

INDUSTRIAL PIPE & EQUIPMENT INSULATION

FOAMGLAS® ONE™ Insulation ASTM C552 Grade 6

FOAMGLAS® ONE™ insulation is a lightweight, rigid material composed of millions of completely sealed glass cells. It is manufactured by Pittsburgh Corning in a block form and then fabricated into a wide range of shapes and sizes to satisfy industrial and commercial insulation requirements.

Applications

- Cryogenic systems
- 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
- Steam and chilled water piping
- Commercial piping and ductwork
- Direct burial / underground

FOAMGLAS® ONE™ Block Insulation is manufactured in a full range of standard thicknesses and it is available in standard SI and English formats.

TYPE I BLOCK DIMENSIONS			
FORMATS	STANDARD		LARGE
	SI	ENGLISH	ENGLISH
WIDTH & LENGTH	450 x 600 mm	18 x 24 in	18 x 36 in
THICKNESSES	40-180 mm 10 mm increments	2-7 in 1/2 in increments	3-8 in 1/2 in increments

Contact a representative for regional availability.



Benefits

- Constant insulating efficiency
- Noncombustible
- Non-absorbent
- Impermeable to water and water vapor
- Corrosion/chemical resistant
- Long term dimensional stability
- Vermin resistance
- High compressive strength
- Ecologically friendly, sustainable

STANDARDS, CERTIFICATIONS¹ AND APPROVALS

FOAMGLAS® ONE™ Insulation can be certified to conform to the requirements of:

- ASTM C552 "Standard Specification for Cellular Glass Thermal Insulation" (Grade 6)
- ASTM C1639 "Standard Specification for Fabrication of Cellular Glass Piping and Tubing Insulation"
- Military Specification MIL-DLT-24244D (SH), with Special Corrosion and Chloride Requirement"
- Nuclear Regulatory Guide 1.36, ASTM C795, C692, C871
- Flame Spread Index 0, Smoke Developed Index 0 (UL 723, ASTM E 84), UL R2844; also classified by UL of Canada
- UL 1709, Rapid Rise Fire Tests of Protection Materials for Structural Steel
- UL Through Penetration Fire Stop Approved Systems UL1479/ASTM E814, please search the UL Database at www.ul.com. Click on ONLINE CERTIFICATION DIRECTORY under RESOURCES in the bottom right corner of the page. Under BEGIN A BASIC SEARCH, type R15207 in UL FILE NUMBER and then click SEARCH.
- Board of Steamship Inspection (Canada) Certificate of Approval No. 100 / FI-98
- General Services Administration, PBS (PCD; 15250, Public Building Services Guide Specification, "Thermal Insulation (Mechanical)"
- New York City Department of Buildings, MEA #138-81-M FOAMGLAS® insulation for piping, equipment, walls and ceilings
- New York State Uniform Fire Prevention and Building Code Department of state (DOS) 07200-890201-2013
- USGS Approval for Non-combustible Inspections
- GreenSpec® Listed. www.greenspec.com
- EC-114.456 USCG 164.109/EC0736/114.456 Approval for marine use
- FOAMGLAS® ONE™ insulation is identified by Federal Supply code for Manufacturers (FSCM 08869)
- Living Building Challenge RED LIST FREE product. Find our RED LIST FREE labels in the International Living Future Institute's database: FGL-0001 / FG-0002.

¹Request for certification shall be included with valid order for FOAMGLAS® ONE™ Insulation.

PHYSICAL AND THERMAL PROPERTIES^{2,3}

PROPERTY	ASTM METHOD	SI	ENGLISH
ABSORPTION OF MOISTURE	C240	< 0.2% by Vol	< 0.2% by Vol
CAPILLARITY		None	
CHEMICAL RESISTANCE		Impervious to common acids and their fumes.	
COEFFICIENT OF LINEAR THERMAL EXPANSION	E228	25 to 300 °C , 9.0 x 10 ⁻⁶ / K -170 to 25 °C , 6.6 x 10 ⁻⁶ / K	75 to 575 °F , 5.0 x 10 ⁻⁶ / °F -274 to 75 °F , 3.7 x 10 ⁻⁶ / °F
COMBUSTIBILITY	E136	Noncombustible	
COMPOSITION		Soda lime glass. Inorganic. No fibers or binders.	
COMPRESSIVE STRENGTH	C165 / C240 / C552	AVG = 620 kPa LSL = 414 kPa	AVG = 90 lb / in ² LSL = 60 lb / in ²
CORROSION, WATER SOLUBLE IONS AND PH	C871 C692 C1617	Acceptable for use with stainless steel Pass (0 Coupon Cracked) < DI Water	
DENSITY (+/-10%)	C303	115 kg / m ³	7.18 lb / ft ³
DIMENSIONAL STABILITY		Excellent - does not shrink or swell.	
FLEXURAL STRENGTH	C203 / C240	AVG = 480 kPa LSL = 283 kPa	AVG = 70 lb / in ² LSL = 41 lb / in ²
HYGROSCOPICITY		No increase in weight at 90% relative humidity.	
MODULUS OF ELASTICITY, APPROXIMATE (ν= 0.25)	C623	900 MPa	1.3 x 10 ⁵ lb·in ⁻²
SERVICE TEMPERATURE		-268 to 482 °C	-450 to 900 °F
SPECIFIC HEAT	E1461	0.77 kJ / kg·K @ 25°C	0.18 BTU / lb·°F @ 77°F
SURFACE BURNING CHARACTERISTICS	E84	Flame Spread Index 0 / Smoke Development Index 0	
WATER VAPOR PERMEABILITY	E96 Wet Cup	0.00 ng / Pa·s·m	0.00 perm·inch

THERMAL CONDUCTIVITY (λ) VALUES AT SELECT TEMPERATURES (ASTM C518, C177)

TEMPERATURE	°C (°F)	204 (400)	149 (300)	93 (200)	38 (100)	24 (75)	10 (50)	-18 (0)	-46 (-50)	-73 (-100)	-101 (-150)	-129 (-200)	-157 (-250)	-165 (-265)
ASTM C552 ³	W/m K (BTU in/hr °F ft ²)	0.084 (0.58)	0.069 (0.48)	0.058 (0.40)	0.048 (0.33)	0.045 (0.31)	0.043 (0.30)	0.039 (0.27)	0.035 (0.24)	0.030 (0.21)	0.027 (0.19)	0.025 (0.17)	0.023 (0.16)	N/A
FOAMGLAS® ONE™ Insulation ⁴	W/m K (BTU in/hr °F ft ²)	0.078 (0.54)	0.065 (0.45)	0.054 (0.38)	0.044 (0.31)	0.042 (0.29)	0.040 (0.28)	0.036 (0.25)	0.032 (0.22)	0.029 (0.20)	0.026 (0.18)	0.023 (0.16)	0.020 (0.14)	0.019 (0.13)

²Values represent typical physical and thermal properties.

³Type I Block (Grade 6) limit values, where applicable, are specified by ASTM C552-15 Standard Specification for Cellular Glass Thermal Insulation.

⁴The values were determined by evaluating a polynomial at the insulation mean temperature. Contact Pittsburgh Corning for assistance applying our design polynomials to your application.

For additional information on FOAMGLAS® ONE™ insulation or systems, please contact Pittsburgh Corning at any of our worldwide offices or visit us at www.foamglas.com.

Pittsburgh Corning Corporation

Global Industry Headquarters

800 Presque Isle Drive
Pittsburgh, PA 15239 USA
+1 724 327 6100
Toll Free +1 800 545 5001

Asia-Pacific:

+81 50 7554 0248

Europe, Middle East & Africa:

+32 13 661 721

Worldwide Technical Services

Americas & Asia Pacific:

+1 800 327 6126

Europe, Middle East & Africa:

+32 13 611 468

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