



STYROFOAM™ Brand ROOFMATE™ Extruded Polystyrene Foam Insulation

1. PRODUCT NAME

STYROFOAM™ Brand ROOFMATE™ Extruded Polystyrene Foam Insulation

2. MANUFACTURER

The Dow Chemical Company
Dow Building Solutions
200 Larkin Midland, MI 48674
1-866-583-BLUE (2583)
Fax 1-989-832-1465

www.dowbuildingsolutions.com

3. PRODUCT DESCRIPTION

Basic Use

STYROFOAM™ Brand ROOFMATE™ Extruded Polystyrene Foam Insulation is designed for installation above waterproofing or roofing membranes in protected membrane roof (PMR) applications.

STYROFOAM™ Brand ROOFMATE™ Insulation helps the roof membrane maintain a steady temperature, minimizing the harmful effects of freeze-thaw cycles, weathering and physical damage during and after construction.

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

Nominal Board Thickness ⁽¹⁾ (in.)	R-Value	Board Size (mm)	Edge Treatment
1.0	5.0 (.88)	2 x 8	Butt Edge
1.5	7.5 (1.32)	2 x 8	Shiplap Edge
2.0	10.0 (1.76)	2 x 8	Shiplap Edge
3.0	15.0 (2.64)	2 x 8	Shiplap Edge
3.5	20.0 (3.52)	2 x 8	Shiplap Edge

⁽¹⁾ Not all product sizes are available in all regions.

⁽²⁾ R means resistance to heat flow. The higher the R-value or RSI (R-Value Système Internationale), the greater the insulating power. R-values are expressed in ft²•h•°F/Btu. RSI values are expressed in m²°C/W. R-value determined by ASTM C518.

4. TECHNICAL DATA

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

Physical Properties

STYROFOAM™ Brand ROOFMATE™ Insulation exhibits physical properties as indicated in Tables 3 and 4 when tested as represented.

Environmental Data

STYROFOAM™ Brand ROOFMATE™ Insulation is hydrochlorofluorocarbon (HCFC) free with zero ozone depletion potential.

STYROFOAM™ Brand ROOFMATE™ Extruded Polystyrene Foam Insulation is reusable in many applications.

Fire Protection

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 Dow at 1-866-583-BLUE (2583) or contact your local building inspector.

Code Compliances

STYROFOAM™ Brand ROOFMATE™ 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

5. INSTALLATION

STYROFOAM™ Brand ROOFMATE™ Insulation is strong, yet lightweight and easy to fabricate into various sizes and shapes to meet specific design needs. Because of the critical technical design aspects of many of its applications, Dow recommends that qualified designers or consultants design your system.

Contact a local Dow representative for more specific instructions.

6. AVAILABILITY

STYROFOAM™ Brand ROOFMATE™ Insulation is distributed through an extensive network of roofing distributors. For product availability or for the name of your local Dow sales representative, 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™ Brand ROOFMATE™ Insulation. 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

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TABLE 3: Physical Properties (U.S.) of STYROFOAM™ Brand ROOFMATE™ Extruded Polystyrene 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.	0.3
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

⁽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: Physical Properties (Canadian) of STYROFOAM™ Brand ROOFMATE™ Extruded Polystyrene 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 (kPa), min.	35 (240)
Water Absorption, ASTM D2842, % by volume, max.	0.7
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

⁽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 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 Dow for design recommendations.

⁽³⁾ Based on 1" (25 mm) thickness.



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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 MSDS, call Dow at 1-866-583-BLUE (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 Dow can give assurance that mold will not develop in any specific system

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Form No. 179-05477-0915 CDP
Form No. 178-00238-0915 CDP