

Aerocel® REF™
Pipe Insulation for Refrigeration Systems





Aerocel[®] REF[™]

Piping Insulation for Refrigeration Systems Tubes & Stay-Seal[®] with Protape[®] (SSPT[™])

Supermarkets | Beverage Dispensing
Cryogenics | Food Processing | Cold Storage

Closed-cell elastomeric foam pipe insulation for refrigeration piping and other below ambient applications.

Proprietary blend of non-polar EPDM-rubber is the key to long-term moisture prevention, thermal performance and uninterrupted service of refrigeration systems.

Reliable performance for demanding applications

Prevents condensation/ice over a wide range of continuous service temperatures (-297°F to 257°F)

Withstands temperature spikes from hot gas defrost cycles

Built-in vapor retarder - No protective finish or vapor barrier required*

Superior application flexibility

Available in solid tubing for fast, slide-on installation on new piping OR pre-slit Stay-Seal[®] with Protape[®] SSPT[™] dual-tape closure system on existing systems

Wide range of sizes and thicknesses (see back)

Multiple color options: Black and White/Gray

Clean and safe

Superior fire safety - 25/50 rated (ASTM E84) and self-extinguishing (ASTM D635) thru 2-inch thick

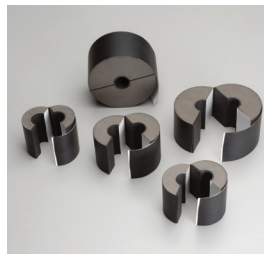
GREENGUARD Gold Certified for low chemical emissions (VOCs)

No CFCs, HFCs, HCFCs, PBDEs, formaldehyde, Nitrosamine or fibers

Naturally mold-resistant: no biocides required



All-inclusive solutions for refrigeration systems:



Aerofix[®]

Light-weight, rigid pipe supports, pre-insulated with closed-cell EPDM foam rubber and encased with zero-perm EPDM polymer membrane. Includes built-in pressure sensitive Protape[®] closure system.



AeroFit[™]

Pre-fabricated fitting insulators made of closed-cell EPDM rubber for fast installation on hot/cold-water and refrigerant piping.



Protape[®]

EPDM-based, self-adhering rubber tape for sealing butt joints and termination points.



Aeroflex Adhesives

Specially formulated adhesive for bonding of Aerocel insulations. Fast tack and LVOC formulations available.

*Vapor barrier may be required in extreme low-temperature or extreme high-humidity applications. Protective jacket required for direct-bury applications and if insulation may be subjected to mechanical damage.

Product: Closed-cell EPDM (Ethylene Propylene Diene Monomer)-based rubber elastomeric foam pipe insulation for refrigeration lines.

Standard Specification: ASTM C534 Type I Grade 1

Thermal Conductivity (K) Btu-in/hr-Ft² -°F (W/m.K)

Mean Temperature	K Value	Test Method
75°F (24°C)	0.245 (0.0353)	ASTM C518 /C177
90°F (32°C)	0.250 (0.0360)	

Physical and Operational Properties

Property	Test Value/Rating	Test Method
Service Temperature, CONTINUOUS	-297°F to +257°F -183°C to +125°C	ASTM C411 ¹
U.V. Resistance	Minimal Cracking or color change	ASTM G7
Ozone Resistance	No cracking	ASTM D1171
Water Vapor Permeability, Max	0.03 perm-inch (4.38 x 10 ⁻¹¹ g/Pa.s.m)	ASTM E96
Water Absorption (% by Volume), Max	0.2%	ASTM C209
Fire Safety Characteristics thru 2" thickness	Class V-O	UL 94
	25/50	ASTM E84
	Pass	NFPA 90A/90B
	Self-extinguishing	ASTM D635
Corrosion of Stainless Steel	Non-corrosive	ASTM C692, DIN 1988
Fungi Resistance	No Growth	ASTM C1318/G21
Mold Resistance	No Growth	UL181 Section 13
Flexibility	Pass	ASTM C534
Air Erosion	Pass	UL181 Section 18

Additional Approvals, Compliances, Etc.

ASTM D1056, 2C1	Standard Specification for Flexible Cellular Materials–Sponge or Expanded Rubber (2C1- Closed Cell Rubber, Oil resistant with medium mass change, Compression Deflection of 2 - 5 psi.)
ANSI/ASHRAE/ICC/USGBC/IES Standard 189.1	International Green Construction Code® (igCC®)
ANSI/ASHRAE/IES Standard 90.1	Energy Standard for Buildings Except Low-Rise Residential Buildings
IECC®	International Energy Conservation Code®
CA Title 24	California Building Energy Efficiency Standards
MEA #171-04-M	City of New York Material and Acceptance Pipe Insulation
CDPH Specification 01350	California Department of Public Health (VOC Emissions)
LEED®	U.S. Green Building Council - Leadership in Energy and Environmental Design
REACH	European Chemicals Agency (ECHA) - Registration, Evaluation, Authorization and Restriction of Chemicals
RoHS	European Union - Restriction of Hazardous Substances
MIL-P-15280 (Form S, Form T)	U.S. Department of Defense - Qualified Products List (06/24/2005)

Potential LEED® Credit Contributions

Energy & Atmosphere (EA)	Prerequisite: Minimum Energy Performance Credit: Optimize Energy Performance
Indoor Environmental Quality (EQ)	Credit: Low-Emitting Materials Credit: Indoor Air Quality Assessment Credit: Thermal Comfort Credit: Acoustic Performance
Innovation (IN)	Credit: Occupant Comfort Survey

¹ AEROCEL flexibility begins to decrease at -70°F and below.
This does not impact the insulating properties of the material.



Aerocel® REF™ Pipe Insulation R-Values

Pipe Size (in)	IPS (in)	Wall Thickness						
		1/4 in	3/8 in	1/2 in	3/4 in	1 in	1-1/2 in	2 in
1/4		1.7	3.0	4.0	6.7	10.0	17.5	
3/8		1.6	2.7	3.6	6.0	9.0	15.8	24.0
1/2	1/4	1.5	2.5	3.4	5.5	8.3	14.4	21.9
5/8	3/8	1.4	2.4	3.2	5.2	8.0	13.5	20.6
3/4		1.4	2.3	3.1	5.0	7.7	13.0	19.7
7/8	1/2	1.3	2.3	3.2	5.3	7.4	12.9	18.5
1-1/8	3/4	1.3	2.1	3.0	5.0	6.9	12.1	17.3
1-1/4		1.3	2.1	3.1	5.0	6.6	11.4	16.3
1-3/8	1	1.3	2.1	3.1	5.0	6.5	11.3	16.2
1-5/8	1-1/4	1.2	2.3	3.0	4.8	6.3	11.1	15.9
1-7/8	1-1/2	1.2	2.2	2.9	4.7	6.0	10.6	15.2
2-1/8		1.2	2.2	3.0	4.6	5.9	10.3	14.8
2-3/8	2	1.2	2.2	3.0	4.5	5.8	10.0	14.3
2-5/8		1.2	2.2	2.9	4.4	5.7	9.8	14.0
2-7/8	2-1/2	1.2	2.1	2.9	4.3	5.5	9.5	13.6
3-1/8		1.2	2.1	2.9	4.3	5.5	9.4	13.4
3-1/2	3	1.2	2.1	3.0	4.2	5.3	9.1	12.9
3-5/8		1.2	2.1	3.0	4.2	5.3	9.1	12.9
4-1/8		1.1	2.1	2.9	4.1	5.2	8.9	12.5