



1 PRODUCT NAME

STYROFOAM DECKMATE

Extruded Polystyrene Insulation

2 Manufacturer

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

Dow Chemical Canada Inc.
Building Materials
1086 Modeland Rd.
Sarnia, ON N7T 7K7
1-866-583-BLUE (2583) (English)
1-800-363-6210 (French)
www.dowstyrofoam.ca/4architects

3 Product Description

STYROFOAM* DECKMATE* insulation is an extruded polystyrene insulation with smooth, high-density skins. It has excellent insulating characteristics, high resistance to water and water vapor, excellent freeze-thaw resistance, superior compressive strength and long-term durability.

BASIC USE

STYROFOAM DECKMATE insulation is designed for use in conventional low-slope roof applications. The rigid foam insulation boards can be installed directly on structural steel decks beneath a sheet membrane or a standing seam metal roof, eliminating the need for a thermal barrier.

U.S. SIZES

Thickness:

- 1"
- 1.5"
- 2"
- 2.5"
- 3"
- 4"

Board size:

- 2' x 8'
- 4' x 8'

Edge treatment:

- Square edge

CANADA SIZES

Thickness:

- 1" (25 mm)
- 1.5" (40 mm)
- 2" (50 mm)
- 2.5" (65 mm)
- 3" (75 mm)
- 4" (100 mm)
- 5" (125 mm)

Board size:

- 2' x 8' (600 mm x 2400 mm)

Edge treatment:

- Shiplap edge

Not all sizes are available in all areas. Contact your Dow representative for details.

4 Technical Data

APPLICABLE STANDARDS

STYROFOAM DECKMATE insulation meets ASTM C578-01, Type X – Standard Specification for Rigid Cellular Polystyrene Thermal Insulation, which includes:

- ASTM C518 – Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus

- ASTM D1621 – Standard Test Method for Compressive Properties of Rigid Cellular Plastics
- ASTM C272 – Standard Test Method for Water Absorption of Core Materials for Structural Sandwich Constructions
- ASTM E96 – Standard Test Methods for Water Vapor Transmission of Materials
- ASTM C203 – Standard Test Methods for Breaking Load and Flexural Properties of Block-Type Thermal Insulation
- ASTM D2126 – Standard Test Method for Response of Rigid Cellular Plastics to Thermal and Humid Aging
- ASTM D2842 – Standard Test Method for Water Absorption of Rigid Cellular Plastics
- CAN/ULC S701, Type 2

CODE COMPLIANCES

STYROFOAM DECKMATE insulation complies with the following codes:

- Meets IBC/IRC requirements for foam plastic insulation; see NES NER 699
- ICBO-ES ER 2257
- ICBO-ES ER 5155
- 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 #12085-L

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U.S. PROPERTY CHART

TABLE 1

Physical Properties of STYROFOAM DECKMATE Insulation	
Property and Test Method	Value
Thermal Resistance per inch, ASTM C518 @ 75°F mean temp., ft ² •h•°F/Btu, min., R-value ⁽¹⁾	5.0
Compressive Strength ⁽²⁾ , ASTM D1621, psi, min.	18
Water Absorption, ASTM C272, % by volume, max.	0.1
Water Vapor Permeance ⁽³⁾ , max., ASTM E96, perm	1.1
Maximum Operating Temperature, °F	165
Coefficient of Linear Thermal Expansion, in/in•°F	3.5 x 10 ⁻⁵
Flexural Strength, ASTM C203, psi, min.	40
Dimensional Stability, ASTM D2126, % linear change, max.	2.0
Flame Spread ⁽⁴⁾ , ASTM E84	5
Smoke Development, ASTM E84	165

(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" 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 DECKMATE Insulation	
Property and Test Method	Value
Thermal Resistance per inch (25 mm), ASTM C518 @ 75°F (24°C) mean temp., ft ² •h•°F/Btu, (m ² •°C/W), min., R-value (RSI) ⁽¹⁾	5.0 (.88)
Compressive Strength ⁽²⁾ , ASTM D1621, psi (kPa), min.	16 (110)
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.	35 (240)
Dimensional Stability, 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.

TABLE 3

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

PHYSICAL/CHEMICAL PROPERTIES

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

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

Exposure to ultraviolet radiation in sunlight for several weeks will cause the surface of STYROFOAM DECKMATE 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 DECKMATE insulation is manufactured with HCFC blowing agents, which have 94 percent less ozone depletion potential than standard CFC blowing agents.

STYROFOAM DECKMATE insulation is reusable in many applications and can be recycled.

FIRE PROTECTION

STYROFOAM DECKMATE 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 DECKMATE 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.

Boards of STYROFOAM DECKMATE insulation are easy to handle, cut and install. For more specific instructions, contact a local Dow representative or access the literature library: www.dowstyrofoam.com/architect (U.S.) www.dowstyrofoam.ca/4architects (Canada)

6 Availability

STYROFOAM DECKMATE insulation is manufactured in several locations across North America and is distributed through an extensive network of roofing distributors. For more information, consult the nearest Dow sales office or call 1-800-232-2436.

7 Warranty

A limited warranty is available in the United States that covers the thermal resistance retention of STYROFOAM DECKMATE insulation. 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 DECKMATE insulation. Technical personnel are available at Dow sales offices 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 (U.S.)
- www.dowstyrofoam.ca/4architects (Canada)
- 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 & Construction • 200 Larkin • Midland, MI 48674
- 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 & Construction • 1086 Modeland Rd. • Sarnia, ON N7T 7K7
- www.dowstyrofoam.ca/4architects**

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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 insulation or housewrap 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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