



# 1 PRODUCT NAME STYROFOAM™ CAVITYMATE™ Ultra Extruded Polystyrene Insulation

## 2 Manufacturer

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## 3 Product Description

### BASIC USE

STYROFOAM™ CAVITYMATE™ Ultra insulation is a moisture-resistant, durable and lightweight extruded polystyrene foam board specifically designed for use in wet cavity wall environments. Manufactured with a unique patented carbon black technology, STYROFOAM CAVITYMATE Ultra insulation features an R-value of 5.6 per inch (RSI of 0.97 per 25 mm)\*, the highest of all STYROFOAM extruded polystyrene insulation products. Its closed-cell structure provides superior long-term thermal performance and moisture control.

Sized to fit snugly between wall ties, STYROFOAM CAVITYMATE Ultra insulation can save time and money on the job site.

### SIZES

#### IN THE U.S.:

**Square Edge**  
**Width and length:**  
16" x 96"  
**Thickness:**  
1-3/4", 2-1/8"

#### IN CANADA:

**Butt Edge**  
**Width and length:**  
400 mm x 2,400 mm  
**Thickness:**  
55 mm, 68 mm, 75 mm, 91 mm

**Shiplap Edge**  
**Width and length:**  
600 mm x 2,400 mm  
**Thickness:**  
55 mm, 68 mm, 75 mm

Not all products are available in all areas. Consult your Dow representative about other sizes and lead-time requirements.

## 4 Technical Data

### APPLICABLE STANDARDS

STYROFOAM™ CAVITYMATE™ Ultra insulation meets ASTM C578 Type IV – Standard Specification for Rigid Cellular Polystyrene 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

- E96 – Standard Test Methods for Water Vapor Transmission of Materials
- D696 – Standard Test Method for Coefficient of 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
- D2842 – Standard Test Method for Water Absorption of Rigid Cellular Plastics
- CAN/ULC S701 Type 3

### CODE COMPLIANCE

STYROFOAM™ CAVITYMATE™ Ultra insulation complies with the following codes:

- Meets IBC/IRC requirements for foam plastic insulation; see ICC-ES NER-699
- BOCA-ES RR 21-02
- Underwriters Laboratories, Inc. (UL) Classified, see Classification Certificate D369
- National Building Code of Canada
- CCMC – Evaluation Listing #12793-L

Contact your Dow sales representative or local authorities for state/provincial and local building code requirements and related acceptances.

STYROFOAM CAVITYMATE Ultra Extruded Polystyrene Insulation

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\*Aged R-value (RSI) at 75°F (24°C) mean temp. R means resistance to heat flow. The higher the R-value or RSI, the greater the insulating power. Refer to Tables 1 and 2 for thermal resistance at other mean temperatures.

U.S. PROPERTY CHART

TABLE 1

Physical Properties of STYROFOAM™ CAVITYMATE™ Ultra Insulation	
Property and Test Method	Value
Thermal Resistance, per inch, ASTM C518, ft <sup>2</sup> •h•°F/Btu, aged R-value <sup>(1)</sup> , min. @ 75°F mean temp. @ 40°F mean temp. @ 25°F mean temp.	5.6 5.8 6.0
Compressive Strength <sup>(2)</sup> , ASTM D1621, psi, min.	25
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.	50
Flame Spread <sup>(4)</sup> , ASTM E84	10
Smoke Developed, ASTM E84	160

- (1) Values are consistent with the criteria of ASTM C578 and the FTC R-value rule (16 CFR Part 460).
- (2) Vertical compressive strength is measured at 10 percent deformation or yield, whichever occurs first. Since STYROFOAM extruded polystyrene 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) 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™ CAVITYMATE™ Ultra Insulation	
Property and Test Method	Value
Thermal Resistance, per inch, ASTM C518, ft <sup>2</sup> •h•°F/Btu, aged R-value <sup>(1)</sup> , min. @ 75°F (24°C) mean temp. @ 40°F (4°C) mean temp. @ 25°F (-4°C) mean temp.	5.6 (0.99) 5.8 (1.02) 6.0 (1.06)
Compressive Strength <sup>(2)</sup> , ASTM D1621, psi (kPa), min.	25 (170)
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, ASTM D696, in/in•°F (mm/m•°C)	3.5 x 10 <sup>-5</sup> (6.3 x 10 <sup>-2</sup> )
Flexural Strength, ASTM C203, psi (kPa), min.	43 (300)

- (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 extruded polystyrene 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.

PHYSICAL/CHEMICAL PROPERTIES

STYROFOAM™ CAVITYMATE™ Ultra insulation exhibits the properties and characteristics indicated in Tables 1 and 2 when tested as represented.

Prolonged exposure to ultraviolet radiation may cause the surface of STYROFOAM CAVITYMATE Ultra insulation to become faded 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.

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

ENVIRONMENTAL DATA

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

STYROFOAM CAVITYMATE Ultra insulation is reusable in many applications.

FIRE PROTECTION

STYROFOAM™ CAVITYMATE™ Ultra 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. In an emergency, call 1-989-636-4400 in the U.S. or 1-519-339-3711 in Canada.

## 5 Installation

Boards of STYROFOAM™ CAVITYMATE™ Ultra insulation are easy to handle, cut and install. Contact a local Dow representative or access the literature library at [www.dowstyrofoam.com/architect](http://www.dowstyrofoam.com/architect) or [www.dowstyrofoam.ca/4architects](http://www.dowstyrofoam.ca/4architects) for more specific instructions.

## 6 Availability

STYROFOAM™ CAVITYMATE™ Ultra 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 30-year limited thermal warranty is available. 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™ CAVITYMATE™ Ultra 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)

TABLE 3

Chemical Resistance <sup>(1)</sup> of STYROFOAM™ CAVITYMATE™ Ultra 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.  
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.

**IN THE U.S.:**

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

**THE DOW CHEMICAL COMPANY**

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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 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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