

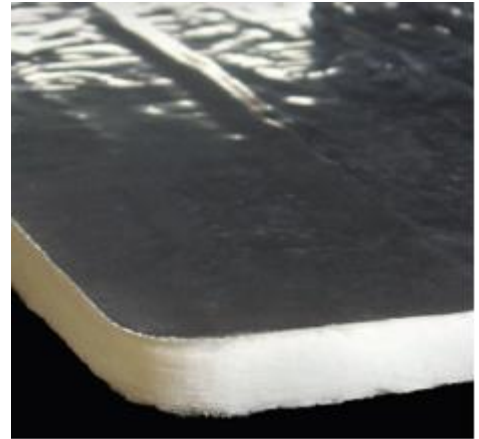
CRYOGEL Z

High performance, flexible, industrial insulation for sub-ambient and cryogenic applications.

Cryogel® Z flexible aerogel blanket insulation is engineered to deliver maximum thermal protection with minimal weight and thickness. Ideal for use in subambient and cryogenic applications, Cryogel® Z incorporates an integral vapor retarder with zero water vapor permeability to ensure maximum protection of your assets.

Cryogel® Z insulation features unique silica aerogel within a flexible fiber blanket to deliver industry-leading thermal performance in an easy-to-handle and environmentally safe product.

Cryogel® Z's extremely low thermal conductivity reduces heat gain and liquid boil-off. The inherent flexibility of Cryogel® Z's blanket form minimizes installation labor, eliminates the need for contraction joints, and makes the product durable and resistant to mechanical abuse.



PHYSICAL PROPERTIES

Thicknesses*	5 mm	10 mm
Material Form*	1,450 mm wide	1,450 mm wide
Max. Use Temp.	125°C	
Color	White	
Density*	0,16 g/cc	
Hydrophobic	Yes	

* Nominal Values

ADVANTAGES

Superior Thermal Performance

Extremely low thermal conductivity (k-value) for improved efficiency and energy savings

Reduced Thickness and Profile

Can be installed at a fraction of the thickness of competing materials, enabling tighter packing of piping and equipment

Integral Vapor Retarder

Factory-laminated vapor retarder provides moisture protection, prevents damage from condensation and enhances process control

Eliminates Contraction Joints

Low-temperature flexibility eliminates the need for contraction joints, speeding installation and reducing complexity

Ease of Handling and Installation

Easily cut and conformed to complex patterns, Cryogel® Z excels in tight spaces with restricted access, allowing easier insulation of problem areas and improved adherence to site specifications

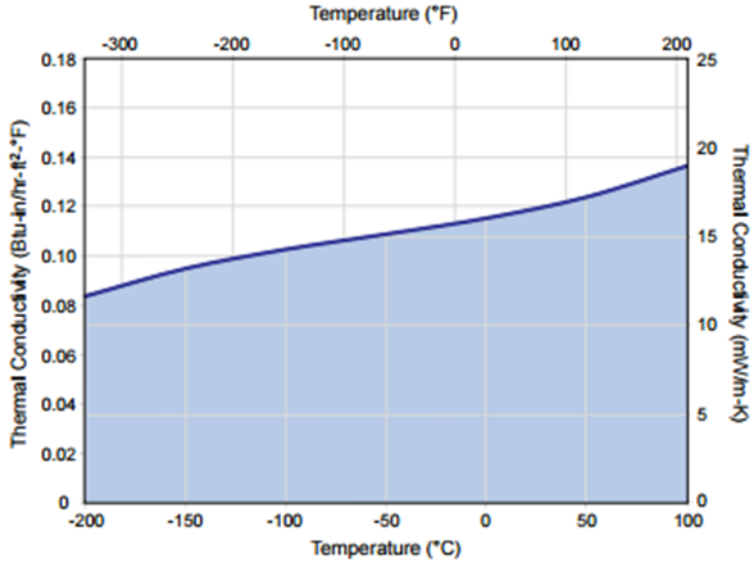
CRYOGEL Z

Physically Robust

Durable and flexible even at low temperatures, Cryogel® Z can recover from compression events and maintain performance, resulting in increased effectiveness over its lifetime

THERMAL CONDUCTIVITY

ASTM C 1728, Type I, Grade 1, Category B



Mean Temp.	°F	-200	-100	0	75	100	200
	°C	-129	-73.3	-17.8	23.9	37.8	93.3
<i>k</i>	BTU-in/hr-ft²-°F	0.096	0.10	0.11	0.12	0.12	0.13
	mW/m-K	14	15	16	17	17	19

*Thermal conductivity typically measured at a compressive load of 2 psi.

SPECIFICATION COMPLIANCE AND PERFORMANCE

CHARACTERISTICS

Cryogel Z can be cut using conventional cutting tools including scissors, tin snips, razor knives and hot knives. The material can be dusty, and it is recommended gloves, safety glasses, and dust mask be worn when handling material. See MSDS for complete health and safety information.

OTHER AVAILABLE MATERIALS

Insulcon B.V. produces several series of flexible gel blanket materials for hot and cold applications. Please contact us for additional information on these products.

CRYOGEL Z

Specification compliance and performance

Test procedure property results

ASTM C1728, Type 1, Grade 1B	Standard Specification for Flexible Aerogel Insulation	Complies
ASTM C1651	Compressive Resistance	≥ 5 psi (34.5 kPa) @ 10% deformation
ASTM C356	Linear Shrinkage Under Soaking Heat	< 2%
ASTM C795	Insulation for Use Over Austenitic Stainless Steel	Pass
ASTM C1101/1101M	Flexibility of Blanket Insulation	Flexible
ASTM C1104/1104M	Water Vapor Sorption	≤ 5% (by weight)
ASTM C1338	Fungal Resistance of Insulation Materials	No Growth
ASTM C1617	Corrosiveness to Steel	Pass
ASTM C1763	Water Absorption by Immersion	Pass
ASTM E84	Surface Burning Characteristics	Flame Spread Index ≤ 25 Smoke Developed Index ≤ 50
ASTM E96	Water Vapor Transmission Rate of Vapor Retarder	0.00 perm
ISO 15665	Acoustic Insulation for Pipes, Valves & Flanges	Configurations possible to meet Class A2, B2, C2, and Shell D22
OTI 95 634	Jet -Fire Resistance Test of Passive Fire Protection Materials ^{2,3,4}	75 min " 60 mm 120 min " 100 mm
UL 1709	Structural Steel Fire Protection ^{2,4}	30 min " 20 mm 120 min " 60 mm 60 min " 30 mm 150 min " 70 mm 90 min " 50 mm
IMO	SOLAS Convention FTP Code	Compliant to Parts 2 & 5

[1] Compression resistance measured using a preload of 2 psi.

[2] Contact Aspen Aerogels for configuration details.

[3] 200 mm (8") pipe with a failure criteria of 400°C (752°F).

[4] Requires the use of stainless steel jacketing.