



# STYROFOAM™ Brand DECKMATE™ Plus

## Extruded Polystyrene Foam Insulation

### 1. PRODUCT NAME

STYROFOAM™ Brand DECKMATE™ Plus  
Extruded Polystyrene Foam Insulation

### 2. MANUFACTURER

The Dow Chemical Company  
Dow Building Solutions  
200 Larkin Building, 1501 Larkin Center  
Midland, MI 48674  
1-866-583-BLUE (2583)  
Fax 1-989-832-1465

Dow Chemical Canada ULC  
Dow Building Solutions  
2400, 215 – 2 Street S.W.  
Calgary, Alberta T2P 1M4  
1-866-583-BLUE (2583) (English)  
1-800-363-6210 (French)  
dowbuildingsolutions.com

### 3. PRODUCT DESCRIPTION

#### Basic Use

STYROFOAM™ Brand DECKMATE™ Plus Extruded Polystyrene Foam Insulation is designed specifically to provide a higher compressive strength and additional membrane support for conventional low slope roof applications. STYROFOAM™ Brand DECKMATE™ Plus Insulation is an extruded polystyrene foam. The board has smooth, high density skins, with a closed cellular structure. STYROFOAM™ Brand DECKMATE™ Plus Insulation has excellent insulating characteristics (R-value of 5.0 [.88 RSI] per inch of thickness), low water absorption and excellent compressive strength.

Properties imparted by Dow's extrusion process coupled with the hydrophobic nature of polystyrene give STYROFOAM™ extruded polystyrene insulation high resistance to both water and water vapor. Durable and reusable, it exhibits dependable and predictable long-term mechanical and thermal performance, even in the most severe environments.

### 4. TECHNICAL DATA

#### Applicable Standards

STYROFOAM™ Brand DECKMATE™ Plus Insulation meets ASTM C578, Type IV – 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
- C272 – Standard Test Method for Water Absorption of Core Materials for Structural Sandwich Constructions
- E96 – Standard Test Methods for Water Vapor Transmission of Materials
- 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
- E84 – Standard Test Method for Surface Burning Characteristics of Building Materials
- CAN/ULC S701, Type 3

#### Code Compliances

STYROFOAM™ Brand DECKMATE™ Plus Insulation complies with the following codes:

- Factory Mutual Approved
- Meets IBC/IRC requirements for foam plastic insulation; see ICC-ES ESR-2142
- Underwriters Laboratories, Inc. (UL) Classified, see Classification Certificate D369
- CCMC-Evaluation listing 11420-L

#### Physical Properties

STYROFOAM™ Brand DECKMATE™ Plus Extruded Polystyrene Foam Insulation exhibits the properties and characteristics

indicated in Tables 3 and 4 when tested as represented. Do not leave STYROFOAM™ Brand DECKMATE™ Plus Extruded Polystyrene Foam Insulation exposed to direct sunlight for more than 90 days. Consult a Dow representative if exposure is expected to be longer than 90 days. Prolonged exposure to ultraviolet radiation may cause the surface of STYROFOAM™ Brand DECKMATE™ Plus Insulation to become faded and dusty. The surface degradation will have no measurable effect on the insulating value of the plastic foam unless the deterioration is allowed to continue until actual foam thickness is lost. Since the dust would impair the performance of adhesives and finishes, dusty surfaces should be brushed off before these products are applied. A light-colored, opaque protective covering should be used if excessive solar exposure is expected. 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.

#### Environmental Data

STYROFOAM™ Brand DECKMATE™ Plus Insulation is manufactured with proprietary blowing agent with zero percent ozone depletion potential.

STYROFOAM™ Brand DECKMATE™ Plus Insulation is reusable in many applications.

#### Fire Protection

STYROFOAM™ Brand DECKMATE™ Plus 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™ Brand DECKMATE™ Plus Insulation can be used over any substrate in new construction for thermal upgrading of existing roofing when reroofing is required. Roof substrate must be clean, dry, smooth and free from oil, grease, rust, frost and snow.

The roof system must be designed to meet all applicable building codes.

Flute spanability – maximum flute spanability is 1-3/4” for 1” product, 3” for 1-1/2” product, 4-3/8” for 2” product or greater.

Caution: Use a temporary white covering over dark membranes or immediately cover with pavers or stone to prevent excessive heat exposure to the foam board. Boards of STYROFOAM™ Brand DECKMATE™ Plus Insulation are easy to handle, cut and install. Contact a local Dow representative or access the literature library:

[www.dowbuildingsolutions.com](http://www.dowbuildingsolutions.com)

## 6. AVAILABILITY

STYROFOAM™ Brand DECKMATE™ Plus Insulation is manufactured in several locations across North America and is distributed through an extensive network. For more information, 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](http://www.dbswarranties.com)

## 8. MAINTENANCE

Not applicable.

## 9. TECHNICAL SERVICES

Dow can provide technical information to help address questions when using STYROFOAM™ Brand DECKMATE™ Plus 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](http://www.dowbuildingsolutions.com)

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

| Nominal Board Thickness <sup>(1)</sup> (in.) | R-Value <sup>(2)</sup> | Board Size (ft.) | Edge Treatment |
|--|------------------------|------------------|----------------|
| 2.0  | 10.0                   | 2 x 8, 4 x 8     | Square Edge    |
| 2.5  | 12.5                   | 4 x 8            | Square Edge    |
| 3.0  | 15.0                   | 2 x 8, 4 x 8     | Square Edge    |
| 4.0  | 20.0                   | 2 x 8, 4 x 8     | Square 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<sup>2</sup> • h • °F/Btu. RSI values are expressed in m<sup>2</sup>C/W. R-value determined by ASTM C518.

**TABLE 2: Canadian Sizes, R-Values and Edge Treatments for STYROFOAM™ Brand DECKMATE™ Plus Extruded Polystyrene Foam Insulation**

| Nominal Board Thickness <sup>(1)</sup> (in) | R-Value | Board Size (ft.) | Edge Treatment |
|---|---------|------------------|----------------|
| 4 in (102 mm)                               | 20.0    | 600 x 2400       | Shiplap Edge   |

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

**TABLE 3: Physical Properties (U.S.) of STYROFOAM™ Brand DECKMATE™ Plus Extruded Polystyrene Foam Insulation**

| Property and Test Method   | Value                  |
|--|------------------------|
| Thermal Resistance <sup>(1)</sup> per in., ASTM C518 @ 75°F mean temp., ft <sup>2</sup> •h•°F/Btu, R-value | 5.0                    |
| Compressive Strength <sup>(2)</sup> , ASTM D1621, psi, min.  | 25                     |
| Water Absorption, ASTM C272, % by volume, max.   | 0.3                    |
| Water Vapor Permeance <sup>(3)</sup> , ASTM E96, perm, max.  | 1.5                    |
| Maximum Operating 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.  | 50                     |
| Dimensional Stability, ASTM D2126 / CAN/ULC S701, % linear change, max.                                    | 2.0                    |
| Flame Spread <sup>(4)</sup> , ASTM E84   | 15                     |
| Smoke Developed, ASTM E84 <sup>(4)</sup>   | 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 DECKMATE™ Plus Extruded Polystyrene Foam Insulation**

| Property and Test Method  | Value   |
|---|---|
| Thermal Resistance per in. (25 mm), ASTM C518, 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 (0.87)  |
| Compressive Strength <sup>(2)</sup> , ASTM D1621, psi (kPa), min.   | 20 (140)  |
| 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.  | 1.5 (90)  |
| Maximum Use Temperature, °F (°C)  | 165 (74)  |
| Coefficient of Linear Thermal Expansion, in/in•°F (mm/m•°C)   | 3.5 x 10 <sup>-5</sup><br>(6.3 x 10 <sup>-5</sup> ) |
| Flexural Strength, ASTM C203, psi (kPa) min.  | 43.5 (300)  |
| Dimensional Stability, ASTM D2126 / CAN/ULC S701, % 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 is measured at 10 percent deformation or at yield, whichever occurs first.

(3) Based on 1" (25 mm) thickness.



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| In the U.S.<br><b>The Dow Chemical Company</b><br>Dow Building Solutions<br>200 Larkin Center<br>Midland, MI 48674 | In Canada<br><b>Dow Chemical Canada ULC</b><br><b>Dow Building Solutions</b><br>2400, 215 – 2 Street S.W.<br>Calgary, Alberta T2P 1M4 | For Technical Information:<br><b>1-866-583-BLUE</b> (2583) (English)<br><b>1-800-363-6210</b> (French)<br><br>For Sales Information:<br><b>1-800-232-2436</b> (English)<br><b>1-800-565-1255</b> (French) | <b>dowbuildingsolutions.com</b> |
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**Dow Polyurethane Foam Insulation and Sealants**

CAUTION: When cured, these products are combustible and will burn if exposed to open flame or sparks from high-energy sources. Do not expose to temperatures above 240°F (116°C). For more information, consult (Material) Safety Data Sheet (M)SDS 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. When air sealing buildings, ensure that combustion appliances, such as furnaces, water heaters, wood burning stoves, gas stoves and gas dryers are properly vented to the outside. See website: <http://www.epa.gov/iaq/homes/hip-ventilation.html>. In Canada visit: <http://archive.nrc-cnrc.gc.ca/eng/ibp/irc/bsi/83-house-ventilation.html>.

STYROFOAM™ Brand Spray Polyurethane Foam contains isocyanate, hydrofluorocarbon blowing agent and polyol. Read all the instructions and (M)SDS carefully before use. Wear protective clothing (including long sleeves), gloves, goggles and proper respiratory protection. Supplied air or an approved air-purifying respirator equipped with an organic vapor sorbent and a P100 particulate filter is required to maintain exposure levels below ACGIH, OSHA, WEEL or other applicable limits. Provide adequate ventilation. Contents under pressure. STYROFOAM™ Brand SPF should be installed by a trained SPF applicator.

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. Printed in the U.S.A.