

DuPont™ Styrofoam™ Brand Roofmate™ XPS Foam Insulation

Water-Resistant Insulation for Protected Membrane Roofing Systems

FEATURES/BENEFITS

Description

DuPont™ Styrofoam™ Brand Roofmate™ Extruded Polystyrene (XPS) Foam Insulation* is designed for installation above waterproofing or roofing membranes in protected membrane roof (PMR) or green roof applications.

Engineered for use on heavyweight decks (e.g. reinforced concrete) with a ballast layer of gravel or concrete slabs, Styrofoam™ Brand Roofmate™ helps the roof membrane maintain a steady temperature, minimizing the harmful effects of freeze-thaw cycles, weathering and physical damage during and after construction.

Sustainable Solutions

Styrofoam™ Brand Roofmate™ Insulation uses BluEdge™ technology. It is hydrochlorofluorocarbon (HCFC) free with zero ozone-depletion potential and is reusable in many applications.

Ease of Installation

Styrofoam™ Brand Roofmate™ Insulation is:

- Strong, yet lightweight
- Easy to fabricate into various sizes and shapes to meet specific design needs
- Suited for Protected Membrane Roofs (PMR)
- Water and rot resistant – ideal for insulating green roofs
- Lined with 1/2" x 1/4" drainage channels on the bottom long edge
- Reusable

Available Sizes

U.S. and Canadian sizes, R-values and edge treatments for Styrofoam™ Brand Roofmate™ Insulation can be found in Tables 1 and 2, respectively.

TABLE 1: U.S. Sizes, R-Values and Edge Treatments for Styrofoam™ Brand Roofmate™ XPS Foam Insulation

Nominal Board Thickness ¹ (in.)	R-Value ²	Board Size (ft.)	Edge Treatment
1.0	5.0	2 x 8	Butt Edge
1.5	7.5	2 x 8	Butt Edge
2.0	10.0	2 x 8	Butt Edge
3.0	15.0	2 x 8	Butt Edge
3.5	17.5	2 x 8	Butt Edge
4.0	20.0	2 x 8	Butt Edge

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·h·°F/Btu. R-value determined by ASTM C518.

TABLE 2: Canadian Sizes, R-Values and Edge Treatments for Styrofoam™ Brand Roofmate™ XPS Foam Insulation

Nominal Board Thickness ¹ mm (in.)	RSI (R-value) ²	Board Size mm (ft.)	Edge Treatment
25 (1.0)	5.0 (.88)	610 x 2440 (2 x 8)	Butt Edge
38 (1.5)	7.5 (1.32)	610 x 2440 (2 x 8)	Shiplap Edge
50 (2.0)	10.0 (1.76)	610 x 2440 (2 x 8)	Shiplap Edge
75 (3.0)	15.0 (2.64)	610 x 2440 (2 x 8)	Shiplap Edge
100 (4.0)	20.0 (3.52)	610 x 2440 (2 x 8)	Shiplap Edge

¹ Not all product sizes are available in all regions.

² RSI (R-value) means resistance to heat flow. The higher the RSI (R-value), the greater the insulating power. RSI is expressed in K·m²/W. RSI (R-value) determined by ASTM C518.

* Styrofoam™ Brand Roofmate™ Extruded Polystyrene (XPS) Foam Insulation is a former product of The Dow Chemical Company.

** Aged R-value at 1" of 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).

PROPERTIES

DuPont™ Styrofoam™ Brand Roofmate™ Extruded Polystyrene (XPS) Foam Insulation exhibits physical properties as indicated in Tables 3 and 4 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 3: U.S. Physical Properties of Styrofoam™ Brand Roofmate™ XPS Foam Insulation

Property and Test Method	Value
Thermal Resistance per in. ASTM C518 @ 75°F mean temp., ft ² ·h·°F/Btu, R-value ⁽¹⁾ , min.	5.0
Compressive Strength ⁽²⁾ , ASTM D1621, psi, min.	40
Water Absorption, ASTM C272, % by volume, max.	0.1
Water Vapor Permeance ⁽³⁾ , ASTM E96, perm, max	1.0
Maximum Use Temperature, °F	165
Coefficient of Linear Thermal Expansion, ASTM D696, in/in·°F	3.5 x 10 ⁻⁵
Flexural Strength, ASTM C203, psi, min.	60
Dimensional Stability, ASTM D2126, % linear change, max.	2.0
Flame Spread ⁽⁴⁾ , ASTM E84	15
Smoke Developed, ASTM E84	165
Surface Burning Characteristics, ASTM E84 for both foam core and finished product	Class A
Flame Spread	25
Smoke Developed	<450

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.

³ Based on 1" thickness.

⁴ 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.

TABLE 4: Canadian Physical Properties of Styrofoam™ Brand Roofmate™ XPS Foam Insulation

Property and Test Method	Value
Thermal Resistance per in. (25 mm), ASTM C518 @ 75°F (24°C) mean temp., ft ² ·h·°F/Btu (m ² ·°C/W), R-value (RSI) ⁽¹⁾ , min.	5.0 (.88)
Compressive Strength ⁽²⁾ , ASTM D1621, psi, min.	35 (240)
Water Absorption, ASTM D2842, % by volume, max.	0.3
Water Vapour Permeance ⁽³⁾ , ASTM E96, perm (ng/Pa·s·m ²), max.	1.0 (57)
Maximum Use Temperature, °F (°C)	165 (74)
Coefficient of Linear Thermal Expansion, ASTM D696, in/in·°F (mm/m·°C)	3.5 x 10 ⁻⁵ (6.3 x 10 ⁻²)
Flexural Strength, ASTM C203, psi (kPa), min.	50 (350)
Dimensional Stability, ASTM D2126, at 158°F (70°C) ambient humidity, % linear change, max.	1.5
Surface Burning Characteristics, CAN/ULC S102.2 for both foam core and finished product	
Flame Spread	200*
Smoke Developed	600*

¹ Values are consistent with the criteria of ASTM C578.

² Vertical compressive strength is measured at 10 percent deformation or yield, whichever occurs first. Since Styrofoam™ Brand XPS 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 Based on 1" (25 mm) thickness.

* Based on 12.5 mm Thickness

TESTING

Applicable Standards

Styrofoam™ Brand Roofmate™ Insulation meets ASTM C578-01, Type VI – Standard Specification for Rigid Cellular Polystyrene Thermal Insulation. Applicable standards include:

- **C518** – Standard Test Method for Steady- State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus
- **D1621** – 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
- **E96** – Standard Test Methods for Water Vapor Transmission of Materials
- **E84** – Standard Test Method for Surface Burning Characteristics of Building 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
- **CAN/ULC S701, Type 4** – Standard for Thermal Insulation, Polystyrene Boards

Notice

DuPont™ Styrofoam™ Brand Roofmate™ Extruded Polystyrene (XPS) Foam Insulation complies with the following codes:

- Meets IBC/IRC requirements for foam plastic insulation; see ICC-ES ESR 2142
- ICBO-ES ER-2257
- BOCA-ES RR 21-02

- Underwriters Laboratories, Inc. (UL) Classified, see Classification Certificate D369
- Factory Mutual Approved – Subject to conditions of approval as a roof insulation when installed as described in the current edition of FM Approval Guide
- National Building Code of Canada
- CCMC – Evaluation Listing #04888-L

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

Precautionary Statements

- **Styrofoam™ Brand Roofmate™ 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.
- Because of the critical technical design aspects of many of its applications, DuPont recommends that qualified designers or consultants design the system. Contact a local DuPont representative for more specific instruction

Shelf Life and Storage

When stored outdoors, keep insulation boards covered with white plastic film or light-colored tarps 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 Styrofoam™ Brand product, coated debris, or solvent in accordance with applicable federal, state, and local government regulations.



**For more information visit us
at styrofoam.com
or call 1-866-583-2583**

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CAUTION: This product 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 (Material) Safety Data Sheet ((M)SDS), call DuPont at 1-866-583-2583 or contact your local building inspector. In an emergency, call 1-989-636-4400 in the U.S. or 1-519-339-3711 in Canada.

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

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

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