FOAMGLAS® insulation is manufactured by Pittsburgh Corning in a basic block form. Blocks are fabricated into a wide range of shapes, thicknesses and sizes to satisfy industrial insulation requirements.

### PHYSICAL AND THERMAL PROPERTIES OF FOAMGLAS® ONE™ INSULATION

<table>
<thead>
<tr>
<th>PHYSICAL PROPERTIES</th>
<th>ASTM</th>
<th>EN ISO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Absorption of Moisture (Water % by Volume)</td>
<td>0.2%</td>
<td>0.2%</td>
</tr>
<tr>
<td>Water-Vapor Permeability</td>
<td>0.00 ng Pa⁻¹ s⁻¹ m⁻¹</td>
<td>0.00 perm-inch</td>
</tr>
<tr>
<td>Acid Resistance</td>
<td>Impervious to common acids and their fumes except hydrofluoric acid</td>
<td></td>
</tr>
<tr>
<td>Capillarity</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>Compressibility</td>
<td>Noncompressible - will not burn</td>
<td></td>
</tr>
<tr>
<td>Reaction to Fire</td>
<td>Flame Spread 0</td>
<td></td>
</tr>
<tr>
<td>Density</td>
<td>120 kg/m³</td>
<td>7.5 lbs/ft³</td>
</tr>
<tr>
<td>Compressive Strength, Block</td>
<td>620 kPa</td>
<td>90 psi</td>
</tr>
<tr>
<td>Flexural Strength, Block</td>
<td>480 kPa</td>
<td>70 psi</td>
</tr>
<tr>
<td>Hygroscopicity</td>
<td>No increase in weight at 90% relative humidity</td>
<td></td>
</tr>
<tr>
<td>Coefficient of Linear Thermal Expansion</td>
<td>9.0 x 10⁻⁶/°C</td>
<td>5.0 x 10⁻⁶/°F</td>
</tr>
<tr>
<td>Modulus of Elasticity, Approx.</td>
<td>900 MPa</td>
<td>13 x 10⁶ psi</td>
</tr>
<tr>
<td>Thermal Conductivity</td>
<td>W m⁻¹ K⁻¹</td>
<td>Btu-in ft⁻¹ °F⁻¹</td>
</tr>
<tr>
<td>Specific Heat</td>
<td>0.84 kJ kg⁻¹ K⁻¹</td>
<td>0.18 Btu lb⁻¹ °F⁻¹</td>
</tr>
</tbody>
</table>

Note: FOAMGLAS® ONE™ is manufactured to meet or exceed the minimum requirements of ASTM C552-07 Standard Specification for Cellular Glass Insulation (or most recent revision). Unless otherwise specified, measurements were collected using ASTM guidelines at 24°C (75°F) and are average or typical values recommended for design purposes and not intended as specification or limit values. Values under EN ISO are declared as limit values under the specific set of standard test conditions. Properties may vary with temperature. Where testing method or reporting values differ between ASTM and EN ISO methodologies, values are denoted within parentheses in the EN ISO column.

**INDUSTRIAL PIPING, DUCTS AND EQUIPMENT**

FOAMGLAS® insulation is a lightweight, rigid material composed of millions of completely sealed glass cells. Each cell is an insulating entity. FOAMGLAS® insulation's all-glass, closed-cell structure provides the following benefits:

- Constant Insulating Efficiency
- Zero Water Vapor Permeability
- Moisture Resistance
- Fire Protection
- Corrosion Resistance
- Long-Term Dimensional Stability
- Vermin Resistance
- CFC and HCFC Free

These benefits result in FOAMGLAS® Insulation Systems that are long-lasting, require little maintenance and are ideal for:

- Low temperature pipe, equipment, tanks and vessels
- Medium and high temperature pipes and equipment
- Hot oil and hot asphalt storage tanks
- Heat transfer fluid systems
- Hydrocarbon processing systems
- Chemical processing systems
- Above ground and underground steam and chilled water piping
- Commercial piping and ductwork

Manufactured to comply with ASTM C 552
FOAMGLAS® ONE™ INSULATION SYSTEMS FOR INDUSTRIAL APPLICATIONS

Pittsburgh Corning has developed insulation systems for a wide range of piping and equipment applications—above ground or underground, indoors or outdoors—at operating temperatures from -450°F to +900°F (-268°C to +482°C).

Totally Impermeable

Long Term Performance

Because it consists of closed glass cells, FOAMGLAS® insulation resists moisture in both liquid and vapor forms. When tested in accordance with ASTM E96, it has a permeability rating of 0.00 perm-in.

Noncombustible

FOAMGLAS® insulation is 100% glass and contains no binders or . llers—it cannot burn. FOAMGLAS® insulation will not absorb .ammable liquids or vapors. If a fire does occur, FOAMGLAS® insulation can help to contain or suppress it.

Corrosion-Resistant

All-glass FOAMGLAS® insulation is unaffected by common chemicals and by most corrosive plant atmospheres. It does not promote metal corrosion and its moisture resistance will help keep water from reaching equipment and piping.

Dimensionally Stable

FOAMGLAS® insulation is unaffected by temperature differentials and humidity. It will not swell, warp, shrink or otherwise distort. The insulation system's integrity remains intact.

High Compressive Strength

FOAMGLAS® insulation can withstand loads which crush most other insulating materials. In a properly designed piping system, FOAMGLAS® insulation eliminates the need for special treatment at pipe cradles. It also provides a firm base for roof membranes, jacketing or vapor retarders, prolonging their life.

Technical Service

Pittsburgh Corning's Technical Service Staff provides product, application and materials testing—standardized and customized specifications on-site customer assistance and installation guidance.

For complete data on FOAMGLAS® Insulation Systems, please visit our Web site at www.foamglas.com, or contact Pittsburgh Corning at any of the following locations:

Pittsburgh Corning USA
(Corporate Headquarters)
800 Presque Isle Drive
Pittsburgh, PA 15239
Tel: 1-724-327-6100
Fax: 1-724-387-3807

Pittsburgh Corning Corporation Asia
(Asia Headquarters)
Pittsburgh Corning Corporation
PARK LUXE HONGO 101
19-4, HONGO 2-Chome, Bunky-Ku
Tokyo 113-0033 JAPAN
Tel & Fax: 011 81-50-7554-0248

Pittsburgh Corning Europe NV
(Europe / Middle East Africa
Headquarters)
Albertkade, 1
B-3980 Tessenderlo
Belgium
Tel: +32-13-66-17-21
Fax: +32-13-66-78-54

STANDARDS, CERTIFICATIONS AND APPROVALS

FOAMGLAS® insulation can be certified to conform to the requirements of:

• ASTM C 552 "Specification for Cellular Glass Thermal Insulation"
• ASTM C 1639 “Standard Specification for Fabrication of Cellular Glass Piping and Tubing Insulation”
• Military Specification MIL-I-24244C, “Insulation Materials, Thermal, with Special Corrosion and Chloride Requirement”
• Nuclear Regulatory Guide 1.36, ASTM C 795, C 692, C 871
• Flame Spread 0, Smoke Developed 0 (UL 723, ASTM E 84), UL R2844; also classified by UL of Canada
• ISO 9001:2008
• UL 1709

For a listing of UL Through Penetration Fire Stop Approved Systems please search the UL Database at http://www.ul.com/

• UL • UL • UL

• Fire • Flame • Spread

• Requirement

• Insulation • Corrosion and Chloride

• Materials, Thermal

• MIL-I-24244C

• Nuclear • Regulatory • Guide

• ASTM • C • 795

• C • 692

• C • 871

• ISO 9001:2008

• UL 1709

• General • Services • Administration

• PDC: 15250, Public Building Service

• Guide • Specification

• “Thermal • Insulation (Mechanical)”

• New • York • City • Dept. • of • Bldgs., • MEA

#138-81-M FOAMGLAS® insulation for piping, equipment, walls and ceilings

• New • York • State • Uniform • Fire

• Prevention • and • Building • Code • Dept.

• of • State • (DOS) • 07200-890201-2013

• City • of • Los • Angeles • General • Approval

• RR22534

FOAMGLAS® insulation is identified by Federal Supply Code for Manufacturers (FSCM 08869)

*Written request for certificate of compliance must accompany order.

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