1. PRODUCT NAME
STYROFOAM™ Brand Ultra SL Extruded Polystyrene Foam Insulation

2. MANUFACTURER
The Dow Chemical Company
Dow Building Solutions
200 Larkin
Midland, MI 48674
1-866-583-BLUE (2583)
Fax 1-989-832-1465

3. PRODUCT DESCRIPTION
Basic Use
STYROFOAM™ Brand Ultra SL Insulation is a moisture-resistant, durable and lightweight extruded polystyrene foam board with shiplap edges designed specifically to be used as a continuous insulation (ci) and installed over block, concrete or metal stud backup behind masonry or stone veneers. Manufactured with a patented carbon-black technology, STYROFOAM™ Brand Ultra SL Insulation features an R-value of 5.6 per inch (R5.6/R5.6) per 25 mm, the highest of all extruded polystyrene foam insulation products. Its closed-cell structure offers advanced long-term thermal performance and moisture control. STYROFOAM™ Brand Ultra SL Insulation with shiplap edges maximizes the thermal performance of the wall assembly.

When tested with LIQUIDARMOR™ Flashing & Sealant or GREAT STUFF PRO™ Insulating Foam Sealant around joint treatments, penetrations and transitions, STYROFOAM™ Brand Ultra SL Insulation meets the following standards:
- ASTM E2357 Air Barrier Assembly Test
- ASTM E2178 Air Barrier Assembly Test
- ASTM E331 Water Penetration Test for Block and Steel Stud — Passed
- Approved as an air barrier assembly by the Air Barrier Association of America (ABAA)
- Meets NFPA requirements

4. TECHNICAL DATA
Applicable Standards
STYROFOAM™ Brand Ultra SL Insulation meets ASTM C578 Type IV Standard Specification for Rigid Cellular Polystyrene Insulation. Applicable standards include:
- D1621 — Standard Test Method for Compressive Properties of Rigid Cellular Plastics
- 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

When tested with LIQUIDARMOR™ Flashing & Sealant or GREAT STUFF PRO™ Insulating Foam Sealant around joint treatments, penetrations and transitions, STYROFOAM™ Brand Ultra SL Insulation meets 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

Code Compliance
STYROFOAM™ Brand Ultra SL 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

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

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

<table>
<thead>
<tr>
<th>Nominal Board Thickness, 1 in.</th>
<th>R-Value 2</th>
<th>Board Size, 3 in.</th>
<th>Edge Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.75</td>
<td>10.0</td>
<td>4’ x 8’</td>
<td>8’ Shiplap</td>
</tr>
<tr>
<td>2.125</td>
<td>12.0</td>
<td>4’ x 8’</td>
<td>8’ Shiplap</td>
</tr>
<tr>
<td>2.5</td>
<td>14.0</td>
<td>4’ x 8’</td>
<td>8’ Shiplap</td>
</tr>
<tr>
<td>3.0</td>
<td>16.8</td>
<td>4’ x 8’</td>
<td>8’ Shiplap</td>
</tr>
</tbody>
</table>

1 Not all product sizes are available in all regions.
2 R means resistance to heat flow. The higher the R-value or RSI, the greater the insulating power. Refer to Table 2 for thermal resistance at other mean temperatures.
3 All sizes are 4’ x 10’ unless otherwise noted.
Physical Properties
STYROFOAM® Brand Ultra SL Insulation exhibits the properties and characteristics indicated in Table 2 when tested as represented.

Do not leave STYROFOAM® Brand Ultra SL 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 Ultra SL 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 adheresives and finishes, dusty surfaces should be brushed off before these products are applied. A lightcolored, 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.

Environmental Data
STYROFOAM® Brand Ultra SL Insulation is hydrochlorofluorocarbon-free (HCFC-free) with zero ozone-depletion potential. STYROFOAM® Brand Ultra SL Insulation is reusable in many applications. STYROFOAM® Brand Insulation products produced in North America contain an average of 20% pre-consumer recycled content certified by UL Environment Inc.

Fire Information
STYROFOAM® Brand Ultra SL 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 Ultra SL Insulation are easy to handle, cut and install. Contact a local Dow representative or access the literature library at ultrawallsystem.com for more specific instructions.

6. AVAILABILITY
STYROFOAM® Brand Ultra SL Insulation is manufactured in several locations across North America and is distributed through an extensive network. For more information, call 1-800-232-2436.

7. WARRANTY
In the United States, a 50-year thermal limited warranty is available on STYROFOAM® Insulation products 1.5 inches and greater. For thickness less than 1.5 inches, other warranties may apply. Warranties are available as described at dwswarranties.com

8. MAINTENANCE
Not applicable.

<table>
<thead>
<tr>
<th>Property and Test Method</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thermal Resistance per in. ASTM C518, ft²·h·x °F/Blu, R-value, 1 min. @ 75°F mean temp.</td>
<td>1.75° 2.125° 2.5° 3.0°</td>
</tr>
<tr>
<td>Compressive Strength, ASTM D1621, psi, min.</td>
<td>10.0 12.0 14.0 16.8</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>1.1 0.8 0.65 0.50</td>
</tr>
<tr>
<td>Maximum Use Temperature, °F</td>
<td>165</td>
</tr>
<tr>
<td>Coefficient of Linear Thermal Expansion, ASTM D696, in/in x °F</td>
<td>3.5 × 10⁻⁶</td>
</tr>
<tr>
<td>Flexural Strength, ASTM C202, psi, min.</td>
<td>50</td>
</tr>
<tr>
<td>Flame Spread, ASTM E84</td>
<td>0</td>
</tr>
<tr>
<td>Smoke Developed, ASTM E843</td>
<td>155</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.

9. TECHNICAL SERVICES
Dow can provide technical information to help address questions when using STYROFOAM® Brand Ultra SL Insulation. Technical personnel are available to assist with any insulation project. For technical assistance, call 1-866-583-BLUE (2583)

10. FILING SYSTEMS
Visit www.dowbuildingsolutions.com or contact a local Dow representative for more specific instructions.