



STYROFOAM™ Brand CAVITYMATE™ Ultra Extruded Polystyrene Foam Insulation

1. PRODUCT NAME

STYROFOAM™ Brand CAVITYMATE™ Ultra Extruded Polystyrene Foam Insulation

2. MANUFACTURER

The Dow Chemical Company
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1-866-583-BLUE (2583)
Fax 1-989-832-1465

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1-866-583-BLUE (2583) (English)
1-800-363-6210 (French)
www.dowbuildingsolutions.com
www.ultrawallsystem.com

3. PRODUCT DESCRIPTION

BASIC USE

STYROFOAM™ Brand 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 patented carbon black technology, STYROFOAM™ Brand CAVITYMATE™ Ultra Insulation features an R-value of 5.6 per inch (RSI of 0.97 per 25 mm)*, the highest of all extruded polystyrene foam insulation products. Its closed cell structure provides advanced long-term thermal performance and moisture control.

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

4. TECHNICAL DATA

Applicable Standards

STYROFOAM™ Brand CAVITYMATE™ Ultra Insulation meets ASTM C578 Type IV and CAN/ULC S-701-05 Type 3 – 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™ Brand CAVITYMATE™ Ultra Insulation complies with the following codes:

- Meets IBC/IRC requirements for foam plastic insulation; see ICC-ES ESR 2142
- BOCA-ES RR 21-02
- Underwriters Laboratories, Inc.
- (UL) Classified, see Classification Certificate D369
- National Building Code of Canada
- CCMC – Evaluation Listing #11420-L

TABLE 1: U.S. Sizes, R-values and edge treatments for STYROFOAM™ Brand CAVITYMATE™ Ultra Extruded Polystyrene Foam Insulation

Nominal Board Thickness(1), in	R-value (2)	Ultra air barrier wall system Board Size, IN	Board Size, IN	Edge Treatment
1.75	10.0	15 3/4" x 96"	16" x 96"	Square Edge
2.18	12.0	15 3/4" x 96"	16" x 96"	Square Edge
2.5	14.0	15 3/4" x 96"	16" x 96"	Square Edge
3.0	16.8	15 3/4" x 96"	16" x 96"	Square Edge

(1) Not to be considered sales specifications.

(2) R means resistance to heat flow. The higher the R-value, the greater the insulating power. R-values are expressed in ft²•h•°F/Btu. R-value determined by ASTM C518.

TABLE 2: Canadian Sizes, R-values and edge treatments for STYROFOAM™ Brand CAVITYMATE™ Ultra Extruded Polystyrene Foam Insulation

Nominal Board Thickness(1), in	R-value (2)	Board Size, IN	Edge Treatment
75	16.5	400 × 2400	Butt Edge
91	20.0	400 × 2400	Butt Edge
75	16.5	600 × 2400	Butt Edge

(1) Additional thicknesses available. Contact your Dow representative for more information. Not all thicknesses available in all regions.

(2) R means resistance to heat flow. The higher the R-value or RSI (R-Value Système International), the greater the insulating power. R-values are expressed in ft²•h•°F/Btu. RSI values are expressed in m²•C/W. R-value determined by ASTM C518

*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 3 and 4 for thermal resistance at other mean temperatures

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

PHYSICAL PROPERTIES

STYROFOAM™ Brand CAVITYMATE™ Ultra Insulation exhibits the properties and characteristics indicated in Tables 3 and 4 when tested as represented.

Do not leave STYROFOAM™ Brand CAVITYMATE™ Ultra 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 CAVITYMATE™ Ultra 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 CAVITYMATE™ Ultra Insulation is hydrochlorofluorocarbon (HCFC) free with zero ozone-depletion potential. STYROFOAM™ Brand CAVITYMATE™ Extruded Polystyrene Foam Insulation is reusable in many applications.

Fire information

CAVITYMATE™ Ultra 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.

5. INSTALLATION

Boards of STYROFOAM™ Brand CAVITYMATE™ Ultra Insulation are easy to handle, cut and install. Contact a local Dow representative or access the literature library at www.dowbuildingsolutions.com for more specific instructions.

6. AVAILABILITY

STYROFOAM™ Brand 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

Dow can provide technical information to help address questions when using STYROFOAM™ Brand SPF Insulation (CM Series). Technical personnel are available to assist with any insulation project. Call 1-866-583-BLUE (2583).

8. MAINTENANCE

Not applicable.

9. TECHNICAL SERVICES

Dow can provide technical information to help address questions when using STYROFOAM™ Brand 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.dowbuildingsolutions.com
- www.ultrawallsystem.com

TABLE 3: Physical properties (U.S.) of STYROFOAM™ Brand CAVITYMATE™ Ultra Extruded Polystyrene Foam Insulation

Property and Test Method	Value				
Thermal Resistance per in. ASTM C518, ft ² •h•°F/Btu, R-value ⁽¹⁾ , min. @ 75°F mean temp. @ 40°F mean temp. @ 25°F mean temp	1.75"	2.125"	2.5"	3.0"	
	10.0	12.0	14.0	16.8	
	10.8	13.0	15.0	18.0	
	11.2	13.4	15.8	18.9	
Compressive Strength ⁽²⁾ ASTM D1621, psi, min.	25				
Water Absorption, ASTM C272, % by volume, max	0.3				
Water Vapor Permeance, ASTM E96, perm, max.	1.0"	1.75"	2.125"	2.5"	3.0"
	1.5	1.1	0.9	0.8	0.8
Maximum Use Temperature, °F	165				
Coefficient of Linear Thermal Expansion, ASTM D696, in/in•°F	3.5 × 10 ⁻⁵				
Flexural Strength, ASTM C203, psi, min.	50				
Flame Spread ⁽³⁾ , ASTM E84	0				
Smoke Developed, ASTM E84 ⁽³⁾	155				

(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™ 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) 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 CAVITYMATE™ Ultra Extruded Polystyrene Foam Insulation

Property and Test Method	Value
Thermal Resistance per in. (25 mm), ASTM C518, ft ² •h•°F/Btu (m ² •°C/W), R-value (RSI)(1), min. @ 75°F mean temp. @ 40°F mean temp. @ 25°F mean temp	5.6 (0.97)
	6.0 (1.04)
	6.3 (1.09)
Compressive Strength ⁽²⁾ , ASTM D1621, psi (kPa), min.	25 (170)
Water Absorption, ASTM C272, % by volume, max	0.7
Water Vapour Permeance ⁽³⁾ , ASTM E96, perm (ng/Pa•s•m ²), max.	1.5 (90)
Maximum Use Temperature, °F (°C)	165 (73.8)
Coefficient of Linear Thermal Expansion, ASTM D696, in/in•°F (mm/m•°C)	3.5 × 10 ⁻⁵
	6.3 × 10 ⁻²
Flexural Strength, ASTM C203, psi, min.	43.5 (300)

(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™ 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) 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.



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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.