



# 1 PRODUCT NAME

## STYROFOAM™ ROOFMATE™ Extruded Polystyrene Insulation

### 2 Manufacturer

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

Dow Chemical Canada Inc.  
Building Solutions  
250 – 6th Ave. SW, Suite 2200  
Calgary, AB T2P 3H7  
1-866-583-BLUE (2583) (English)  
1-800-363-6210 (French)  
www.dowstyrofoam.ca/4architects

### 3 Product Description

**BASIC USE**  
STYROFOAM™ ROOFMATE™ extruded polystyrene insulation is designed for installation above waterproofing or roofing membranes in protected membrane roof (PMR) applications.

STYROFOAM 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.

#### SIZES

##### IN THE U.S.:

**Butt Edge**  
**Width and length:**  
2' x 8'  
**Thickness:**  
1", 1-1/2", 2", 2-1/2", 3",  
3-1/2", 4"

##### IN CANADA:

**Butt Edge**  
**Width and length:**  
2' x 4' (600 mm x 1,200 mm)  
**Thickness:**  
1" (25 mm)

##### Shiplap Edge

**Width and length:**  
2' x 4' (600 mm x 1,200 mm)  
**Thickness:**  
1-1/2" (40 mm), 2" (50 mm),  
2-1/2" (65 mm), 3" (75 mm),  
4" (100 mm)

Custom thicknesses are also available. Not all products are available in all parts of the United States and Canada. Contact your local Dow representative for details.

### 4 Technical Data

#### APPLICABLE STANDARDS

STYROFOAM™ 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

#### U.S. PROPERTY CHART

TABLE 1

Physical Properties of STYROFOAM™ ROOFMATE™ Insulation	
Property and Test Method	Value
Thermal Resistance per inch, ASTM C518 @ 75°F mean temp., ft <sup>2</sup> •h•°F/Btu, R-value <sup>(1)</sup> , min.	5.0
Compressive Strength <sup>(2)</sup> , ASTM D1621, psi, min.	40
Water Absorption, ASTM C272, % by volume, max.	0.1
Water Vapor Permeance <sup>(3)</sup> , ASTM E96, perm, max.	1.1
Maximum Use Temperature, °F	165
Coefficient of Linear Thermal Expansion, ASTM D696, in/in•°F	3.5 x 10 <sup>-5</sup>
Flexural Strength, ASTM C203, psi, min.	60
Dimensional Stability, ASTM D2126, % linear change, max.	2.0
Surface Burning Characteristics <sup>(4)</sup> , ASTM E84, Flame spread	5
Smoke developed	165

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

(2) Vertical compressive strength measured at 10 percent deformation or at yield, whichever occurs first. Adequate design safety factors should be used to prevent long-term creep. Contact Dow for design recommendations.

(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.

CANADA PROPERTY CHART

TABLE 2

Physical Properties of STYROFOAM™ ROOFMATE™ Insulation	
Property and Test Method	Value
Thermal Resistance per inch (25 mm), ASTM C518 @ 75°F (24°C) mean temp., ft <sup>2</sup> •h•°F/Btu (m <sup>2</sup> •°C/W), R-value (RSI) <sup>(1)</sup> , min.	5.0 (.88)
Compressive Strength <sup>(2)</sup> , ASTM D1621, psi (kPa), min.	35 (240)
Water Absorption, ASTM D2842, % by volume, max.	<0.7
Water Vapour Permeance <sup>(3)</sup> , ASTM E96, perm (ng/Pa•s•m <sup>2</sup> ), max.	0.8 (46)
Maximum Use Temperature, °F (°C)	165 (74)
Coefficient of Linear Thermal Expansion, ASTM D696, in/in•°F (mm/m•°C)	3.5 x 10 <sup>-5</sup> (6.3 x 10 <sup>-5</sup> )
Flexural Strength, ASTM C203, psi (kPa), min.	60 (415)
Dimensional Stability, ASTM D2126, at 158°F (70°C) ambient humidity, % linear change, max.	1.5

(1) R means resistance to heat flow. The higher the R-value or RSI, the greater the insulating power.  
 (2) Vertical compressive strength measured at 10 percent deformation or at yield, whichever occurs first.  
 (3) Based on 1" (25 mm) thickness.

- 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 COMPLIANCES**

STYROFOAM™ 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 local sales representative or local authorities for state/provincial and local building code requirements and related acceptances.

**PHYSICAL/CHEMICAL PROPERTIES**

STYROFOAM™ ROOFMATE™ insulation exhibits physical properties as indicated in Tables 1 and 2 when tested as represented.

For chemical resistance properties of STYROFOAM ROOFMATE insulation, see Table 3.

**ENVIRONMENTAL DATA**

STYROFOAM™ ROOFMATE™ insulation is manufactured with HCFC blowing agents, which have 94 percent less ozone depletion potential than standard CFC blowing agents.

STYROFOAM extruded polystyrene insulation products are reusable in many applications.

TABLE 3

Chemical Resistance <sup>(1)</sup> of STYROFOAM™ ROOFMATE™ Insulation	
Acid, inorganic, weak	Excellent
Acid, inorganic, strong	Excellent
Acid, organic, weak	Excellent
Acid, organic, strong	Good
Bases	Excellent
Alcohols, including isopropyl alcohol	Excellent
Methyl ethyl ketone	Not recommended
Polyglycols, including propylene glycol	Excellent
Hydrocarbons	Not recommended
Salts	Excellent
Insecticides	Not recommended
Kerosene	Poor
Mineral oil USP	Excellent
Naphtha (VMP)	Not recommended
Turpentine	Not recommended
Beer	Good
Gasoline	Not recommended
Fruit juices	Good

(1) Explanation of ratings:  
 Excellent = The plastic was unaffected for the duration of the test.  
 Good = A very slight clouding or discoloration of the plastic.  
 Poor = Considerable change in plastic during exposure, possible etching, discoloration, dimensional or weight changes.  
 Not recommended = Severe attack of the plastic. Became soft and unusable after a few hours of exposure.

NOTE: This table should be used as a guide only. For design purposes, specific test data on the intended application may be needed.

**FIRE PROTECTION**

STYROFOAM™ ROOFMATE™ insulation is 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.

---

## 5 Installation

STYROFOAM™ 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™ 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.

## 8 Maintenance

Not applicable.

## 9 Technical Services

Dow can provide technical information to help address questions when using STYROFOAM™ 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.dowstyrofoam.com/architect](http://www.dowstyrofoam.com/architect)
- [www.dowstyrofoam.ca/4architects](http://www.dowstyrofoam.ca/4architects)
- [www.sweets.com](http://www.sweets.com)

**IN THE U.S.:**

- For Technical Information: **1-866-583-BLUE (2583)**
- For Sales Information: **1-800-232-2436**

**THE DOW CHEMICAL COMPANY**

- Building Solutions • 200 Larkin • Midland, MI 48674
- [www.dowstyrofoam.com/architect](http://www.dowstyrofoam.com/architect)

**IN CANADA:**

- For Technical Information: **1-866-583-BLUE (2583)** (English); **1-800-363-6210** (French)
- For Sales Information: **1-800-232-2436** (English); **1-800-565-1255** (French)

**DOW CHEMICAL CANADA INC.**

- Building Solutions • Suite 2200 • 250 – 6th Ave. SW • Calgary, AB T2P 3H7
- [www.dowstyrofoam.ca/4architects](http://www.dowstyrofoam.ca/4architects)

NOTICE: No freedom from any patent owned by Dow or others is to be inferred. Because use conditions and applicable laws may differ from one location to another and may change with time, Customer is responsible for determining whether products and the information in this document are appropriate for Customer's use and for ensuring that Customer's workplace and disposal practices are in compliance with applicable laws and other government enactments. Dow assumes no obligation or liability for the information in this document. NO WARRANTIES ARE GIVEN; ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY EXCLUDED.

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 in the U.S. or 1-519-339-3711 in Canada.

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.

