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
Dow Building Solutions
200 Larkin Center, 1605 Joseph Drive
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
1-800-363-6210 (French)
1-866-583-BLUE (2583) (English)
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
Polyisocyanurate 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

<table>
<thead>
<tr>
<th>Nominal Board Thickness(1), IN</th>
<th>R-value(2)</th>
<th>Ultra Air Barrier Wall System Board Size, IN</th>
<th>Board Size, IN</th>
<th>Edge Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.75</td>
<td>10.0</td>
<td>15 3/4” x 96”</td>
<td>16” x 96”</td>
<td>Square Edge</td>
</tr>
<tr>
<td>2.18</td>
<td>12.0</td>
<td>15 3/4” x 96”</td>
<td>16” x 96”</td>
<td>Square Edge</td>
</tr>
<tr>
<td>2.5</td>
<td>14.0</td>
<td>15 3/4” x 96”</td>
<td>16” x 96”</td>
<td>Square Edge</td>
</tr>
<tr>
<td>3.0</td>
<td>16.8</td>
<td>15 3/4” x 96”</td>
<td>16” x 96”</td>
<td>Square Edge</td>
</tr>
</tbody>
</table>

(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

<table>
<thead>
<tr>
<th>Nominal Board Thickness(1), IN</th>
<th>R-value(3)</th>
<th>Board Size, IN</th>
<th>Edge Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>75</td>
<td>16.5</td>
<td>400 x 2400</td>
<td>Butt Edge</td>
</tr>
<tr>
<td>91</td>
<td>20.0</td>
<td>400 x 2400</td>
<td>Butt Edge</td>
</tr>
<tr>
<td>75</td>
<td>16.5</td>
<td>600 x 2400</td>
<td>Butt Edge</td>
</tr>
</tbody>
</table>

(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 System 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.

* 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

<table>
<thead>
<tr>
<th>Property and Test Method</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Thermal Resistance per in. (25 mm), ASTM C518, ft²·h·°F/Btu (m²·°C/W), R-value (RSI)(1), min.</strong></td>
<td>1.75*</td>
</tr>
<tr>
<td>@ 75°F mean temp.</td>
<td>10.0</td>
</tr>
<tr>
<td>@ 40°F mean temp.</td>
<td>10.8</td>
</tr>
<tr>
<td>@ 25°F mean temp</td>
<td>11.2</td>
</tr>
<tr>
<td>Compressive Strength(2), ASTM D1621, psi, min.</td>
<td>25</td>
</tr>
<tr>
<td>Water Absorption, ASTM C272, % by volume, max</td>
<td>0.3</td>
</tr>
<tr>
<td>Water Vapor Permeance, ASTM E96, perm, max.</td>
<td>1.0*</td>
</tr>
<tr>
<td>Maximum Use Temperature, °F</td>
<td>165</td>
</tr>
<tr>
<td>Coefficient of Linear Thermal Expansion, ASTM D696, in/in•°F</td>
<td>3.5 x 10^{-5}</td>
</tr>
<tr>
<td>Flexural Strength, ASTM C203, psi, min.</td>
<td>50</td>
</tr>
<tr>
<td>Smoke Developed, ASTM E84(3)</td>
<td>0</td>
</tr>
</tbody>
</table>

(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

<table>
<thead>
<tr>
<th>Property and Test Method</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Thermal Resistance per in. (25 mm), ASTM C518, ft²·h·°F/Btu (m²·°C/W), R-value (RSI)(1), min.</strong></td>
<td>5.6 (0.97)</td>
</tr>
<tr>
<td>@ 75°F mean temp.</td>
<td>6.0 (1.04)</td>
</tr>
<tr>
<td>@ 40°F mean temp.</td>
<td>6.3 (1.09)</td>
</tr>
<tr>
<td>Compressive Strength(2), ASTM D1621, psi (kPa), min.</td>
<td>25 (170)</td>
</tr>
<tr>
<td>Water Absorption, ASTM C272, % by volume, max</td>
<td>0.7</td>
</tr>
<tr>
<td>Water Vapour Permeance(3), ASTM E96, perm (ng/Pa·s·m²), max.</td>
<td>1.5 (90)</td>
</tr>
<tr>
<td>Maximum Use Temperature, °F (°C)</td>
<td>165 (73.8)</td>
</tr>
<tr>
<td>Coefficient of Linear Thermal Expansion, ASTM D696, in/in•°F (mm/m•°C)</td>
<td>3.5 x 10^{-5}</td>
</tr>
<tr>
<td>Flexural Strength, ASTM C203, psi, min.</td>
<td>43.5 (300)</td>
</tr>
</tbody>
</table>

(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 (MSDS) or 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/8p/irc/tis/83-house-ventilation.html.

STYROFOAM™ Brand Polyurethane Foam contains isocyanate, hydrofluorocarbon blowing agent and polyol. Read all the instructions and (MSDS) 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.