



**Specialty Products  
and Insulation**

## Cellular Glass Insulation

(Commonly referred to as FOAMGLAS®)

### Description

Cellular Glass insulation is rigid, lightweight material containing millions of completely sealed glass cells. This unique cell structure is inherently water resistant and provides a highly effective vapor barrier (will not absorb flammable liquids or vapors). It is also unaffected by common chemicals and by most corrosive environments. The material is available in sectional pipe covering and fittings, board segments for equipment and curved segments for tank wall and head applications. Cellular glass insulation can be applied and coated with a variety of available adhesives and finishes.

### Uses

For use on piping, fittings, equipment and tanks operating in the temperature range of -450° F (-268° C) to 900° F (482° C). For applications above 400° F, contact your local SPI Fabrication center for system recommendations.

Typical applications include: low to high temperature pipe, equipment and tanks in the petrochemical industry, above and below ground steam and chilled piping systems as well as commercial piping and ductwork.

### Advantages

- Constant insulating efficiency
- Closed cell, does not absorb liquids
- Zero vapor permeability
- Excellent dimensional stability
- High compressive strength
- Fire Protection, will not burn
- Vermin Resistance
- Fiber, CFC and HCFC Free

Performance and compliance use data is based on fabrication of FOAMGLAS® ONE™ as manufactured by Pittsburgh Corning.



Pipe, fittings, curved segments, precision machined tank heads and basic block insulations are supplied for a wide variety of above and underground applications. Cellular Glass insulation sections are fabricated with reactive gypsum or bituminous adhesive.



A variety system jacketing materials are available to meet service and specification requirements for above and underground applications.

## Performance Compliance Data

ASTM C585-90 (2004)	Standard Practice for Inner and Outer Diameters of Rigid Thermal Insulation for Nominal Sizes of Pipe and Tubing (NPS System).
ASTM C450	Standard Practice for Fabrication of Thermal Insulating Fitting Covers for NPS Piping and Vessel Lagging.

PHYSICAL AND THERMAL PROPERTIES OF FOAMGLAS® ONE™ INSULATION				
	ASTM			EN ISO
	SI	ENGLISH	METHOD	METHOD
Absorption of Moisture (Water % by Volume)	0.2%	0.2%	C240	EN 1609 EN 12087
	Only moisture retained is that adhering to surface cells after immersion			
Water-Vapor Permeability	0.00 ng·Pa <sup>-1</sup> ·s <sup>-1</sup> ·m <sup>-1</sup>	0.00 perm-in	E96 Wet Cup Procedure B	EN 12086 EN ISO 10456
Acid Resistance	Impervious to common acids and their fumes except hydrofluoric acid			
Capillarity	None			
Combustibility & Reaction to Fire	Noncombustible - will not burn Flame Spread 0 Smoke Development 0		E136 E84	EN ISO 1182 (Class A1)
Composition	Soda-lime silicate glass – inorganic with no fibers or binders			
Compressive Strength, Block	620 kPa	90 psi	C165 C240 C552	EN 826 Method A
Density	120 kg/m <sup>3</sup>	7.5 lb/ft <sup>3</sup>	C303	EN 1602
Dimensional Stability	Excellent—does not shrink, swell or warp			EN 1604 (DS 70/90)
Flexural Strength, Block	480 kPa	70 psi	C203 C240	EN 12089 (BS450)
Hygroscopicity	No increase in weight at 90% relative humidity			
Coefficient of Linear Thermal Expansion	9.0 x 10 <sup>-6</sup> /K 25°C to 300°C	5.0 x 10 <sup>-6</sup> /°F 75°F to 575°F	E228	EN 13471
Maximum Service Temperature	482°C	900°F		
Modulus of Elasticity, Approx	900 MPa	1.3 x 105 psi	C623	EN 826 Method A1
Thermal Conductivity	W·m <sup>-1</sup> ·K <sup>-1</sup> 0.040 @ 10°C 0.042 @ 24°C	Btu·in·hr <sup>-1</sup> ·ft <sup>-2</sup> ·°F <sup>-1</sup> 0.28 @ 50°F 0.29 @ 75°F	C177 C518	EN 12667 EN 12939 (A 0.1000 ≤ 0.041 W·m <sup>-1</sup> ·K <sup>-1</sup> @ 10° C)
Specific Heat	0.84 kJ·kg <sup>-1</sup> ·K <sup>-1</sup>	0.18 Btu·lb <sup>-1</sup> ·°F <sup>-1</sup>		
Thermal Diffusivity	4.2 x 10 <sup>-7</sup> m <sup>2</sup> /sec	0.016 ft <sup>2</sup> /hr		
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.				

(Technical data included provided by Manufacturer.)



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