<td></td>
<td>Maximum Use Temperature</td>
<td>165</td>
<td>°F</td>
</tr>
<tr>
<td>ASTM D696</td>
<td>Coefficient of Linear Thermal Expansion</td>
<td>3.5 x 10(^{13})</td>
<td>in/in•°F</td>
</tr>
<tr>
<td>ASTM C203</td>
<td>Flexural Strength</td>
<td>50</td>
<td>psi, min.</td>
</tr>
</tbody>
</table>

1 R-values are consistent with criteria of ASTM C578 and the requirements of the FTC R-value rule (16 CFR Part 460).
2 Vertical compressive strength is measured at 10 percent deformation or at yield, whichever occurs first.
3 Based on 1” thickness.

INSTALLATION
Use Conditions
Styrofoam™ Brand Square Edge Extruded Polystyrene Foam (XPS) Insulation can be used against commercial interior walls and exterior foundation walls in above- and below-grade applications. Styrofoam™ Brand Square Edge Insulation can be used under the slab or over the deck or subfloor and is suitable for use in pervious, semi-pervious and practically impervious soils.

Preparation
It is recommended that any masonry irregularities or jagged surfaces on the foundation wall or slab be removed prior to installation. Below-grade walls should be protected from moisture leakage and dampness prior to installation of Styrofoam™ Brand Square Edge Insulation. Code-approved drainage systems should be installed. Ensure foundation drainage meets local codes.

Application
- Use a polystyrene-compatible adhesive to hold the boards in place during backfilling.
- Apply caulk or mastic to the top of the board to prevent water infiltration behind the insulation.
- To complete the installation, parge the above-grade portions of Styrofoam™ Brand Square Edge Insulation to protect from solar radiation.
TESTING

Applicable Standards

Styrofoam™ Brand Square Edge Insulation meets ASTM C578, Type IV – Standard Specification for Rigid Cellular Polystyrene Thermal Insulation. Applicable standards include:

- C203 – Standard Test Methods for Breaking Load and Flexural Properties of Block-Type Thermal Insulation
- D2126 – Standard Test Method for Response of Rigid Cellular Plastics to Thermal and Humid Aging
- C272 – Standard Test Method for Water Absorption of Core Materials for Structural Sandwich Construction

Notice

Styrofoam™ Brand Square Edge Insulation complies with the following codes:

- International Residential Code (IRC) and International Building Code (IBC), see ESR-2142
- Underwriters Laboratories, Inc. (UL) Classified, see Classification Certificate D369
- Calif. Std. Reg. # CA T064 Florida Building Code FL 3835
- Factory Mutual Approved – Subject to conditions of approval as a roof insulation when installed as described in the current edition of the FM Approval Guide

Warranty

In the United States, a 50-year thermal limited warranty is available on Styrofoam™ products 1.5 inches and greater. For thickness less than 1.5 inches, other warranties may apply. Warranties are available as described at building.dupont.com/warranties.

HANDLING

WARNING: For Professional Use Only. Read and follow the entire Safety, Handling, and Storage section and the Safety Data Sheets (SDSs, formerly MSDSs or Material Safety Data Sheets) carefully before use. The information below is designed to protect the user and allow for safe use and handling of DuPont products. Follow all applicable federal, state, local and employer regulations.

Precautionary Statements

Styrofoam™ Brand Square Edge Insulation is combustible; protect from high heat sources. A protective barrier or thermal barrier may be required as specified in the local building codes. For more information, consult the SDS, call DuPont at 1-866-583-2583 or contact your local building inspector.
Styrofoam™ Brand Tongue and Groove Insulation

Lightweight, Easy To Install Type IV XPS Foam Insulation

FEATURES/BENEFITS

Description
Styrofoam™ Brand Tongue and Groove Extruded Polystyrene Foam Insulation (XPS)* features tongue and groove edges on all four sides of 2' x 8' boards 1” thick or less and on the long edges of all other boards. The lightweight, moisture-resistant and thermally efficient Type IV extruded polystyrene foam insulation is suited for a wide range of residential and commercial construction applications.

Ease of Installation
Styrofoam™ Brand Tongue and Groove Insulation goes up quickly and easily with grooves on all four edges to lock into the next sheet and gives more coverage per board. It’s easy to install with high compressive strength for above and below grade applications including:

• Exterior walls
• Interior walls
• Ceiling
• Exterior foundation walls
• Interior foundation walls
• Crawl space

Styrofoam™ Brand Tongue and Groove Insulation boards are easy to handle, cut using a utility knife or serrated blade, and install.

Available Sizes
• Width and length: 2’ x 8’ and 4’ x 8’
• Thickness: .75”, 1”, 1.5”, 2”

Not all product sizes are available in all parts of the country. Contact your local DuPont representative for details.

Sustainable Solutions
The Styrofoam™ Brand Tongue and Groove Insulation boards are designed to ensure energy efficiency and minimize on-site cutting and waste. Styrofoam™ Brand Tongue and Groove Insulation is hydrochlorofluorocarbon (HCFC) free with zero ozone depleting potential. Styrofoam™ Brand Tongue and Groove Insulation is reusable in many applications. Styrofoam™ Brand Insulation products produced in North America contain an average of 20% pre-consumer recycled content certified by UL Environment Inc.

PROPERTIES

Review all instructions and (Material) Safety Data Sheet ((M)SDS) before use.

TABLE 1: Physical Properties of Styrofoam™ Brand Tongue and Groove Insulation

<table>
<thead>
<tr>
<th>Test Method</th>
<th>Property</th>
<th>Typical Value</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASTM C518</td>
<td>Thermal Resistance1 per inch</td>
<td>5.0</td>
<td>ft²•h•°F/Btu, R-value**, min.</td>
</tr>
<tr>
<td></td>
<td>@ 75°F mean temp</td>
<td>5.4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>@ 40°F mean temp</td>
<td>5.6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>@ 25°F mean temp</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ASTM D1621</td>
<td>Compressive Strength2</td>
<td>25</td>
<td>psi, min</td>
</tr>
<tr>
<td>ASTM C272</td>
<td>Water Absorption</td>
<td>0.3</td>
<td>% by volume, max</td>
</tr>
<tr>
<td>ASTM E96</td>
<td>Water Vapor Permeance3</td>
<td>1.5</td>
<td>perm, max</td>
</tr>
<tr>
<td></td>
<td>Maximum Use Temperature</td>
<td>165</td>
<td>°F</td>
</tr>
<tr>
<td>ASTM D696</td>
<td>Coefficient of Linear Thermal Expansion</td>
<td>$3.5 \times 10^{-1}$</td>
<td>in/in•°F</td>
</tr>
<tr>
<td>ASTM C203</td>
<td>Flexural Strength</td>
<td>50</td>
<td>psi, min</td>
</tr>
</tbody>
</table>

* Styrofoam™ Brand Tongue and Groove Insulation is a former product of The Dow Chemical Company
** R means resistance to heat flow. The higher the R-value, the greater the insulating power. R-value determined by ASTM C518.
† R-values are consistent with criteria of ASTM C578 and the requirements of the FTC R-value rule (16 CFR Part 460)
1 Vertical compressive strength is measured at 10 percent deformation or at yield, whichever occurs first.
2 Based on 1” thickness.
### INSTALLATION

**Use Conditions**

Styrofoam™ Brand Tongue and Groove Insulation is suitable for use in pervious, semi-pervious and practically impervious soils.

**Preparation**

It is recommended that any masonry irregularities or jagged surfaces on the foundation wall or slab be removed prior to installation. Below-grade walls should be protected from moisture leakage and dampness prior to installation of Styrofoam™ Brand Tongue and Groove Insulation. Code-approved drainage systems should be installed. Ensure foundation drainage meets local codes.

**Application**

Use a polystyrene-compatible adhesive to hold the boards in place during backfilling. Apply caulk or mastic to the top of the board to prevent water infiltration behind the insulation. To complete the installation, parget the above-grade portions of Styrofoam™ Brand Tongue and Groove Insulation to protect from solar radiation.

### TESTING

#### Applicable Standards

Styrofoam™ Brand Tongue and Groove Insulation meets ASTM C578, Type IV – Standard Specification for Rigid Cellular Polystyrene Thermal Insulation. Applicable standards include:

- **D1621** – Standard Test Method for Compressive Properties of Rigid Cellular Plastics
- **E96** – Standard Test Methods for Water Vapor Transmission of Materials
- **D696** – Standard Test Method for Coefficient of Linear Thermal Expansion of Plastics Between -30°C and 30°C with a Vitreous Silica Dilatometer
- **C203** – Standard Test Methods for Breaking Load and Flexural Properties of Block-Type Thermal Insulation
- **D2126** – Standard Test Method for Response of Rigid Cellular Plastics to Thermal and Humid Aging
- **C272** – Standard Test Method for Water Absorption of Core Materials for Structural Sandwich Constructions

#### Notice

Styrofoam™ Brand Tongue and Groove Insulation complies with the following codes:

- International Residential Code (IRC) and International Building Code (IBC) See ESR-2142
- Underwriters Laboratories, Inc. (UL) Classified, see Classification Certificate D369
- Calif. Std. Reg. # CA T064 Florida Building Code FL 3835
- Factory Mutual Approved – Subject to conditions of approval as a roof insulation when installed as described in the current edition of the FM Approval Guide

Contact your local Dow sales representative or local authorities for state and local building code requirements and related acceptances.

**Warranty**

In the United States, a 50-year thermal limited warranty is available on Styrofoam™ products 1.5 inches and greater. For thickness less than 1.5 inches, other warranties may apply. Warranties are available as described at building.dupont.com/warranties.

### HANDLING

**WARNING: For Professional Use Only.** Read and follow the entire Safety, Handling, and Storage section and the Safety Data Sheets (SDSs, formerly MSDSs or Material Safety Data Sheets) carefully before use. The information below is designed to protect the user and allow for safe use and handling of DuPont products. Follow all applicable federal, state, local and employer regulations.

**Precautionary Statements**

Styrofoam™ Brand Tongue and Groove Insulation is combustible; protect from high heat sources. A protective barrier or thermal barrier may be required as specified in the local building codes. For more information, consult MSDS, call DuPont at 1-866-583-2583 or contact your local building inspector.

**Shelf Life and Storage**

When stored outdoors, keep insulation boards tarped or covered to protect from weather and weighted down to prevent boards from being blown around by the wind. Store above standing water.

**Disposal**

Dispose of any residual DuPont product, coated debris, or solvent in accordance with applicable federal, state, and local government regulations.
**Styrofoam™ Brand Scoreboard Extruded Polystyrene Foam Insulation**

Easy-to-Use, Scored Insulation for Exterior Cavity Walls and Foundations

### FEATURES/BENEFITS

**Description**

*Styrofoam™ Brand Scoreboard Extruded Polystyrene Foam Insulation* is an extruded polystyrene foam insulation board that is scored longitudinally on 16” and 24” centers, making it easy to size to commonly used widths, cut and install. It has excellent insulating characteristics, high resistance to water and water vapor, exceptional compressive strength and long-term durability.

*Styrofoam™ Brand Scoreboard Insulation* is designed for use in exterior cavity wall and foundation applications. Like all *Styrofoam™* Extruded Polystyrene products, *Styrofoam™ Brand Scoreboard Insulation* resists moisture to deliver a stable R-value** over the long term.

### Available Sizes

Available sizes, R-values and edge treatments for *Styrofoam™ Brand Scoreboard Insulation* can be found in Table 1.

### Sustainable Solutions

*Styrofoam™ Brand Scoreboard Insulation* is hydrochloro-fluorocarbon (HCFC) free with zero ozone-depletion potential. *Styrofoam™ Brand Scoreboard Insulation* is reusable in many applications. *Styrofoam™* Brand insulation products produced in North America contain an average of 20% pre-consumer recycled content certified by UL Environment Inc.

### TABLE 1: Sizes, R-values and Edge Treatments for *Styrofoam™* Brand Plazamate™ Extruded Polystyrene Foam Insulation

<table>
<thead>
<tr>
<th>Nominal Board Thickness(1) (in.)</th>
<th>R-Value(2)</th>
<th>Board Size (ft.)</th>
<th>Edge Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.75</td>
<td>3.8</td>
<td>4 x 8</td>
<td>Square Edge</td>
</tr>
<tr>
<td>1.0</td>
<td>5.0</td>
<td>4 x 8</td>
<td>Square Edge</td>
</tr>
<tr>
<td>1.5</td>
<td>7.5</td>
<td>4 x 8</td>
<td>Square Edge</td>
</tr>
<tr>
<td>2.0</td>
<td>10.0</td>
<td>4 x 8</td>
<td>Square Edge</td>
</tr>
<tr>
<td>2.5</td>
<td>12.5</td>
<td>4 x 8</td>
<td>Square Edge</td>
</tr>
<tr>
<td>3.0</td>
<td>15.0</td>
<td>4 x 8</td>
<td>Square Edge</td>
</tr>
</tbody>
</table>

1 Not all product sizes are available in all regions. Additional product sizes are available by custom order. Consult your DuPont sales representative about other sizes and lead-time requirements.

2 Aged R-value at 1” cured foam @ 75°F mean temperature. R-value expressed in ft²•h•°F/Btu. R-value determined by ASTM C518 using the aging process in ASTM C1289 (90 days @ 140°F).

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* *Styrofoam™* Brand Scoreboard Extruded Polystyrene Foam Insulation is a former product of The Dow Chemical Company.

** R means resistance to heat flow. The higher the R-value, the greater the insulating power. R-value determined by ASTM C518.
**PROPERTIES**

*Styrofoam™ Brand Scoreboard Insulation* exhibits physical properties as indicated in Table 2 when tested as represented. Review all instructions and (Material) Safety Data Sheet ((M)SDS) before use. Please contact DuPont at 1-866-583-2583 when additional guidance is required for writing specifications that include this product.

**TABLE 2: Physical Properties (U.S.) of Styrofoam™ Brand Scoreboard Extruded Polystyrene Foam Insulation**

<table>
<thead>
<tr>
<th>Property and Test Method</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thermal Resistance per inch, ASTM C518 @ 75°F mean temp., ft•h•°F/Btu, R-value(1), min.</td>
<td>5.0</td>
</tr>
<tr>
<td>Compressive Strength(2), ASTM D1621, psi, min.</td>
<td>25</td>
</tr>
<tr>
<td>Water Absorption, ASTM C272, % by volume, max.</td>
<td>0.3</td>
</tr>
<tr>
<td>Water Vapor Permeance(3), ASTM E96, perm, max.</td>
<td>15</td>
</tr>
<tr>
<td>Maximum Use Temperature, °F</td>
<td>165</td>
</tr>
<tr>
<td>Coefficient of Linear Thermal Expansion, ASTM D696, in/in•°F</td>
<td>3.5 x 10^-5</td>
</tr>
<tr>
<td>Flexural Strength, ASTM C203, psi, min.</td>
<td>50</td>
</tr>
<tr>
<td>Dimensional Stability, ASTM D2126, % linear change, max.</td>
<td>2.0</td>
</tr>
<tr>
<td>Surface Burning Characteristics(4), ASTM E84</td>
<td>15</td>
</tr>
<tr>
<td>Flame Spread(3), ASTM E84</td>
<td>165</td>
</tr>
</tbody>
</table>

1 R means resistance to heat flow. The higher the R-value, the greater the insulating power.

2 Vertical compressive strength is measured at 10 percent deformation or at yield, whichever occurs first. Since Styrofoam™ Extruded Polystyrene Foam Insulations are visco-elastic materials, adequate design safety factors should be used to prevent long-term creep and fatigue deformation.

3 Based on 1" thickness.

4 This numerical flame spread rating is not intended to reflect hazards presented by this or any other material under actual fire conditions.

**TESTING**

**Styrofoam™ Brand Scoreboard Insulation** meets ASTM C578, Type IV – Standard Specification for Rigid Cellular Polystyrene Thermal Insulation. Applicable standards include:

- **D1621** – Standard Test Method for Compressive Properties of Rigid Cellular Plastics
- **C272** – Standard Test Method for Water Absorption of Core Materials for Structural Sandwich Constructions
- **E96** – Standard Test Methods for Water Vapor Transmission of Materials
- **D696** – Standard Test Method for Linear Thermal Expansion of Plastics Between -30°C and 30°C with a Vitreous Silica Dilatometer
- **C203** – Standard Test Methods for Breaking Load and Flexural Properties of Block Type Thermal Insulation
- **D2126** – Standard Test Method for Response of Rigid Cellular Plastics to Thermal and Humid Aging

**Notice**

*Styrofoam™ Brand Scoreboard™ Insulation* complies with the following codes:

- Meets IBC/IRC requirements for foam plastic insulation; see ICC-ES ESR 2142, BOCA-ES RR 21-02
- Underwriters Laboratories, Inc. (UL) Classified, see Classification Certificate D369

**Warranty**

In the United States, a 50-year thermal limited warranty is available on *Styrofoam™ Insulation* products 1.5 inches and greater. For thickness less than 1.5 inches, other warranties may apply. Visit building.dupont.com/warranties or contact your DuPont representative for details.
HANDLING

WARNING: For Professional Use Only – Read and follow the entire Handling section and the Safety Data Sheets (SDSs, formerly MSDSs or Material Safety Data Sheets) carefully before use. The information below is designed to protect the user and allow for safe use and handling of Styrofoam™ Brand products.

Precautionary Statements

- **Styrofoam™ Brand Scoreboard Insulation** is combustible; protect from high heat sources. A protective barrier or thermal barrier may be required as specified in the appropriate building code. For more information, consult MSDS, call DuPont at 1-866-583-2583 or contact your local building inspector.

- A light-colored, opaque protective covering should be used if excessive solar exposure is expected. Exposure to ultraviolet radiation in sunlight for several weeks will cause the surface of **Styrofoam™ Brand Scoreboard Insulation** to become yellow and dusty.

- The surface degradation will have no measurable effect on the insulating value of the plastic foam unless the deterioration is allowed to continue until actual foam thickness is lost. Since the dust would impair the performance of adhesives and finishes, the dusty surface should be brushed off before these products are applied.

- Follow all applicable federal, state, local and employer regulations.

**Disposal**

Dispose of any residual Styrofoam™ Brand product, coated debris, or solvent in accordance with applicable federal, state, and local government regulations.
Styrofoam™ Brand Ag Board Insulation

Installation Recommendations

**Description**
For more than 50 years, Styrofoam™ Brand Ag Board Insulation extruded polystyrene insulation has helped agricultural building owners control the building's indoor environment and protect its contents, whether livestock, crops or equipment. In addition to its exceptional insulating value, Styrofoam™ Brand Ag Board resists moisture infiltration, withstands high-pressure cleaning and reduces the potential for moisture condensation within the wall.

The easy-to-install Styrofoam™ Brand Ag Board uses shiplapped edges to create a secure joint that does not require taping, saving considerable installation time.

**Equipment Guidelines**
To install Styrofoam™ Brand Ag Board, you will need:
- Utility knife or small handsaw
- Safety glasses
- Straight edge
- Measuring tape
- Pencil
- Fasteners and poly washers (such as Quik Cap Washer-Plastic Round or Buildex Multi-Diameter Insulation Teks)
- Polystyrene-compatible polyurethane spray foam sealant, such as GREAT STUFF PRO™ Gaps & Cracks Polyurethane Foam Sealant
- Styrofoam™ Brand All-Purpose Tape (Optional)
- Squeegee or soft paint roller (Optional)

**Installation Procedure**
1. There are two ways to cut Styrofoam™ Brand Ag Board Insulation. One way is to use a straight edge and a utility knife or handsaw. Or, use a knife to score the Styrofoam™ Brand Ag Board. Then break the board over the edge of a table or sawhorse.
2. Attach Styrofoam™ Brand Ag Board perpendicular to framing, spanning at least three framing members with insulation board joints breaking over framing or meeting the roof edge. Penetrate separate wood and metal framing 1” with a corrosion-resistant fastener and poly washer, such as QUIK Cap. When fastening to metal, Buildex Multi-Diameter Insulation Teks or equivalent (with minimum 1-1/4” poly washers) are advised.

3. Lock the shiplapped edges together.

4. For maximum protection against moisture and air infiltration, seal the board end joints with Styrofoam™ Brand All-Purpose Tape. Use a squeegee or soft paint roller to press the tape firmly to the joint. Cut tape with a knife or scissors. Do not tear tape.

End-joint gaps that are greater than 1/8” should be filled with spray foam such as GREAT STUFF PRO™ Gaps & Cracks or equivalent to keep a continuous air infiltration barrier and to help ensure maximum thermal efficiency across the board joints. To increase the moisture effectiveness of the board joints, apply Styrofoam™ Brand All-Purpose Tape over the sprayed board joints.

*Styrofoam™ Brand Ag Board Insulation is a former product of The Dow Chemical Company.*
To maximize the effectiveness of your polystyrene insulation projects, Dow offers a range of extruded polystyrene products, such as STYROFOAM™ HIGHLOAD 40, 60 and 100. These products are designed to provide exceptional moisture resistance and resistance to heat flow, ensuring optimal performance in a variety of applications.

### 1. PRODUCT NAME

STYROFOAM™ HIGHLOAD Extruded Polystyrene Foam Insulation

### 2. MANUFACTURER

The Dow Chemical Company
Dow Building Solutions
200 Larkin Center
Midland, MI 48674
1-866-583-BLUE (2583)
Fax 1-989-832-1465
Dow Chemical Canada ULC
Dow Building Solutions
450 – 1st St. SW, Suite 2100
Calgary, AB T2P 5H1
1-866-583-BLUE (2583) (English)
1-800-363-6210 (French)
dowbuildingsolutions.com

### 3. PRODUCT DESCRIPTION

STYROFOAM™ HIGHLOAD Extruded Polystyrene Foam Insulation is a closed-cell foam insulation. Available in compressive strengths of 40, 60 and 100 psi (275, 415 and 690 kPa), STYROFOAM™ HIGHLOAD insulation features exceptional moisture resistance and R-value* retention. All three STYROFOAM™ HIGHLOAD insulation products resist compressive creep and fatigue, delivering long-term compressive strength. Like all STYROFOAM™ insulation products, STYROFOAM™ HIGHLOAD 40, 60 and 100 are durable, versatile and reusable – making them a preferred choice for a variety of high-load applications.

#### Basic Use

STYROFOAM™ HIGHLOAD insulation is designed for use in low-temperature (freezer floor) applications, highways, airport runways, bridge abutments, parking decks, utility lines, ice rinks and plaza decks. It is the responsibility of the designer to select the proper STYROFOAM™ HIGHLOAD insulation product based on the dead and live loads expected in the application.

#### Code Compliance

STYROFOAM™ HIGHLOAD 40, 60 and 100 insulation complies with the following codes:
- International Residential Code (IRC) and International Building Code (IBC); see ICC-ES ESR 2142 (excluding STYROFOAM™ HIGHLOAD 100)
- California Std. Reg. #CA T-064
- Underwriters Laboratories, see Classification Certificate D369
- Underwriters Laboratories Verified to ESR 2142
- CCMC - EVALUATION 04888-L

Contact your Dow sales representative or local authorities for state/provincial and local building code requirements and related acceptances.

### 4. TECHNICAL DATA

#### Applicable Standards

STYROFOAM™ HIGHLOAD 40, 60 and 100 insulation meets ASTM C578 – Standard Specification for Rigid Cellular Polystyrene Thermal Insulation. Applicable ASTM standards include:
- D6162 – Standard Test Method for Compressive Properties of Rigid Cellular Plastics
- D2842 – Standard Test Method for Water Absorption of Rigid Cellular Plastics
- C272 - Standard Test Method for Water Absorption of Core Materials for Structural Sandwich Constructions
- D6162 – Standard Test Method for Compressive Properties of Rigid Cellular Plastics
- D2842 – Standard Test Method for Water Absorption of Rigid Cellular Plastics
- C272 - Standard Test Method for Water Absorption of Core Materials for Structural Sandwich Constructions

#### TABLE 1: U.S. VALUES AND TYPICAL PHYSICAL PROPERTIES OF STYROFOAM™ HIGHLOAD 40, 60 AND 100 INSULATION

<table>
<thead>
<tr>
<th>Property and Test Method</th>
<th>HIGHLOAD 40</th>
<th>HIGHLOAD 60</th>
<th>HIGHLOAD 100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thermal Resistance, per inch, ASTM C518, C177, @ 75°F mean temp., R-10°F/°F·Btu, R-value, min.</td>
<td>5.0</td>
<td>5.0</td>
<td>5.0</td>
</tr>
<tr>
<td>Compressive Strength, ASTM D1621, psi, min.</td>
<td>40</td>
<td>60</td>
<td>100</td>
</tr>
<tr>
<td>Water Absorption, ASTM C272, % by volume, max. (24 hr water immersion)</td>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
</tr>
<tr>
<td>Water Vapor Permeance, ASTM E96, perms</td>
<td>1.0 (57.2 ng/Pa.s.m²)</td>
<td>0.8 (45.8 ng/Pa.s.m²)</td>
<td>0.8 (45.8 ng/Pa.s.m²)</td>
</tr>
<tr>
<td>Maximum Use Temperature, °F</td>
<td>165</td>
<td>165</td>
<td>165</td>
</tr>
<tr>
<td>Coefficient of Linear Thermal Expansion, ASTM D696, in/in×°F</td>
<td>3.5 × 10⁻⁵</td>
<td>3.5 × 10⁻⁵</td>
<td>3.5 × 10⁻⁵</td>
</tr>
<tr>
<td>Flexural Strength, ASTM C203, psi, min.</td>
<td>60</td>
<td>75</td>
<td>100</td>
</tr>
<tr>
<td>Compressive Modulus (typical), ASTM D 1621, psi (kPa)</td>
<td>1,400 (9,650)</td>
<td>2,200 (15,170)</td>
<td>3,700 (25,510)</td>
</tr>
</tbody>
</table>

* R means resistance to heat flow. The higher the R-value or RSI, the greater the insulating power.

(1) Vertical compressive strength is measured at 5 percent deformation or at yield, whichever occurs first. Since STYROFOAM insulations are visco-elastic materials, adequate design safety factors should be used to prevent long-term creep. For static loads, 3:1 is suggested. For dynamic loads, call 1-866-583-BLUE (2583) for safety factor recommendation.

(2) Water vapor permeance varies with product type and thickness. Values are based on the desiccant method and they apply to insulation 1" or greater in thickness.

For more detailed technical information and specifications, visit dowbuildingsolutions.com or contact your Dow sales representative.
Typical Physical Properties

STYROFOAM™ HIGHLOAD 40, 60 and 100 insulation products exhibit the typical physical properties indicated in Tables 1 and 2 when tested as represented.

Environmental Data

STYROFOAM™ Brand HIGHLOAD 40, 60, 100 Insulation is hydrochlorofluorocarbon (HCFC) free with zero ozone-depletion potential. STYROFOAM™ Brand HIGHLOAD 40, 60, 100 Insulation is reusable in many applications.

Fire Protection

STYROFOAM™ HIGHLOAD 40, 60 and 100 insulation is combustible; protect from high heat sources. Local building codes may require a protective or thermal barrier. For more information, consult (M)SDS, call Dow at 1-866-583-BLUE (2583) or contact your local building inspector.

5. INSTALLATION

STYROFOAM™ HIGHLOAD 40, 60 and 100 insulation boards are easy to handle and install. They can be cut with a utility knife or any sharp blade. Contact a local Dow representative or access the literature library at www.dowbuildingsolutions.com for more specific instructions.

6. AVAILABILITY

STYROFOAM™ HIGHLOAD 40, 60 and 100 insulation products are distributed through an extensive network. For more information, call:
1-800-232-2436 (English)
1-800-565-1255 (French)

7. WARRANTY

In the United States, a 50-year thermal limited warranty is available on STYROFOAM™ Insulation products 1.5 inches and greater. For thickness less than 1.5 inches, other warranties may apply. Warranties are available as described at www.dbswarranties.com.

8. MAINTENANCE

Not applicable.

9. TECHNICAL SERVICES

Dow can provide technical information to help address questions when using STYROFOAM™ HIGHLOAD 40, 60 and 100 insulation products. Technical personnel are available to assist with any insulation project. For technical assistance call:
1-866-583-BLUE (2583) (English)
1-800-363-6210 (French)

10. FILING SYSTEMS

www.dowbuildingsolutions.com

TABLE 2: CANADA VALUES AND TYPICAL PHYSICAL PROPERTIES OF STYROFOAM™ HIGHLOAD 40, 60 AND 100 INSULATION

<table>
<thead>
<tr>
<th>Property and Test Method</th>
<th>HIGHLOAD 40</th>
<th>HIGHLOAD 60</th>
<th>HIGHLOAD 100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thermal Resistance, per inch (25 mm), ASTM C518, C177, @ 75°F (24°C) mean temp., ft•°F/Blu (m²•°C/W), R-value (RSI), min.</td>
<td>5.0 (.88)</td>
<td>5.0 (.88)</td>
<td>5.0 (.88)</td>
</tr>
<tr>
<td>Compressive Strength(1), ASTM D1621, psi (kPa), min.</td>
<td>40 (275)</td>
<td>60 (415)</td>
<td>100 (690)</td>
</tr>
<tr>
<td>Water Absorption, ASTM D2842, % by volume, max. (96 hr water immersion)</td>
<td>0.6</td>
<td>0.55</td>
<td>0.5</td>
</tr>
<tr>
<td>Water Vapour Permeance(2), ASTM E96, perms (ng/Pa•s•m2)</td>
<td>1.0 (57.2 ng/Pa.s.m²)</td>
<td>0.8 (45.8 ng/Pa.s.m²)</td>
<td>0.8 (45.8 ng/Pa.s.m²)</td>
</tr>
<tr>
<td>Maximum Use Temperature, °F (°C)</td>
<td>165 (74)</td>
<td>165 (74)</td>
<td>165 (74)</td>
</tr>
<tr>
<td>Coefficient of Linear Thermal Expansion, ASTM D696, in/in•°F (mm/m•°C)</td>
<td>3.5 × 10⁻⁵ (6.3 × 10⁻⁵)</td>
<td>3.5 × 10⁻⁵ (6.3 × 10⁻⁵)</td>
<td>3.5 × 10⁻⁶ (6.3 × 10⁻⁶)</td>
</tr>
<tr>
<td>Flexural Strength, ASTM C203, psi (kPa), min.</td>
<td>70 (480)</td>
<td>85 (585)</td>
<td>100 (585)</td>
</tr>
<tr>
<td>Compressive Modulus (typical), ASTM D1621, psi (kPa)</td>
<td>1,400 (9,650)</td>
<td>2,200 (15,170)</td>
<td>3,700 (25,510)</td>
</tr>
<tr>
<td>Complies with CAN/ULC S701, Type</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
</tbody>
</table>

(1) Vertical compressive strength is measured at 5 percent deformation or at yield, whichever occurs first. Since STYROFOAM insulations are visco-elastic materials, adequate design safety factors should be used to prevent long-term creep. For static loads, 3:1 is suggested. For dynamic loads, call 1-866-583-BLUE (2583) for safety factor recommendation.

(2) Water vapour permeance varies with product type and thickness. Values are based on the desiccant method and they apply to insulation 1" (25 mm) or greater in thickness.
Homeowners consistently rank energy efficiency as a high priority when purchasing a new home. That’s understandable, since the heating and cooling bill is the second highest monthly payment after the mortgage for many families. Most say they are willing to spend more for a home that will deliver energy savings year after year.

Cavity insulation is a good start, but it’s not enough. Wood framing, ducts, wiring and plumbing – all poor insulators – make up more than 25 percent of a wall’s surface. In a typical home, that’s the equivalent of leaving an entire wall uninsulated. With an R-value* of approximately 3.0 at nominal 1/2”, STYROFOAM™ Brand Residential Sheathing Extruded Polystyrene Insulation on exterior walls boosts the effective R-value of the wall by 20%.

®™Trademark of The Dow Chemical Company (“Dow”) or an affiliated company of Dow

* R means resistance to heat flow. The higher the R-value, the greater the insulating power.
STYROFOAM™ Brand Residential Sheathing is lightweight, making it easy to handle, but its thin plastic film coating enables it to withstand abuse during handling and around the job site. Yet it remains a simple matter to cut to size with a score and a snap. It can be placed directly over uninsulated studs using let-in bracing or metal strappings to provide the code-required lateral structural bracing, or as an insulating and weather barrier layer over wood panel sheathings such as OSB or plywood.

Adding STYROFOAM™ Brand Residential Sheathing also provides a level, even surface for the exterior sheathing. With STYROFOAM™ Brand Residential Sheathing on your next build, you’ll offer homebuyers a winning combination of durability and long-term savings.

STYROFOAM™ Brand Residential Sheathing adds up to an investment that will pay for itself in just a few years, and continue to provide value for years to come. Using STYROFOAM™ Brand Residential Sheathing could lead to fewer callbacks resulting in an enhanced reputation for builders.

**STYROFOAM™ Brand Residential Sheathing** provides a one-two punch against moisture:

- **Defends against wind-driven moisture penetrating a wall system**, providing an effective layer of protection for wood components and cavity insulation.
- **Moderates temperature in the wall cavity**, reducing the potential for damaging moisture condensation to accumulate inside the wall cavity.

**Air Infiltration** is the largest single cause of energy loss in most homes. Adding STYROFOAM™ Brand Residential Sheathing to an exterior wall helps cover seams in the sheathing and gaps around windows and doors, providing a more complete barrier against air leakage.

**PROTECTION AGAINST MOISTURE AND AIR**

Extruded polystyrene foam insulation like STYROFOAM™ Brand Residential Sheathing is inherently resistant to moisture, which can wreak havoc on other building materials. Moisture can compromise the performance of cavity insulation and damage drywall, wood framing and OSB or plywood sheathing. STYROFOAM™ Brand Residential Sheathing provides a one-two punch against moisture:

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**Tough For The Job**

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Extruded polystyrene foam insulation like STYROFOAM™ Brand Residential Sheathing is inherently resistant to moisture, which can wreak havoc on other building materials. Moisture can compromise the performance of cavity insulation and damage drywall, wood framing and OSB or plywood sheathing. STYROFOAM™ Brand Residential Sheathing provides a one-two punch against moisture:

- **Defends against wind-driven moisture penetrating a wall system**, providing an effective layer of protection for wood components and cavity insulation.
- **Moderates temperature in the wall cavity**, reducing the potential for damaging moisture condensation to accumulate inside the wall cavity.

Air infiltration is the largest single cause of energy loss in most homes. Adding STYROFOAM™ Brand Residential Sheathing to an exterior wall helps cover seams in the sheathing and gaps around windows and doors, providing a more complete barrier against air leakage.

**Tough For The Job**

STYROFOAM™ Brand Residential Sheathing is lightweight, making it easy to handle, but its thin plastic film coating enables it to withstand abuse during handling and around the job site. Yet it remains a simple matter to cut to size with a score and a snap. It can be placed directly over uninsulated studs using let-in bracing or metal strappings to provide the code-required lateral structural bracing, or as an insulating and weather barrier layer over wood panel sheathings such as OSB or plywood.

Adding STYROFOAM™ Brand Residential Sheathing also provides a level, even surface for the exterior sheathing. With STYROFOAM™ Brand Residential Sheathing on your next build, you’ll offer homebuyers a winning combination of durability and long-term savings.

**STYROFOAM™ Brand Residential Sheathing** adds up to an investment that will pay for itself in just a few years, and continue to provide value for years to come. Using STYROFOAM™ Brand Residential Sheathing could lead to fewer callbacks resulting in an enhanced reputation for builders.

**PROTECTION AGAINST MOISTURE AND AIR**

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