



# FOAMGLAS® HLB 1400 INSULATION



## HIGH-LOAD-BEARING CELLULAR GLASS INSULATION ASTM C552 GRADE 14

FOAMGLAS® HLB 1400 Insulation is specially designed for high-load-bearing industrial applications. Its unique combination of high compressive strength and low thermal conductivity makes it ideal for a wide range of tank base construction and other industrial load-bearing applications.

### 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

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

- ASTM C552 "Standard Specification for Cellular Glass Thermal Insulation" (Grade 14)
- I-QC-HLB/ISO 3951
- 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
- GreenSpec® listed, [www.greenspec.com](http://www.greenspec.com)
- FOAMGLAS® Insulation is identified by Federal Supply Code for Manufacturers (FSCM 08869)

### Applications

- Cold and cryogenic tank bases
- Hot and high temperature tank bases
- Load-bearing pipe supports
- Secondary containment corner protection
- Special load-bearing applications

FOAMGLAS® HLB Block Insulation is manufactured in a full range of standard grades, and it is available in standard SI and English formats.

### TYPE 1 BLOCK DIMENSIONS

	SI	ENGLISH
WIDTH & LENGTH	450 x 600 mm	18 x 24 in
THICKNESS	50–175 mm (25 mm increments)	2–7 in (1 in increments)

Contact a representative for regional availability.

## Physical and Thermal Properties<sup>1,2</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	LSL <sub>tot avg</sub> = 1400 kPa	LSL <sub>tot avg</sub> = 203 lb/in <sup>2</sup>
LSL <sub>ind</sub> = 965 kPa		LSL <sub>ind</sub> = 140 lb/in <sup>2</sup>	
Corrosion, Water Soluble Ions, and pH	C871 C692 C1617	Acceptable for use with stainless steel Pass < DI Water	
Density (±15%)	C303	150 kg/m <sup>3</sup>	9.4 lb/ft <sup>3</sup>
Dimensional Stability	–	Excellent – does not shrink or swell	
Flexural Strength	C203/C240	LSL = 434 kPa	LSL = 63 lb/in <sup>2</sup>
Hygroscopicity	–	No increase in weight at 90% relative humidity	
Modulus of Elasticity, Approximate (v = 0.25)	C623	1503 MPa	2.2 x 10 <sup>5</sup> lb·in <sup>-2</sup>
Service Temperature	Without Load	-268 to 482°C	-450 to 900°F
	With Load	-268 to 400°C	-450 to 752°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>2</sup>	W/m K (BTU in/hr °F ft <sup>2</sup> )	0.088 (0.61)	0.075 (0.52)	0.063 (0.44)	0.053 (0.37)	0.052 (0.36)	0.049 (0.34)	0.045 (0.31)	0.040 (0.28)	0.037 (0.26)	0.035 (0.24)	0.032 (0.22)	0.029 (0.20)	N/A
FOAMGLAS® HLB 1400 INSULATION <sup>3</sup>	W/m K (BTU in/hr °F ft <sup>2</sup> )	0.084 (0.58)	0.071 (0.49)	0.060 (0.42)	0.050 (0.35)	0.048 (0.33)	0.046 (0.32)	0.042 (0.29)	0.038 (0.26)	0.035 (0.24)	0.032 (0.22)	0.029 (0.20)	0.026 (0.18)	0.026 (0.18)

1 Values represent typical physical and thermal properties.

2 Type 1 Block (Grade 14) limit values, where applicable, are specified by ASTM C552 Standard Specification for Cellular Glass Thermal Insulation.

3 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® HLB insulation or systems, please contact Owens Corning at any of our worldwide offices or visit us at [www.foamglas.com](http://www.foamglas.com). The information contained herein is accurate and reliable to the best of our knowledge. But, because Pittsburgh Corning, LLC has no control over installation workmanship, accessory materials or conditions of application, NO EXPRESSED OR IMPLIED WARRANTY OF ANY KIND, INCLUDING THOSE OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, IS MADE as to the performance of an installation containing Owens Corning products. In no event shall Pittsburgh Corning, LLC be liable for any damages arising because of product failure, whether incidental, special, consequential or punitive, regardless of the theory of liability upon which any such damages are claimed. Pittsburgh Corning, LLC provides written warranties for many of its products, and such warranties take precedence over the statements contained herein.

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