



SPECIALTY PRODUCTS & 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



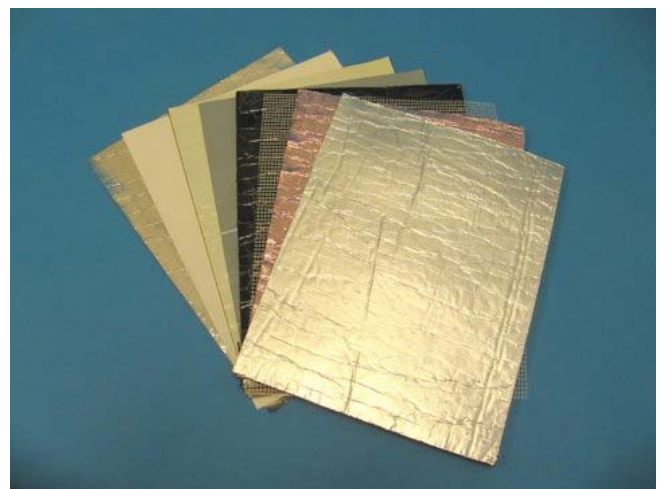
Uses

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.

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.

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.

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 ⁻¹ ·s ⁻¹ ·m ⁻¹ | 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 | EN 826 Method A |
| | Strength for flat surfaces capped with hot asphalt | | C240 C552 | |
| Density | 120 kg/m ³ | 7.5 lb/ft ³ | 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 ⁻⁶ /K 25°C to 300°C | 5.0 x 10 ⁻⁶ /°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 ⁻¹ ·K ⁻¹ | Btu·in·hr ⁻¹ ·ft ⁻² ·°F ⁻¹ | C177 C518 | EN 12667 EN 12939 (A or (B) or (C) ≤ 0.041 W·m ⁻¹ ·K ⁻¹ @ 10° C) |
| | 0.040 @ 10°C 0.042 @ 24°C | 0.28 @ 50°F 0.29 @ 75°F | | |
| Specific Heat | 0.84 kJ·kg ⁻¹ ·K ⁻¹ | 0.18 Btu·lb ⁻¹ ·°F ⁻¹ | | |
| Thermal Diffusivity | 4.2 x 10 ⁻⁷ m ² /sec | 0.016 ft ² /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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