

PITTSBURGH CORNING FOAMGLAS[®]

I N S U L A T I O N

Industrial Piping, Ducts and Equipment

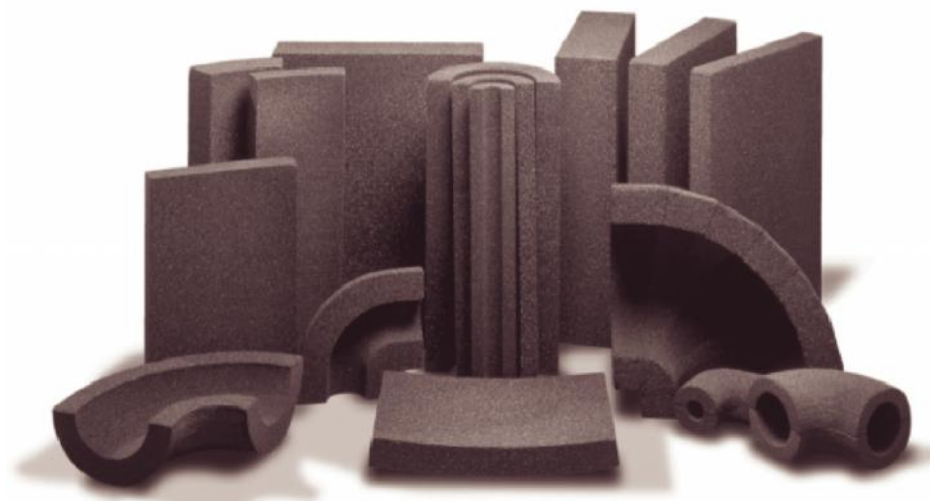
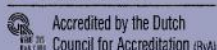
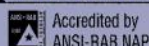
FOAMGLAS[®] insulation is a lightweight, rigid material composed of millions of completely sealed glass cells. Each cell is an insulating entity. FOAMGLAS[®] insulation's all-glass, closed-cell structure provides the following benefits:

- Constant Insulating Efficiency
- Zero Water Vapour 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 C552-00.



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

Physical Properties		ASTM Test
Absorption of moisture (% by volume)	0.2% Only moisture retained is that adhering to surface cells after immersion.	C 240
Water-vapours permeability	0.00 perm-cm	E 96
Acid resistance	Impervious to common acids and their fumes, except hydrofluoric acid.	
Capillarity	None	
Combustibility	Non-combustible, will not burn.	E 136
Flame spread	0	E 84
Smoke developed	0	E 84
Composition	Pure glass, totally inorganic, contains no binder.	
Compressive strength average for standard material (± 10%)	620 kPa Strength for flat surfaces capped with hot asphalt, different capping will give different values. For curved surfaces and pipe supports, contact PCC.	C 165 C 240 C 552-00
Density, average	120 kg/m ³	
Dimensional stability	Excellent — does not shrink, swell or warp.	
Flexural strength, block average	480 kPa	C 203 C 240
Hygroscopic	No increase in weight at 90% relative humidity.	
Linear coefficient of thermal expansion (25° to 300°C)	9.0 x 10 ⁻⁶ /°K	E 228
Maximum service temperature	+482°C	
Modulus of elasticity, approx.	900 MPa	C 623
Shear strength	No reliable recognized test method for determination of the shear strength for cellular glass exists at this time. Where shear strength is a design criterion, PCC should be contacted for recommendations.	
Thermal conductivity	W/mK 0.039 @ 0°C 0.040 @ 10°C	C 177 C 518
Specific heat	0.84 kJ/kg • °K	
Thermal diffusivity	0.0042 cm ² /sec	

NOTE: Properties given at 24°C unless otherwise specified. Properties may vary with temperature. These values are average or typical values recommended for design purposes, and are not intended as specification or limit values.

E 96 Wet Cup Method/Procedure B

FOAMGLAS®

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 -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.

The Advantage® System is a method of fabricating FOAMGLAS® insulation by bonding segments or lags of insulation to a flexible facing with special adhesives. Designed specifically for temperature ranges from ambient to 482°C

Totally Impermeable

Long Term Performance.

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

Non-combustible.

FOAMGLAS® insulation is 100% glass and contains no binders or fillers—it cannot burn.

FOAMGLAS® insulation will not absorb flammable liquids or vapours. 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 vapour retarders, prolonging their life.

In addition, FOAMGLAS® insulation weighs only 7.5 lb/ft³. This makes it easy to handle in difficult installations.

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.

CERTIFICATIONS* AND APPROVALS

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

- ASTM C 552 "Specification for Cellular Glass Thermal Insulation"
- Canadian Standard CAN/CGSB51.38M
- 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), R2844; also classified by UL of Canada, CR1957
- ISO 9001:2000
- 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)

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