



# FOAMGLAS® ONE™ INSULATION



## INDUSTRIAL PIPE & EQUIPMENT 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 Owens Corning in a block form and then fabricated into a wide range of shapes and sizes to satisfy industrial and commercial insulation requirements.

### Features

- Constant insulating efficiency
- Noncombustible
- Nonabsorbent
- Impermeable to water and water vapor
- Corrosion/chemical resistant
- Long-term dimensional stability
- Vermin resistance
- High compressive strength

### Standards, Code Compliance and Approvals<sup>1</sup>

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 E84), 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
- UL 1479/ASTM E814; please search the UL database at [www.ul.com](http://www.ul.com)
- 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)”)
- GreenSpec® listed, [www.greenspec.com](http://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)

### 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 DIMENSIONS

	STANDARD FORMAT		LARGE FORMAT
	SI	ENGLISH	ENGLISH
<b>WIDTH &amp; LENGTH</b>	450 x 600 mm	18 x 24 in	18 x 36 in
<b>THICKNESS</b>	40–180 mm (10 mm increments)	1.5–7 in (½ in increments)	3–8 in (½ in increments)

Contact a representative for regional availability.

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

## Physical and Thermal Properties<sup>2,3</sup>

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 <sup>-6</sup> /K	75 to 575°F, 5.0 x 10 <sup>-6</sup> /°F
		-170 to 25°C, 6.6 x 10 <sup>-6</sup> /K	-274 to 75°F, 3.7 x 10 <sup>-6</sup> /°F
Combustibility	E136	Noncombustible	
Composition	–	Soda-lime glass. Inorganic. No fibers or binders.	
Compressive Strength	C165/C240/C552	AVG = 620 kPa	AVG = 90 lb/in <sup>2</sup>
		LSL = 414 kPa	LSL = 60 lb/in <sup>2</sup>
Corrosion, Water Soluble Ions, and pH	C871 C692 C1617	Acceptable for use with stainless steel Pass < DI Water	
Density (±10%)	C303	115 kg/m <sup>3</sup>	7.18 lb/ft <sup>3</sup>
Dimensional Stability	–	Excellent – does not shrink or swell	
Flexural Strength	C203/C240	AVG = 480 kPa	AVG = 70 lb/in <sup>2</sup>
		LSL = 283 kPa	LSL = 41 lb/in <sup>2</sup>
Hygroscopicity	–	No increase in weight at 90% relative humidity	
Modulus of Elasticity, Approximate (ν = 0.25)	C623	900 MPa	1.3 x 10 <sup>5</sup> lb·in <sup>-2</sup>
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 Mean 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 <sup>3</sup>	W/m K (BTU in/hr °F ft <sup>2</sup> )	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 <sup>4</sup>	W/m K (BTU in/hr °F ft <sup>2</sup> )	0.078 (0.54)	0.066 (0.46)	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)	0.021 (0.14)	0.020 (0.14)

2 Values represent typical physical and thermal properties.

3 Type 1 Block (Grade 6) limit values, where applicable, are specified by ASTM C552 Standard Specification for Cellular Glass Thermal Insulation.

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

For additional information on FOAMGLAS® ONE™ insulation or systems, please contact Owens Corning at any of our worldwide offices or visit us at [www.foamglas.com](http://www.foamglas.com).

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