



STYROFOAM™ Brand DECKMATE™ Plus FA

Extruded Polystyrene Foam Insulation

1. PRODUCT NAME

STYROFOAM™ Brand DECKMATE™ Plus FA
Extruded Polystyrene Foam Insulation

2. MANUFACTURER

The Dow Chemical Company
Dow Building Solutions
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1-866-583-BLUE (2583) (English)
1-800-363-6210 (French)

www.dowbuildingsolutions.com

3. PRODUCT DESCRIPTION

STYROFOAM™ Brand DECKMATE™ Plus FA Foam Insulation is an extruded polystyrene foam insulation with a planed surface. It has excellent insulating characteristics, high resistance to water and water vapor, excellent freeze-thaw resistance, exceptional compressive strength and long-term durability.

Basic Use

STYROFOAM™ Brand DECKMATE™ Plus FA Foam Insulation is designed for use in fully adhered conventional low-slope roof applications. Available in flat and tapered board stock (see Table 3 for slopes of tapered panels), the rigid foam insulation boards can be installed directly on structural steel decks beneath a non-bituminous sheet membrane, eliminating the need for a thermal barrier.

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

Nominal Board Thickness ⁽¹⁾ (in.)	R-Value ⁽²⁾	Board Size (ft.)	Edge Treatment
1.5	7.5	2 x 8	Square Edge
2.0	10.0	2 x 8	Square Edge
2.5	12.5	2 x 8	Square Edge
3.0	15.0	2 x 8	Square Edge
4.0	20.0	2 x 8	Square Edge

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

⁽²⁾ Aged R-value at 1" of cured foam @ 75°F mean temperature. R-value expressed in ft²•h•°F/Btu. R-value determined by ASTM C518 using the aging process in ASTM C1289 (90 days @ 140°F).

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

Nominal Board Thickness ⁽¹⁾ (mm)	R-Value	Board Size (mm)	Edge Treatment
40	7.5	600 x 2400	Shiplap Edge
50	10.0	600 x 2400	Shiplap Edge
65	12.5	600 x 2400	Shiplap Edge
75	15.0	600 x 2400	Shiplap Edge
100	20.0	600 x 2400	Shiplap Edge

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

4. TECHNICAL DATA

Applicable Standards

STYROFOAM™ Brand DECKMATE™ Plus FA Foam Insulation meets ASTM C578, Type IV – Standard Specification for Rigid Cellular Polystyrene Thermal Insulation, which includes:

- 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
- D2842 – Standard Test Method for Water Absorption of Rigid Cellular Plastics
- CAN/ULC S701, Type 3

Physical Properties

STYROFOAM™ Brand DECKMATE™ Plus FA Foam Insulation exhibits physical properties as indicated in Tables 5 and 6 when tested as represented.

Environmental Data

STYROFOAM™ Brand DECKMATE™ Plus FA Foam Insulation is hydrochlorofluorocarbon (HCFC) free with zero ozone depletion potential.

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

Fire Protection

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

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

TABLE 3: Slopes for STYROFOAM™ Brand DECKMATE™ Plus FA Extruded Polystyrene Foam Insulation

	A	B	C	D
1/8" Slope Nominal Board Thickness, in.	1/2-3/4	3/4-1	1-1 1/4	1 1/4-1 1/2
	E	F		
1/4" Slope Nominal Board Thickness, in.	1/2-1	1-1 1/2		
	G			
1/2" Slope Nominal Board Thickness, in.	1/2-1 1/2			

TABLE 4: Wind Uplift Approvals for STYROFOAM™ Brand DECKMATE™ Plus FA Extruded Polystyrene Foam Insulation Adhered to the Deck with INSTA STIK QUIK™ Set Adhesive

Approval Type	Factory Mutual (FM)	Underwriters Laboratories, Inc. (UL)
Assembly or File #s	229668, 229702, 229710, 229714, 229715, 229716, 229717, 229719, 229721, 229722	TGIK.R14769, TGIK.R3573
Cover Type	Single-Ply: Firestone Building Products Company, LLC	Any fully adhered single-ply, hot mopped or torch applied modified bitumen membrane system, hot mopped or cold applied built-up system
Coverboard/Insulation	DensDeck Prime adhered to STYROFOAM™ Brand DECKMATE™ Plus FA	DensDeck Prime, DensDeck, USG Securock or other manufactured types of gypsum board adhered to STYROFOAM™ Brand DECKMATE™ Plus FA
Adhesive Type	INSTA STIK™ Quik Set applied in 3/4" to 1" ribbon beads	INSTA STIK™ Quik Set applied in 3/4" to 1" ribbon beads
Deck Type	Concrete	Steel, Concrete

5. INSTALLATION

STYROFOAM™ Brand DECKMATE™ Plus FA Foam Insulation can be used over any substrate in new construction or 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.

Boards of STYROFOAM™ Brand DECKMATE™ Plus FA Foam Insulation are easy to handle, cut and install. For more specific instructions, contact a local Dow representative or access the literature library: www.dowbuildingsolutions.com

6. AVAILABILITY

STYROFOAM™ Brand DECKMATE™ Plus FA Foam Insulation is manufactured in several locations across North America and is distributed through an extensive network of roofing distributors. 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™ 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 DECKMATE™ Plus FA Foam 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 5: Physical Properties (U.S.) of STYROFOAM™ Brand DECKMATE™ Plus FA 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.	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 ⁽⁵⁾ , ASTM D2126, % linear change, max.	2.0
Flame Spread ⁽⁴⁾ , ASTM E84	15
Smoke Developed, ASTM E84 ⁽⁴⁾	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.

⁽⁵⁾ Tested at 158°F/97% RH/7 days.

TABLE 6: Physical Properties (Canadian) of STYROFOAM™ Brand DECKMATE™ Plus FA 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 (0.88)
Compressive Strength ⁽²⁾ , ASTM D1621, psi (kPa), min.	25 (170)
Water Absorption, ASTM D2842, % by volume, max.	0.9
Water Vapour Permeance ⁽³⁾ , ASTM E96, perm (ng/Pa•s•m ²), 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 ⁻⁵ (6.3 x 10 ⁻²)
Flexural Strength, ASTM C203, psi (kPa) min.	50 (350)
Dimensional Stability ⁽⁴⁾ , ASTM D2126, % 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.

⁽⁴⁾ Tested at 70°C/ambient RH/7 days.



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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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