

# INSULWOOL-FOAM GLASS



## ● PRODUCT INTRODUCTION

IW-Grade foam glass insulation (ASTM C552) is a lightweight, rigid material composed of millions of completely sealed glass cells. IW-Grade 6 is in a block form and then fabricated into a wide range of shapes and sizes to satisfy industrial and commercial insulation requirements.

## ● PRODUCT BENEFIT

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

## ● PRODUCT APPLICATION

- 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



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## ● STANDARD, CERTIFICATE AND APPROVALS

Over the years, we have attached great importance to product innovation, and we have obtained the following certificates.

- ASTM C552, Standard Specification for Cellular Glass Thermal Insulation (Grade6)
- EN 14620-4, Design and manufacture of site built, vertical, cylindrical, flat-bottomed steel tanks for the storage of refrigerated, liquefied gases with operating temperatures between 0°C and -165°C Part 4: Insulation components
- GB/T 26978.4, Design and construction of vertical cylinder flat bottom steel liquefied natural gas storage tank for on-site assembly. Part 4 Thermal insulation elements
- GB 50264, Code for design of thermal insulation for industrial equipment and pipelines
- ASTM C240, Standard test method for porous glass insulating blocks
- JC/T647, Foam glass insulation products
- GB/T19001/ISO9001, Quality management system requirements
- Quality Management System Certificate
- SGS National Glass Fiber Product Quality Test Report
- Thermal Insulation Material Recommendation Certificate (issued by China Petroleum and Chemical Industry Federation)
- International A1-Level Fire Protection Certificate
- Insulation Material Recommended Company
- Quality&Service&Integrity AAA-level Enterprise



## ● TECHNICAL DATA

PHYSICAL AND THERMAL PROPERTIES <sup>1,2</sup>		
PROPERTY	ASTM METHOD	SI
ABSORPTION OF MOISTURE	C240	< 0.2% by Vol
CHEMICAL RESISTANCE their fumes.		Impervious to common acids and
COEFFICIENT OF LINEAR THERMAL EXPANSION	E228	-165 to 25 °C , 7.8 x 10 <sup>-6</sup> / K
COMBUSTIBILITY	E136	Noncombustible
COMPOSITION or binders.		Soda lime glass. Inorganic. No fibers
COMPRESSIVE STRENGTH	C165	AVG =1600 kPa LSL = 1100 kPa
CORROSION, WATER SOLUBLE IONS AND PH	C871 C692 C871	Acceptable for use with stainless steel Pass < DI Water
DENSITY (+/-10%)	C303	160 kg / m <sup>3</sup>
DIMENSIONAL STABILITY		Excellent - does not shrink or swell.
FLEXURAL STRENGTH	C203	LSL=480 kPa
HYGROSCOPICITY humidity.		No increase in weight at 90% relative
SERVICE TEMPERATURE		-268 to 480 °C
SPECIFIC HEAT	E1461	0.82 kJ / kg·K @ 24°C
SURFACE BURNING CHARACTERISTICS Development Index 0	E84	Flame Spread Index 0 / Smoke
Closed cell content	D6226	100%
Water vapor permeability	E96	0.0059 ng/(Pa·m·s)

THERMAL CONDUCTIVITY (λ) VALUES AT SELECT MEAN TEMPERATURES (ASTM C177)											
TEMPERATURE	°C (°F)	38	24	10	-18	-46	-73	-101	-129	-157	-165
		(100)	(75)	(50)	(0)	(-50)	(-100)	(-150)	(-200)	(-250)	(-265)
ASTM C177	W/m K	0.055	0.052	0.050	0.046	0.042	0.039	0.036	0.033	0.030	N/A
IW-GRADE16	W/m K	0.053	0.049	0.045	0.043	0.040	0.036	0.034	0.031	0.028	0.027

1 Values represent typical physical and thermal properties.

2 Grade 16 limit values, where applicable, are specified by ASTM C552 Standard Specification for Cellular Glass Thermal Insulation.

3 The values were tested by the third party organization