

# DuPont™ Styrofoam™ Brand Freezermate™ 30, 40 & 60 XPS Foam Insulation

Subfloor Thermal Insulation for Low-Temperature Applications

## FEATURES/BENEFITS

### Description

DuPont™ Styrofoam™ Brand Freezermate™ Extruded Polystyrene (XPS) Foam Insulation\* is a closed-cell, extruded polystyrene foam insulation with smooth, high density skins.

Available in compressive strengths of 30, 40 and 60 psi, Styrofoam™ Brand Freezermate™ Insulation features exceptional moisture resistance and R-value retention. All three Styrofoam™ Brand Freezermate™ products have excellent insulating characteristics, high resistance to water and water vapor, excellent freeze-thaw resistance, superior compressive strength and long-term durability.

Styrofoam™ Brand Freezermate™ can also be used in most static and dynamic loading situations for flooring applications. Because the rigid foam insulation boards resist even severe forms of moisture penetration in freezer and cooler construction, they offer long-term R-values\* superior to other types of thermal insulation.

### Available Sizes

Styrofoam™ Brand Freezermate™ Insulation is available in 2' x 8' and 4' x 8' boards with square edge treatment and nominal board thicknesses of either 2", 3" or 4".

### Ease of Use

Styrofoam™ Brand Freezermate™ Insulation boards:

- are easy to handle, cut with a utility knife or any sharp blade, and install
- include smooth, high-density skins
- resist even severe forms of moisture penetration in freezer and cooler construction
- offer long-term R-values superior to other types of thermal insulation
- have excellent freeze-thaw resistance
- have excellent compressive strength (min. 30 psi)
- boast long-term durability

### Sustainable Solutions

- Styrofoam™ Brand Freezermate™ Insulation is reusable in many applications.
- Styrofoam™ Brand Freezermate™ uses BluEdge™ technology. It is hydrochlorofluorocarbon (HCFC) free with zero ozone depletion potential.
- Contains an average of 20% pre-consumer recycled content certified by UL Environment Inc.

## PROPERTIES

DuPont™ Styrofoam™ Brand Freezermate™ 30, 40 & 60 Extruded Polystyrene (XPS) Foam 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 1: Physical Properties of Styrofoam™ Freezermate™ XPS Foam Insulation**

Test Method	Property	Typical Value	Units
ASTM C518, C177	Thermal Resistance, per inch, @ 75°F mean temp.	5.0	ft <sup>2</sup> ·h·°F/Btu, R-value <sup>2</sup> , min.
ASTM D1621	Compressive Strength <sup>3</sup>		
	Freezermate™ 30	30	psi, min.
	Freezermate™ 40	40	
Freezermate™ 60	60		
ASTM C272	Water Absorption	0.1	% by volume, max.
ASTM E96	Water Vapor Permeance <sup>4</sup>		
	Freezermate™ 30	1.5 (86 ng/Pa.s.m <sup>2</sup> )	perm, max.
	Freezermate™ 40	1.0 (57.2 ng/Pa.s.m <sup>2</sup> )	
Freezermate™ 60	0.8 (45.8 ng/Pa.s.m <sup>2</sup> )		
-	Maximum Operating Temperature	165	°F
ASTM D696	Coefficient of Linear Thermal Expansion	3.5 x 10 <sup>-5</sup>	in/in·°F
ASTM C203	Flexural Strength		
	Freezermate™ 30	50	psi, min.
	Freezermate™ 40	60	
Freezermate™ 60	75		
ASTM D2126	Dimensional Stability	3.5	% linear change, max.
Complies with ASTM C578	Type		
	Freezermate™ 30	IV	
	Freezermate™ 40	VI	
ASTM E84	Surface Burning Characteristics, for both foam core and finished product	Class A	
	Flame Spread <sup>5</sup>	25*	
	Smoke Developed	<450*	

<sup>1</sup> Not all product sizes are available in all regions.

<sup>2</sup> R means resistance to heat flow. The higher the R-value, the greater the insulating power. R-values are expressed in ft<sup>2</sup>·h·°F/Btu. R-value determined by ASTM C518.

<sup>3</sup> Vertical compressive strength is measured at 10 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.

<sup>4</sup> 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.

<sup>5</sup> This numerical flame spread rating is not intended to reflect hazards presented by this or any other material under actual fire conditions.

\* Based on 12.5 mm Thickness

## TESTING

### Applicable Standards

Styrofoam™ Brand Freezermate™ Insulation meets ASTM C578 – Standard Specification for Rigid Cellular Polystyrene Thermal Insulation, which includes:

- **ASTM C177** – Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus
- **ASTM C518** – Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus
- **ASTM D1621** – Standard Test Method for Compressive Properties of Rigid Cellular Plastics
- **ASTM D2842** – Standard Test Method for Water Absorption of Rigid Cellular Plastics
- **ASTM C272** – Standard Test Method for Water Absorption of Core Materials for Structural Sandwich Constructions
- **ASTM D696** – Standard Test Method for Coefficient of Linear Thermal Expansion of Plastics Between -30°C and 30°C With a Vitreous Silica Dilatometer
- **ASTM E96** – Standard Test Methods for Water Vapor Transmission of Materials
- **ASTM C203** – Standard Test Methods for Breaking Load and Flexural Properties of Block-Type Thermal Insulation
- **ASTM D2126** – Standard Test Method for Response of Rigid Cellular Plastics to Thermal and Humid Aging
- **ASTM D4716** – Standard Test Method for Determining the (In-plane) Flow Rate per Unit Width and Hydraulic Transmissivity of a Geosynthetic Using a Constant Head

## Notice

Styrofoam™ Brand Freezermate™ Insulation complies with the following codes:

- Meets IBC/IRC requirements for foam plastic insulation; see ICC-ES ESR 2142
- California Std. Reg. #CA T-064
- ICBO-ES ER 2257
- BOCA-ES RR 21-02
- Underwriters Laboratories Verified to ESR 2142

- Underwriters Laboratories, Inc. (UL) Classified, see Classification Certificate D369
- CCMC – EVALUATION 04888-L

## Warranty

In the United States, a 50-year thermal limited warranty is available on Styrofoam™ Brand insulation 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](http://building.dupont.com/warranties).

## 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

- DuPont™ Styrofoam™ Brand Freezermate™ 30, 40 & 60 Extruded Polystyrene (XPS) Foam 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.
- Since dust would impair the performance of adhesives and finishes, dusty surfaces should be brushed off before products are applied.

### Disposal

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



For more information visit us at [styrofoam.com/freezermate](http://styrofoam.com/freezermate) 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 call the DuPont Contact Center at 866-583-2583 or contact your local building inspector. For emergencies contact Chemtrec 800-424-9300, CCN (Contract Number) 7442.

**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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