1. PRODUCT NAME
STYROFOAM™ Panel Core 20 Freezer Extruded Polystyrene Foam Insulation

2. MANUFACTURER
The Dow Chemical Company
Dow Building Solutions
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1-866-583-BLUE (2583)
Fax 1-989-832-1465
www.dowbuildingsolutions.com
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3. PRODUCT DESCRIPTION
Basic Use
STYROFOAM™ Panel Core 20 Freezer Extruded Polystyrene Foam Insulation is a closed-cell high performance core material. Dow’s proprietary extrusion process facilitates precise control of parameters such as density, cell size and cell orientation. This yields foam boards that can stand up to the most demanding composite panel applications. STYROFOAM™ Panel Core 20 Freezer is supplied in sheets that have been carefully engineered and planed to precise tolerances for an exceptional bonding surface.

STYROFOAM™ Panel Core 20 Freezer Extruded Polystyrene Foam Insulation is used extensively in composite panel applications. The closed-cell structure of STYROFOAM™ Panel Core 20 Freezer resists absorption of water, which helps maintain panel integrity and insulating properties in low temperature applications and other environments with high humidity and moisture conditions. The foam also resists absorption of adhesives, so less glue is required for effective, long-lasting adhesion of facer materials.

Dow can offer general guidelines and recommendations for STYROFOAM™ Panel Core 20 Freezer. Call 1-866-583-BLUE (2583) or contact your local Dow representative for details. Some typical applications include:
• Architectural building panels
• Walk in coolers
• Modular structures
• Incubators
• Conservatories
• Sunrooms
• Recreational vehicle sidewalls
• Exterior door panels
• Insulated roof panels
• Clean-room panels
• Garage and entry doors

4. TECHNICAL DATA
Applicable Standards
STYROFOAM™ Panel Core 20 Freezer Insulation complies with ASTM C578 Type X

Code Compliances
STYROFOAM™ Panel Core 20 Freezer Insulation complies with the following codes:
• UL Classified, See Classification Certificate D369 Contact your local Dow sales representative or local authorities for state and local building code requirements and related acceptance.

Environmental Data
STYROFOAM™ Panel Core 20 Freezer Insulation is hydrochlorofluorocarbon (HCFC) free* with zero ozone depletion potential. STYROFOAM™ Panel Core 20 Freezer 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.

* manufactured without hydrochlorofluorocarbon

Physical Properties
STYROFOAM™ Panel Core 20 Freezer Extruded Polystyrene Foam Insulation exhibits the properties and characteristics indicated in Table 2 when tested as represented.

Like all cellular polymers, this product will degrade upon prolonged exposure to sunlight. A covering may be used to block ultraviolet radiation and minimize degradation. Other coverings to help protect the foam from the elements and to meet applicable fire regulations may also be required. Consultation with local building code officials, design engineers/specifiers or insurance personnel is recommended before application.

TABLE 1: Sizes, R-Values and Edge Treatments for STYROFOAM™ Panel Core 20 Freezer Extruded Polystyrene Foam Insulation

<table>
<thead>
<tr>
<th>Nominal Board thickness (in)</th>
<th>Board Length, In.</th>
<th>Board Width, In.</th>
<th>Edge Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 4”</td>
<td>Up to 216”</td>
<td>Up to 50”</td>
<td>Straight Edge</td>
</tr>
</tbody>
</table>

*Not all product sizes are available in all regions.
5. INSTALLATION

STYROFOAM™ Panel Core 20 Freezer Insulation is strong, yet lightweight and easy to fabricate into various sizes and shapes to meet specific design needs. However, because of the critical technical design aspects of many of its applications, Dow recommends that qualified designers or consultants design your system. Contact a local Dow representative for more specific information.

6. AVAILABILITY

STYROFOAM™ Panel Core 20 Freezer Extruded Polystyrene Foam Insulation is available through select distributors and laminators or may be ordered direct from Dow. For more information, call 1-866-583-BLUE (2583).

7. MAINTENANCE

Not applicable.

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**TABLE 2:** Physical Properties of STYROFOAM™ Panel Core 20 Freezer – Extruded Polystyrene Foam Insulation

<table>
<thead>
<tr>
<th>Property and Test Method*</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Density, ASTM D1622, lb/ft³</td>
<td>1.8</td>
</tr>
<tr>
<td>Compressive Strength, ASTM D1621, psi, min., vertical</td>
<td>20</td>
</tr>
<tr>
<td>Tensile Strength, ASTM D1623, lb/in², min., vertical</td>
<td>50</td>
</tr>
<tr>
<td>Shear Strength, ASTM C273, lb/in², min.</td>
<td>25</td>
</tr>
<tr>
<td>Shear Modulus, ASTM C273, lb/in², min.</td>
<td>300</td>
</tr>
<tr>
<td>Flexural Strength, ASTM C203, lb/in², min., extruded</td>
<td>40</td>
</tr>
<tr>
<td>Flexural Modulus, ASTM C203, lb/in², min., extruded</td>
<td>1,500</td>
</tr>
<tr>
<td>Water Absorption, ASTM C272, % by vol., max.</td>
<td>0.3</td>
</tr>
<tr>
<td>Water Vapor Permeance, ASTM E96, perm. max.</td>
<td>1.5</td>
</tr>
<tr>
<td>R-Value(2) per inch (25 mm), ASTM C518, °F·ft²·h/Btu, fresh @ 55°F (13°C) min per inch (25 mm), ASTM C518, °F·ft²·h/Btu, fresh @ 20°F (-7°C) min</td>
<td>7.2 ** 8.0 **</td>
</tr>
<tr>
<td>Surface burning characteristics(3), ASTM E84</td>
<td>15 165</td>
</tr>
</tbody>
</table>

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*Vertical compressive strength measured at 10 percent deformation or at yield, whichever occurs first.
(2) R means resistance to heat flow. The higher the R-value, the greater the insulating power.
(3) This numerical flame spread rating is not intended to reflect hazards presented by this or any other material under actual fire conditions.
(4) Actual water vapor permeance for 1” thick material. Value decreases as thickness increases.
** Per DOE-10 CFR Appendix B to Subpart R of Part 431. For foam produced as board stock "final chemical form" means after extrusion and ready for assembly into a panel or after assembly into a panel.

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8. TECHNICAL SERVICES

Dow can offer technical information to help address questions when using STYROFOAM™ Panel Core 20 Freezer Extruded Polystyrene Foam Insulation. Technical or personnel are available at 1-866-583-BLUE (2583) or contact a local Dow representative for more specific instructions.

9. FILING SYSTEMS

www.dowbuildingsolutions.com
www.sweets.com

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CAUTION: This product 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 (Material Safety Data Sheet (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.

WARNING: Rigid foam insulation does not constitute a working walkable surface or qualify as a fall protection product. 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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