SUBMITTAL

AEROCEL

EPDM Sheet Insulation for Duct Lining and Wrapping

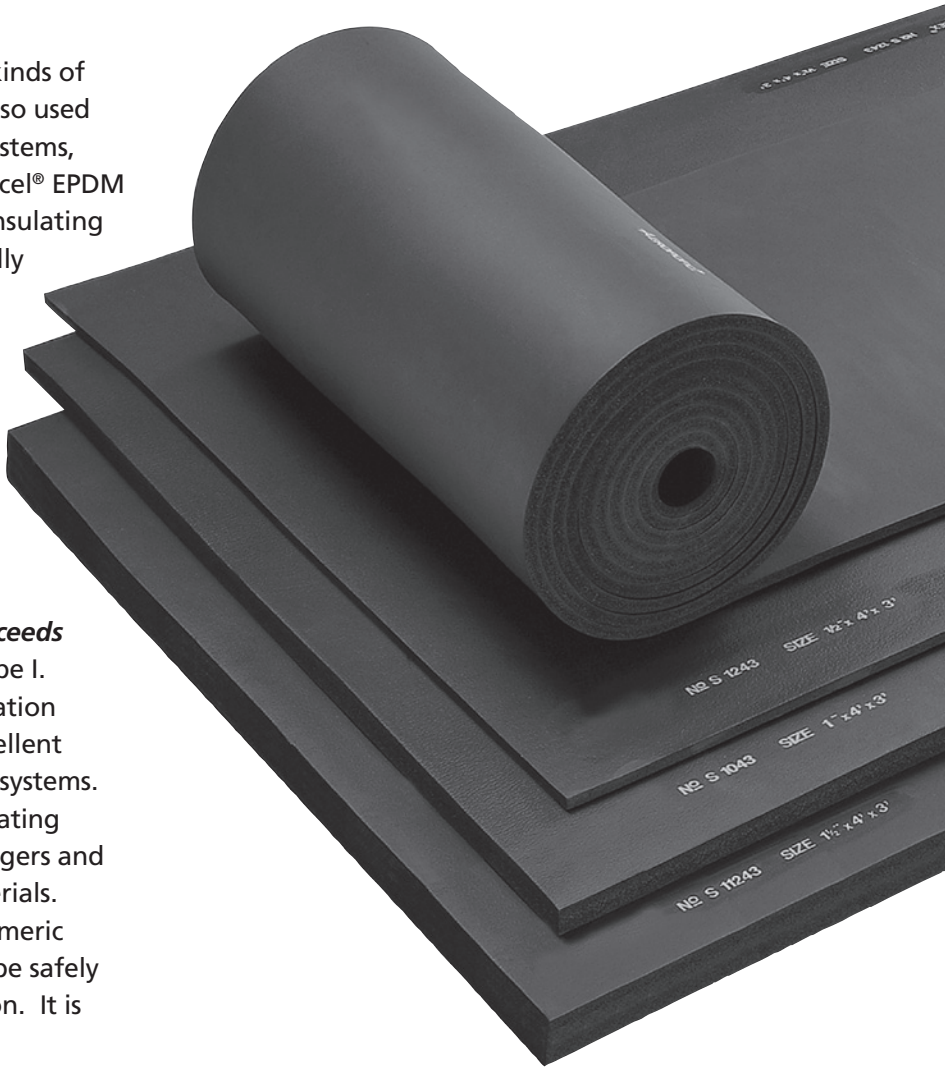
Aerocel® EPDM Elastomeric Sheet Insulation is a flexible closed cell and lightweight elastomeric material with a smooth and durable surface, designed for insulating air ducts internally and externally, air handling cabinets, air terminal devices, and more. With low moisture absorption and low water vapor transmission, Aerocel can be used both as an internal and external insulation for all kinds of ducting systems and air distribution system components, warm and cold. Ducts can be located indoors or outdoors, and Aerocel will be unaffected. Aerocel is available in 3' x 4' flat sheets and rolls suitable for automated duct liner application equipment, in thicknesses of 1/8", 1/4", 3/8", 1/2", 5/8", 3/4", 1", 1-1/4", 1-1⁄2" and 2".

Air Duct Systems

Besides being the ideal insulation for many kinds of piping systems and equipment, Aerocel® is also used as insulation for all kinds of HVAC ducting systems, including supply, return and intake air. Aerocel® EPDM Elastomeric Sheet is an excellent choice for insulating duct work, both internally lined and externally wrapped. Aerocel® sheet makes an ideal choice for HVAC duct systems because it is a low density, light weight product that also serves as an efficient acoustical absorber and an excellent thermal insulator reducing noise generated by equipment, cross-talk, air movement and the expansion and contraction noises of sheet metal ducts. Aerocel® EPDM elastomeric sheet and roll insulation is ***fully tested for and meets or exceeds*** the performance criteria of ASTM C 1534, Type I. Because of the highly efficient thermal insulation that Aerocel provides, Aerocel makes an excellent energy saving component of air distribution systems. Aerocel® has been favored over fibrous insulating materials mainly because of the possible dangers and health concerns with the use of fibrous materials. Aerocel®, made from special modified elastomeric material, ensures a long service life and can be safely handled without any concern of skin irritation. It is also not hazardous to health, so no special precautions are needed for application or service. Aerocel® offers superior resistance to moisture, fungus growth, vermin and rodent attack. Clean and easy to install, it offers a neat installed appearance because of its smooth surface.

Aerocel® sheet meets the standards stated in UL 181 for mold growth/humidity, air erosion and passes ASTM G 21 Fungal Resistance. See the complete line of specifications listed on back of this page.

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



Key Applications:

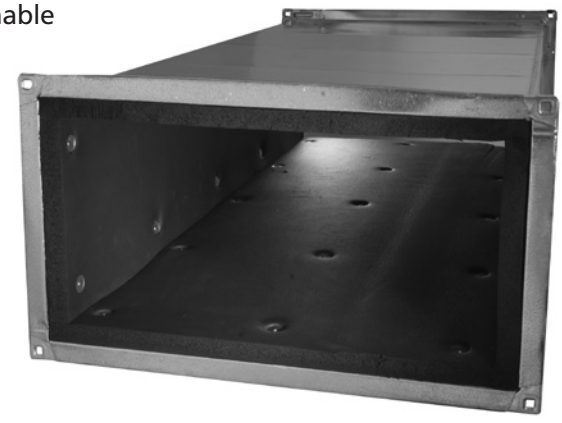
- Schools
- Hospitals
- Hotels
- Public Buildings
- Corrections Facilities
- Clean Rooms/Processing

IAQ and Sustainability Contributions of Aerocel EPDM Sheet and Roll for Air Distribution Systems

- Aerocel EPDM sheet and roll insulation is naturally resistant to microbiological growth. No additional biocides are required or added to meet stringent indoor air quality demands. No chance for emissions from biocides is attendant with the use of Aerocel.
- No VOC emissions when tested by CA 01350, the base Standard of LEED® and GreenGuard® for this property.
- No Formaldehyde emissions when tested by CA 01350, the base standard of LEED® and GreenGuard® for this property.
- Aerocel is produced using no CFCs, HFCs or HCFC's.
- Non-corrosive – Aerocel is the most non-corrosive elastomeric duct liner and will not cause or accelerate deterioration of the sheet metal it insulates.

Benefits

- Quiet Operation
- Energy Saving
- No Moisture-Generated Troubles
- Eases Compliance for IAQ Needs
- Accurate Air Delivery
- Resists Microbiological Growth
- Durable
- Cleanable



Aerocel can work efficiently as an insulation and sound dampening material internally and externally.

Installation Practices

Aerocel® EPDM elastomeric sheet is flexible and easy to use for a wide variety of jobs including large air ducts and inside air handling panels. When used in duct lining applications, SMACNA duct lining practices are to be used for gluing and pinning Aerocel® to the sheet metal. An ASTM C 916 compliant duct liner adhesive** is to be used. Different adhesives will yield different performance characteristics when holding Aerocel® to sheet metal. Duct liner pins that mechanically attach, weld, or adhere to the sheet metal, and have a shank length that is equal the thickness of the insulation must be used. After installation, and prior to occupancy, blow out duct system to remove any cutting scraps or foreign material remaining in the duct.

To suit different decorative purposes, Aerocel® can also be coated with Aerocoat, acrylic latex emulsion paint.

Installing two layers of material to meet a specific liner thickness is not recommended. If the specification forces the use of multiple layers, the following steps must be taken:

1. Adhere bottom layer of duct liner to duct in normal manner.
2. Adhere top layer to bottom layer of liner using a minimum of 90% adhesive coverage.
3. Treat all leading edges with metal nosings to prevent separation of the two layers.
4. Use mechanical fasteners of the proper length for double layer.

Specifications

In addition to the specifications listed below, Aerocel® EPDM sheet also conforms to the following standards or holds the following approvals/acceptances: ASTM C 534 Type II, ASTM C 1534 Type I, ASTM G 21 Fungal Resistance, UL 181 Section 12 Mold Growth/Humidity, UL 181 Section 17 Air Erosion, NY City MEA #171-04-M, City of LA RR-8413, NFPA 90A & 90B, and MIL 15280J.

Aerocel Sheet insulation meets the energy savings requirements of International Energy Conservation Code (IECC) and ASHRAE of R-4.1 at 1" wall thickness. Aerocel EPDM Elastomeric Sheet Insulation has inherent Microbial Resistance based on the standard composition of this superior insulator.

PHYSICAL PROPERTY	RESULT	TEST METHOD
Apparent Thermal Conductivity	0.245 k-Value	ASTM C 177 / C 518
Surface Burning Characteristics, Through 2" Thick	Flame Spread – 25 Max. Smoke Dev. – 50 Max.	ASTM E 84
	UL 94 5V-A, V-O	UL File E228536
	Self-Extinguishing	ASTM D 635
Service Temperature, CONTINUOUS	-297°F to +300°F -183ºC to +150ºC	ASTM C 411
Water Vapor Sorption	0.00 % max.	ASTM C 1104
Water Absorption	0.2% max	ASTM C 209
Water Vapor Permeability	.03 perm (4.38 x 10-11)	ASTM E 96
Dimensional Stability	7% max.	ASTM C 356
Odor Emission	Pass	ASTM C 1304
Corrosiveness	Pass	ASTM C 665 / C 692 / DIN 1988
Fungi/Resistance	No Growth	ASTM C 1338 / G 21 / UL181
Erosion Resistance	Pass	ASTM C 1071 / UL181
Rated Air Velocity	4000 FPM	ASTM C 1071
Noise Reduction Coefficient	½" thick - .20 1" thick - .35	ASTM C 423
Formaledehyde Emissions	None	CA 01350 (basis of GreenGuard®)
VOC Emissions	0	CA 01350 (basis of GreenGuard®)
UV Resistance	Excellent	ASTM G 7/G 90
Ozone Resistance	No Cracking	ASTM D 1171
Nitrosamine Content	None Detected	U.S. FDA CPG No. 7117.11 BSEN 12868

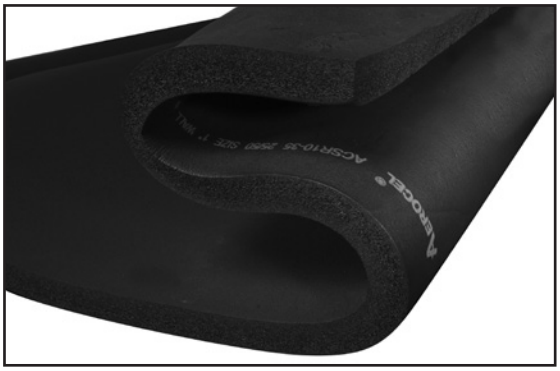
THICKNESS	3/8"	1/2"	3/4"	1"	1-1/2"	2"
R-value	1.5	2	3.1	4.1	6.1	8.2

SOUND ABSORPTION COEFFICIENTS, ASTM C423 TYPE "A", MOUNTING PRACTICE E 795								
Frequency, Hz	125	250	500	1000	2000	4000	NRC	SAA
Type I: 1⁄2 in. (13 mm)	0.03	0.06	0.08	0.27	0.47	0.23	0.20	.22
1 in. (25 mm)	0.05	0.07	0.45	0.52	0.31	0.31	0.35	.39
1-1/2 in. (38 mm)	0.03	0.19	0.93	0.24	0.25	0.24	0.40	.36
2 in. (50mm)	0.08	0.81	0.36	0.48	0.36	0.40	0.50	.47

**Acceptable Adhesives for Duct Lining, MEI 22-24 Eco-Spray N.F. Adhesive, Foster® 85-65 STIC-FAS ADHESIVE

Resistance to Moisture Vapor Flow and Environment Moisture Absorption

The unique cell structure of Aerocel® EPDM Insulation effectively retards the flow of moisture vapor and liquid. Aerocel is considered a low transmittance vapor retarder, offering the best water vapor transmission rating of any air distribution system insulation material available. In most HVAC air distribution conditions, Aerocel requires no supplemental vapor retarder protection.



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