

AEROCEL[®]

TUBE & SHEET

Closed Cell Elastomeric Thermal Insulation for HVAC & R

General

AEROCEL[®] Tube and Sheet Insulation is a flexible, closed-cell and light weight EPDM based elastomeric material designed for insulating liquid cooling and heating lines. 3/8", 1/2", 3/4", 1", 1-1/4", 1-1/2" and 2" wall in popular I.D. sizes up to 6" IPS. The closed-cell structure of Aerocel Pipe Insulation makes it an efficient insulation.

Aerocel is manufactured to consistently provide actual values on these key performance criteria for mechanical system insulation:

Thermal Conductivity: 0.25

Water Vapor Transmission: 0.1

Fire Rating: Will not contribute significantly to fire (simulated end-use testing).

Aerocel Pipe Insulation in 3/8", 1/2", 3/4" and 1" thicknesses has a flame spread rating of 25 or less and a smoke developed rating of 50 or less as tested by ASTM E 84 "Surface Burning Characteristics of Building Materials."

Note: Numerical flammability ratings alone may not define the performance under actual fire conditions. They are provided only for use in the selection of products to meet limits specified.

Key Features

- UV Resistant
- Low thermal conductivity
- Easy to install
- 25/50 rated
- Versatile for heating, AC, refrigeration and plumbing

Now E84 25/50 through 2" Wall

Uses

AEROCEL[®] Insulation is used to retard heat gain and control condensation drip from cold-water plumbing, chilled water, and refrigeration lines. It also efficiently reduces heat flow for hot water plumbing, liquid heating and dual temperature piping. Aerocel sheet is used to insulate large OD pipes, chillers, vessels and tanks, and can be used as a duct liner or duct wrap. The recommended temperature usage range for Aerocel Insulation is -297°F to +257°F.

Resistance to Moisture Vapor Flow

The closed-cell structure of Aerocel Insulation effectively retards the flow of moisture vapor, and Aerocel is considered a low transmittance vapor retarder. Aerocel requires no supplemental vapor retarder protection.



Application

AEROCEL® Pipe Insulation in unslit tubular form can be slipped onto piping before it is connected, or it can be slit lengthwise and snapped over piping already connected. Butt joints and seams are to be sealed with contact adhesive; therefore, both surfaces to be joined are coated with adhesive. Aerocel is designed for installation above and below ground, indoors and outdoors. No protective finish is required.

In addition to the specifications listed below, Aerocel also conforms to the following: ASTM C 534, NY City MEA #171-04-M, City of LA RR-8413, UL 181 Section 12 Mold Growth/Humidity, ASTM G 21 Fungal Resistance Test, UL 181 Section 17 Air Erosion, UL 723, NFPA 90A & 90B, MIL 15280J.

Specifications

PHYSICAL PROPERTIES			AEROCEL				TEST METHOD	
CELL STRUCTURE			CLOSED CELL				—	
DENSITY Lbs/ft ³ (gm/cm ³)			3/6 Lbs/ft ³				ASTM D 1667	
THERMAL CONDUCTIVITY BTU.in/ft. ² hr. °F	Mean temp.	-4°F (-20°C)	32°F (0°C)	75°F (24°C)	90°F (32°C)	104°F (40°C)	ASTM C177	
	K-value	0.22	0.23	0.25	0.26	0.27		
SERVICE TEMP			-297°F to 257°F -57°C to +125°C				AEROCEL loses flexibility at -70°F. This does not affect the insulating properties of the material.	
U.V. Weather Resistance			Excellent				ASTM G-7	
Ozone Resistance			No cracking				ASTM D 1171	
Water Vapor Permeability			0.10 perm-in (0.15 x 10 ⁻¹²)				ASTM E 96	
Water Absorption (weight %)			Less than 5%				ASTM D 1056	
Flammability, Smoke Density, Through 1" wall			UL-94 5 V-A, V-O				File E228536	
			25/50				ASTM E84	
			Self extinguishing				ASTM D 635	
Corrosion of copper, stainless			Non corrosive				DIN 1988	
Nitrosamine Contents			Not detected				U.S. FDA	
Flexibility			Excellent				ASTM C 534	



AEROCEL® Thickness Recommendation Data

Pipe Size	Line Temp. 60°F (15.5°C)	Line Temp. 50°F (10°C)	Line Temp. 35°F (1.7°C)	Line Temp. 0°F (-18°C)
3/8" ID Thru 3" IPS Over 3" IPS	Based on Normal Conditions Max. 85°F (29.4°C) 70% RH			
	1/4" * 3/8" *	3/8" 1/2"	1/2" 3/4"	1" 1-1/4"
3/8" ID Thru 3" IPS Over 3" IPS	Based on Mild Conditions Max. 80°F (26.6°C) 50% RH			
	1/4" * 3/8" *	3/8" 1/2"	3/8" 3/4"	3/4" 3/4"
3/8" ID Thru 3" IPS Over 3" IPS Thru 10" IPS Over 10" IPS	Based on Severe Conditions Max. 90°F (32.2°C) 80% RH			
	1/2" 3/4" 3/4"	3/4" 1" 1"	1" 1-1/8" 1-1/8"	1-1/2" 1-3/4" 2"
3/8" ID Thru 3" IPS Over 3" IPS Thru 10" IPS Over 10" IPS	Based on Extremely Severe Conditions Max. 90°F (32.2°C) 85% RH			
	3/4" 1" 1"	1" 1-1/4" 1-1/4"	1-1/4" 1-1/2" 1-1/2"	2" 2-1/2" 2-1/2"

* Although in some areas of the country, 1/4" and 3/8" wall thicknesses are recommended, Aeroflex USA recommends 1/2" minimum wall thickness for optimum performance



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