

# FOAMGLAS®

**Pittsburgh Corning**

## Protecting Companies and Their People Worldwide

### 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 C552-07.

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.

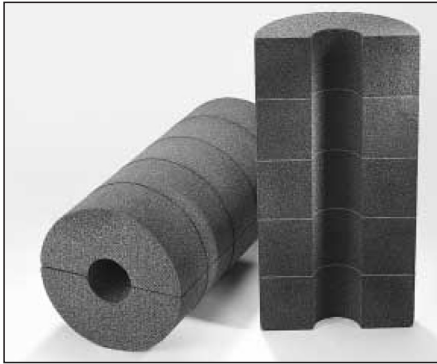
#### PHYSICAL AND THERMAL PROPERTIES OF FOAMGLAS® ONE™ INSULATION

PHYSICAL PROPERTIES	SI	ENGLISH	ASTM STANDARD	EUROPEAN STANDARD
Absorption of Moisture (% by Volume)	0.2%	0.2%	C 240	EN 1609
	Only moisture retained is that adhering to surface cells after immersion			
Water-Vapor Permeability	0.00 perm-cm	0.00 perm-cm	E96 Wet Cup, Procedure B	EN ISO 10456
Acid Resistance	Impervious to common acids and their fumes except hydrofluoric acid			
Capillarity	None	None		EN 1609
Combustibility	Noncombustible, will not burn.		E 136	EN ISO 1182 (Class A1)
Composition	Soda-lime silicate glass — inorganic with no fibers or binders.			
Compressive Strength Average for Standard Material (+/-10%)	600 kPa	90 psi	C 165 C 240 C 552	EN 826
	Strength for flat surfaces capped with hot asphalt. For curved surfaces and pipe supports, contact PCC.			
Density, Average	120 kg/m <sup>3</sup>	7.5 lb/ft <sup>3</sup>	C 303	
Dimensional Stability	Excellent — does not shrink, swell or warp.			EN 1604
Flexural Strength, Block Average	480 kPa	70 psi	C 203 C 240	
Hygroscopicity	No increase in weight at 90% relative humidity.			EN 12089
Linear Coefficient of Thermal Expansion 25°C to 300°C (75°F to 575°F)	9.0 x 10 <sup>-6</sup> /°K	5.0 x 10 <sup>-6</sup> /°F	E 228	EN 13571
Maximum Service Temperature	480°C	+900°F		EN 14706
Modulus of Elasticity, Approx.	900 MPa	1.3 x 10 <sup>5</sup> psi	C 623	
Thermal Conductivity	W/mK	Btu-in/hr•ft <sup>2</sup> •°F	C 177	EN 12667
	0.039 @ 0°C	0.29 @ 75 °F	C 518	EN 12939
	0.040 @ 10°C	0.28 @ 50 °F		
Specific Heat	0.84 kJ/kg•°K	0.20 Btu/lb•°F		
Thermal Diffusivity	4.2 x 10 <sup>-7</sup> m <sup>2</sup> /sec	0.016 ft <sup>2</sup> /hr		

Notes: Measurements were collected using ASTM guidelines and, unless otherwise specified, properties were collected at 24°C (75°F). Properties may vary with temperature. The measurements listed in the table are average or typical values recommended for design purposes, and are not intended as specification or limit values.

# 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).



With the patented StrataFab® System, blocks of FOAMGLAS® insulation are laminated into billets using a special high temperature adhesive. These billets are fabricated into the desired shapes and sizes for pipe, tank, vessels, flanges and valves—practically any industrial insulation application.

## 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 fillers—it cannot burn. FOAMGLAS® insulation will not absorb flammable liquids or vapors. If a fire does occur, FOAMGLAS® insulation will help contain 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](http://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  
3-7-4-304 Hikarigaoka  
Nerima-ku, Tokyo, Japan 179-0072  
Tel & Fax: 011 81-3-5997-0248

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



**ISO 9001:2000**  
**KEMA CERTIFICATE**

Accredited by  
ANSI-RAB NAP  
Accredited by the Dutch  
Council for Accreditation (RVA)

**BCCA ISO 9001:2000**

The information contained herein is accurate and reliable to the best of our knowledge. But, because Pittsburgh Corning Corporation has no control over installation workmanship, accessory materials or conditions of application, NO EXPRESSED OR IMPLIED WARRANTY OF ANY KIND, INCLUDING THOSE OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, IS MADE as to the performance of an installation containing Pittsburgh Corning products. In no event shall Pittsburgh Corning be liable for any damages arising because of product failure, whether incidental, special, consequential or punitive, regardless of the theory of liability upon which any such damages are claimed. Pittsburgh Corning Corporation provides written warranties for many of its products, and such warranties take precedence over the statements contained herein.

# STANDARDS, CERTIFICATIONS\* AND APPROVALS

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

- ASTM C 552 "Specification for Cellular Glass Thermal 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 5, Smoke Developed 0 (UL 723, ASTM E 84), R2844; also classified by UL of Canada, CR1957
- ISO 9001:2000
- UL 1709
- For a listing of UL Through Penetration Fire Stop Approved Systems please search the UL Database at <http://www.ul.com/> Once on this page click on CERTIFICATIONS on the left hand side. Under General Search click on UL FILE NUMBER and type in R15207 and then SEARCH
- Board of Steamship Inspection (Canada) Certificate of Approval No. 100/F1-98
- General Services Administration, PBS (PCD): 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.**

**FOAMGLAS**

FOAMGLAS® and StratFab® are federally registered trademarks owned by Pittsburgh Corning Corporation.

© 2009 Pittsburgh Corning Corporation