



AEROCEL[®] ULP[®]

ULP[®] Tube and Sheet Insulation

General

Aerocel[®] ULP[®] tube and sheet insulation is a highly flexible, closed-cell and lightweight EPDM-rubber based elastomeric product. Aerocel ULP[®] tube and sheet insulation is designed for insulating warm or cold piping, duct, or equipment. The unique formulation of Aerocel ULP provides exceptionally low water transport properties, resulting in water vapor permeance and water absorption characteristics far lower than industry-standard values for vapor retarder products. This allows Aerocel ULP to be used without the need for added vapor retarders in most common HVAC and plumbing applications to meet stringent water vapor transmission and water absorption requirements. The tightly formed, closed-cell structure of Aerocel ULP[®] pipe and sheet insulation makes it an efficient insulation, providing insulating capacity superior to many materials, including other elastomeric insulations. Aerocel ULP[®] EPDM elastomeric tube and sheet insulation is supplied in 1/4", 3/8", 1/2", 3/4", 1", 1½" 2", 2½" and 3" thicknesses, in popular I.D. sizes up to 16" IPS, and as flat sheets and rolls. **Check for specific size combination availability.**

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

Thermal Conductivity: 0.245

Water Vapor Transmission, Perms: <0.01 perm-in.

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

Aerocel ULP pipe and sheet insulation, in 1/4" through 2" thickness, 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." **Aerocel ULP EPDM pipe and sheet insulation is acceptable for use in air distribution systems including ducts, plenums, air handling equipment and air terminal devices, meeting the fire response properties and service temperature requirements detailed in NFPA 90A and NFPA 90B for plenum usage.**

Uses

Aerocel[®] ULP pipe insulation is used to retard heat gain or loss, and to provide exceptional control of condensation formation, without added vapor control products, on cold water plumbing, chilled water and traditional refrigeration systems. Aerocel ULP also provides exceptional water and water vapor transport resistance to enhance insulation systems on industrial refrigeration

and cryogenic service lines. The material also efficiently reduces heat flow on hot water plumbing, liquid heating and dual temperature piping systems. Aerocel ULP[®] 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 service temperature range for Aerocel ULP insulation is -297°F to +257°F. **Aerocel ULP[®] is designed for installation above and below ground, indoors and outdoors. No protective finish is required.**

Aerocel ULP[®] pipe insulation is uniquely suited, over many other cellular or fibrous insulation materials, to dual temperature HVAC piping systems including VRF/VRV piping systems. This unique fit results from Aerocel ULP's proprietary combination of exceptionally low moisture vapor flow for times of cooling-mode operation, higher temperature usage properties during times of heating-mode operation, and superior insulating capacity in either operating mode. Aerocel ULP[®] pipe insulation is uniquely suited to solar piping systems because of its proprietary combination of UV Resistance, higher service temperature, greater thermal efficiency, non-corrosiveness to copper or stainless steel, and availability as single layer product in greater thicknesses.

Resistance to Moisture Vapor Flow

The unique cell structure and composition of Aerocel ULP[®] EPDM insulation effectively retards the flow of moisture vapor. Aerocel ULP is a low-transmittance vapor retarder, requiring no added vapor retarder coatings or jackets in most HVAC applications, including VRF/VRV piping systems. In normal service conditions, Aerocel ULP requires no supplemental vapor retarder protection. When used in extremely low-temperature service such as ammonia refrigeration or cryogenic piping systems, or extremely high humidity conditions, additional vapor barrier materials may be required.



Key Features

- UV Resistant – Added Weather Protection Not Required, Saves on First Cost and Maintenance
- Lower Thermal Conductivity – Saves Additional Energy Costs
- 257° Upper Use Limit – Greater Application Range – Cryogenic to Low Pressure Steam
- E 84 25/50 to 2" Thickness – Lowers Installation Costs with Fewer Layers
- Versatile for Heating, AC, Refrigeration, Solar, Plumbing, Ammonia, Cryogenics – Reduced Layers for All Systems
- Easy to install – Lowers Installation Costs, Keeps Job Cost as Estimated

Application

Aerocel ULP 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 that has already been installed. Butt joints and other seams are to be sealed with contact adhesive. Fittings can be fabricated from straight tubing or sheet. Larger diameter, curved, or flat surfaces can be insulated by adhering properly fabricated sheet sections to them. Consult the Aeroflex Installation Handbook for more complete installation

details and instructions. **Aerocel ULP® is designed for installation above and below ground, indoors and outdoors. No protective finish is required.**

In addition to the specifications listed below, Aerocel ULP also is approved by or conforms to the requirements of the following: ASTM C 534 Type I and II, NY City MEA #171-04-M, City of LA RR-8413, UL 181 Section 13 Mold Growth/Humidity, ASTM G 21 Fungal Resistance Test, UL181 Section 18 Air Erosion, NFPA 90A & 90B, MIL15280J, CAN/ULC-S102-07.

Marine Uses

Aerocel ULP has the following marine vessel certifications: Lloyd's Register IMO/SOLAS, DNV and ABS. These certifications allow for the use of Aerocel ULP in commercial marine vessels such as cruise ships, container ships, tanker vessels, offshore oil rigs and platforms, tugs, barges, ferries, research vessels, and other kinds of commercial marine vessels.

Aerocel ULP sheet and tube insulations meet the energy code requirements of International Energy Conservation Code (IECC) and ASHRAE for R-4 for Refrigeration Piping at 1" wall thickness.

PROPERTY	MEAN TEMPERATURE	RESULT, BTU·IN./HR·FT ² ·°F	RESULT, W/M·K	TEST METHOD
Thermal Conductivity	-238F / -150C	.113	.0163	ASTM C518/ ASTM C177
	-148F / -100C	.155	.0224	
	-20F / -29C	.212	.0306	
	0F / -18C	.219	.0317	
	75F / 24C	.244	.0352	
	122F / 50C	.255	.0368	
	187F / 86C	.274	.0395	
	302F / 150C	.339	.0488	
Cell Structure		Closed Cell		ASTM D1056
Fungi Resistance		No Growth		ASTM C1338 / G21 / UL181
Water absorption, % by volume		0.10%		ASTM C209
Water-vapor permeability, max.		.005 perm-inch		ASTM E96, Proc. A&B
Linear shrinkage, max. after soak at maximum use temperature		< 7%		ASTM C534
Service Temperature, CONTINUOUS	Upper	+257F	+125C	ASTM C411
	Lower	-320F	-196C	
Fire Safety Characteristics	File QMFZ2.E228536	PASS		UL 94 V-0
	Through 2" Thickness	Flame Spread < 25 Smoke Developed < 50		ASTM E84
		Self-Extinguishing		ASTM D635
U.V. Resistance		No Checking Slight Sigmoid Cracking Moderate Color Change		ASTM G7/G90
Ozone Resistance		NO CRACKING		ASTM D1171/D1149
Corrosion of Stainless Steel		PASS		ASTM C692
Flexibility		PASS		ASTM C534
Formaldehyde Emissions		NONE		CA01350
VOC Emissions		NONE		CA01350
CFC/HFC/HCFC Content		NONE		
PBDE Content		NONE		
Asbestos Content		NONE		
RoHS II Directive 2011/65/EU		Meets Requirements		



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