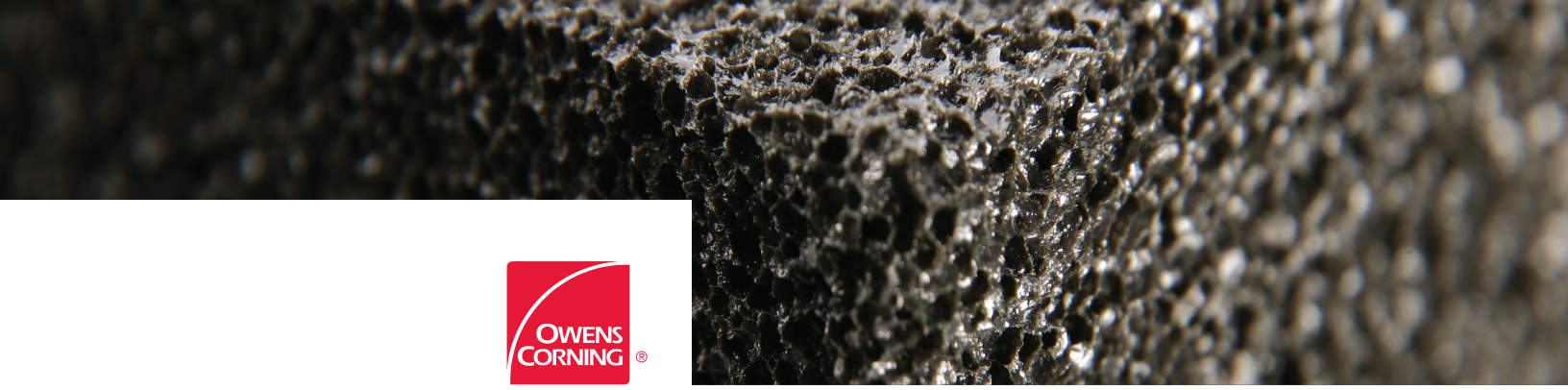
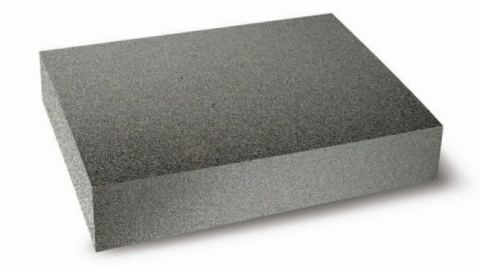


FOAMGLAS® HLB 1400 INSULATION

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[1]

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
- 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
- FOAMGLAS® Insulation is identified by Federal Supply Code for Manufacturers (FSCM 08869)

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

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[2,4]

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	75 to 575°F, 5.0 x 10^{-6}/°F
		-170 to 25°C, 6.6 x 10^{-6}/K	-274 to 75°F, 3.7 x 10^{-6}/°F
Combustibility	E136	Noncombustible	
Composition	–	Soda-lime glass. Inorganic. No fibers or binders.	
Compressive Strength[3]	C165/C240/C552	$LSL_{lot\ avg}$ = 1400 kPa	$LSL_{lot\ avg}$ = 203 lb/in^2
		LSL_{ind} = 965 kPa	LSL_{ind} = 140 lb/in^2
Corrosion, Water Soluble Ions, and pH	C871 C692 C1617	Acceptable for use with stainless steel Pass < DI Water	
Density (±15%)	C303	150 kg/m^3	9.4 lb/ft^3
Dimensional Stability	–	Excellent — does not shrink or swell	
Flexural Strength	C203/C240	LSL = 434 kPa	LSL = 63 lb/in^2
Hygroscopicity	–	No increase in weight at 90% relative humidity	
Modulus of Elasticity, Approximate (v = 0.25)	C623	1358 MPa	2.0 x 10^5 lb·in^{-2}
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[3]	**W/m K (BTU in/hr °F ft²)**	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[5]	**W/m K (BTU in/hr °F ft²)**	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)

2 Values represent typical physical and thermal properties.
3 Response to compressive loads in application may yield different results. It is the responsibility of the user to determine suitability of this product grade for specific design conditions.
4 Type 1 Block (Grade 14) limit values, where applicable, are specified by ASTM C552 Standard Specification for Cellular Glass Thermal Insulation.
5 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.

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