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

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)

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.

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

CODE COMPLIANCE

STYROFOAM™ Brand ROOFMATE™ Insulation complies with the following codes:

- Meets IBC/IRC requirements for foam plastic insulation; see ICC-ES NER-699
- 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

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

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.

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
2.5	12.5	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 $ft^2 \bullet h \bullet °F/Btu$. 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), MM	R-VALUE(2)	BOARD SIZE, MM	EDGE TREATMENT
25	5.0	600 x 1200	Butt Edge
40	7.5	600 x 1200	Shiplap Edge
50	10.0	600 x 1200	Shiplap Edge
65	12.5	600 x 1200	Shiplap Edge
75	15.0	600 x 1200	Shiplap Edge
100	20.0	600 x 1200	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 $ft^2 \bullet h \bullet °F/Btu$. RSI values are expressed in $m^2 °C/W$. R-value determined by ASTM C518.

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.

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, 10-, 15- and 20-year thermal warranties are available. Refer to Dow warranty certificate for complete details.

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

- www.dowbuildingsolutions.com
- www.sweets.com

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., $ft^2 \cdot h \cdot °F/Btu$, 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	3.5×10^{-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) This numerical flame spread rating is 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., $ft^2 \cdot h \cdot °F/Btu$ ($m^2 \cdot °C/W$), 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)	3.5×10^{-5} (6.3×10^{-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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Technical Information
1-866-583-BLUE (2583) (English)
1-800-363-6210 (French)

Sales Information
1-800-232-2436 (English)
1-800-565-1255 (French)

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