



STYROFOAM™ BRAND DECKMATE™ PLUS TAPERED EXTRUDED POLYSTYRENE FOAM INSULATION

1. PRODUCT NAME

STYROFOAM™ Brand DECKMATE™ Plus Tapered 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 DECKMATE™ Plus Tapered Extruded Polystyrene Foam Insulation is designed to provide positive slope for drainage to improve the sustainable performance of the roof system and to meet most current building code requirements in the U.S. and Canada. This product has a higher compressive strength than other commonly used foam plastic insulations to provide additional membrane support for conventional low-slope roof applications.

STYROFOAM™ Brand DECKMATE™ Plus Tapered Insulation is a closed cell extruded polystyrene foam insulation that provides excellent insulating characteristics (R-value of 5.0 (0.88 RSI) per inch of thickness and low water absorption. Its excellent compressive strength meets CAN/ULC S701 Type 3 and ASTM C578 Type IV. Properties imparted by Dow's extrusion process, coupled with the hydrophobic nature of polystyrene give STYROFOAM™ Brand DECKMATE™ Plus Tapered 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.

SIZES

STYROFOAM™ Brand DECKMATE™ Plus Tapered Insulation panels are

2' x 8' with standard slopes of 1/8" per foot or 1/4" per foot. However, almost any slope you specify can be accommodated by Dow-approved fabricators.

4. TECHNICAL DATA

APPLICABLE STANDARDS

ASTM International

- 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

- ASTM E 96 – Standard Test Method for Water Vapor Transmission of Materials
- ASTM C 203 – Standard Test Method for Breaking Load and Flexural Properties of Block Type Thermal Insulation
- ASTM D 2126 – Standard Test Method for Response of Rigid Cellular Plastics to Thermal and Humid Aging
- ASTM E 84 – Standard Test Method for Surface Burning Characteristics of Building Materials

TABLE 1: PHYSICAL PROPERTIES (U.S.) OF STYROFOAM™ BRAND DECKMATE™ PLUS TAPERED INSULATION

PROPERTY AND TEST METHOD	VALUE
Thermal Resistance ⁽¹⁾ per in. ASTM C518 @ 75°F mean temp., ft ² •h•°F/Btu, R-value per inch, min	5.0
Compressive Strength ⁽²⁾ , ASTM D1621, psi, min.	25
Water Absorption, ASTM C272, % by volume, max.	0.3
Water Vapor Permeance ⁽³⁾ , 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 ⁻⁵
Flexural Strength, ASTM C203, psi min.	50
Dimensional Stability, ASTM D2126, % linear change, max.	2.0
Flame Spread ⁽⁴⁾ , ASTM E84	15
Smoke Developed ⁽⁴⁾ , ASTM E84	165

(1) Values are consistent with the criteria of ASTM C578 and the FTC R-value rule (16 CFR Part 460). 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 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" thickness.

(4) These numerical flame spread and smoke developed ratings are not intended to reflect hazards represented by this or any other material under actual fire conditions.

TABLE 2: PHYSICAL PROPERTIES (CANADIAN) OF STYROFOAM™ BRAND DECKMATE™ PLUS TAPERED 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⁾ per inch, min.	5.0 (.88)
Compressive Strength ⁽²⁾ , ASTM D1621, psi (kPa), min.	20 (140)
Water Absorption, ASTM D2842, % by volume, max.	0.7
Water Vapour Permeance ⁽³⁾ , ASTM E96, perm (ng/Pa•s•m ²), max.	1.5 (86)
Maximum Operating 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.	43.5 (300)
Dimensional Stability, max., ASTM D2126, % linear change, max.	1.5
Flame Spread ⁽⁴⁾ , ULC S 102.2, CAN/ULC S102.2	145 - 220

(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.

(4) This numerical flame spread rating is not intended to reflect hazards represented by this or any other material under actual fire conditions.

CODE COMPLIANCE

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

- Underwriters Laboratories, Inc. (UL) Classified, see Classification Certificate D369

PHYSICAL PROPERTIES

STYROFOAM™ Brand DECKMATE™ Plus Tapered Extruded Polystyrene Insulation exhibits the properties and characteristics indicated in Tables 1 and 2 when tested as represented.

Exposure to ultraviolet radiation in sunlight for several weeks will cause the surface of STYROFOAM™ Brand Extruded Polystyrene Foam Insulation to become yellow and dusty. A light-colored, opaque protective covering should be used if excessive solar exposure is expected. 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, the dusty surface should be brushed off before these products are applied.

ENVIRONMENTAL DATA

STYROFOAM™ Brand DECKMATE™ Plus Tapered Extruded Polystyrene Foam Insulation is hydrochlorofluorocarbon (HCFC) free with zero ozone-depletion potential. STYROFOAM™ Brand DECKMATE™ Plus Tapered Insulation is reusable in many applications.

FIRE PROTECTION

STYROFOAM™ Brand DECKMATE™ Plus Tapered Insulation is combustible and shall only be used as specified by the local building code with respect to flame spread classification and to the use of a suitable 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 Tapered Insulation can be used over any conventional substrate in new construction or for thermal upgrading of existing roofing when reroofing is required. Roof substrate must be clean, dry, smooth and free from oil, grease, rust, standing water, frost and snow. Detailed tapered layouts are available to describe how the insulation is to be installed.

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

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

Boards of STYROFOAM™ Brand Extruded Polystyrene Foam Insulation are easy to handle, cut and install. Visit www.dowbuildingsolutions.com or contact a local Dow representative for more specific instructions.

6. AVAILABILITY

An established network of Dow-approved fabricators is available to provide design assistance, customer layouts, shop drawings and quotations for each application. Equally important, fabricators are geographically located assuring immediate service and as-promised delivery. When delivered, the tapered panels arrive on-site securely packaged and clearly identified.

7. WARRANTY

LIMITED THERMAL WARRANTY – U.S. ONLY

A limited warranty is available that covers thermal resistance retention of STYROFOAM™ Brand DECKMATE™ Plus Tapered Insulation when used below sheet membranes. Refer to the 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 Extruded Polystyrene Foam Insulation. For technical assistance, call:
 U.S.: 1-866-583-BLUE (2583)
 Canada: 1-800-583-BLUE (2583)
 1-800-363-6210 (French)

10. FILING SYSTEMS

- www.dowbuildingsolutions.com
- www.CMDFirstSource.com
- www.specSource.com

www.dowbuildingsolutions.com

Technical Information
 1-866-583-BLUE (2583) (English)
 1-800-363-6210 (French)

Sales Information
 1-800-232-2436 (English)
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Dow has manufactured STYROFOAM™ Brand Extruded Polystyrene Foam Insulation for use in construction and specialty applications for more than 60 years. Its dense closed-cell structure gives STYROFOAM™ Brand Extruded Polystyrene Foam Insulation excellent moisture resistance, long-term thermal performance and compressive strength. STYROFOAM™ Brand Extruded Polystyrene Foam Insulation is reusable in many applications.

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 EXPRESS WARRANTIES ARE GIVEN EXCEPT FOR ANY APPLICABLE WRITTEN WARRANTIES SPECIFICALLY PROVIDED BY DOW. ALL IMPLIED WARRANTIES INCLUDING THOSE OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY EXCLUDED.

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.

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.

