



# AEROCEL<sup>®</sup> SaniGuard<sup>™</sup>

## Aerocel EPDM Insulation with SaniGuard

### General

Aerocel EPDM pipe insulation with SaniGuard is a closed-cell and lightweight EPDM-rubber based elastomeric product that includes a highly cleanable surface jacket. Aerocel EPDM Pipe insulation with SaniGuard is designed for insulating warm or cold piping in applications where exceptional cleanliness during operation is required. Aerocel EPDM elastomeric pipe insulation is supplied in 1/2", 3/4", 1", 1-1/2", 2" thicknesses, in a select group of inside diameters. Please check for specific size combinations. The tightly formed, closed-cell structure of Aerocel EPDM pipe insulation makes it an efficient insulation, providing superior insulating capacity to many materials, including other elastomeric insulations. SaniGuard PVC jacket provides a highly, cleanable, liquid repellent, abrasion-resistant surface. Aerocel is

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

**Thermal Conductivity:** 0.245

**Water Vapor Transmission, Perms:** 0.03 for Aerocel Insulation, .02 for SaniGuard

**UV Resistance:** ASTM G 7 and ASTM G 90

**Fire Rating:** Will not contribute significantly to fire (simulated end-use testing). Aerocel EPDM pipe insulations, 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." SaniGuard also provides and ASTM E84 flame spread rating of 25 or less and a smoke developed rating of 50 or less.

**Aerocel EPDM Elastomeric Insulation provides inherent microbial resistance based on the standard composition of this superior insulator. No microbiocides are required to mitigate microbial activity.**



## Uses

Aerocel EPDM pipe insulation with SaniGuard is used to retard heat gain or loss, and to control condensation formation on cold water plumbing, chilled water, and refrigeration lines in applications where ongoing housekeeping and maintenance require frequent and repeated cleaning of the insulation system surface. Aerocel EPDM elastomeric pipe insulation with SaniGuard is easy to use for a wide variety of projects including food production facilities, refrigerated storage facilities, pharmaceutical production and processing facilities, grocery refrigerated/frozen food storage and display cases. The material efficiently reduces heat flow on hot water plumbing, hydronic heating and dual-temperature piping systems while allowing for repetitive cleaning operations. The recommended service temperature range for Aerocel Insulation is -297°F to +257°F. SEE TEMPERATURE LIMITS FOR SaniGuard jacket. Aerocel EPDM Pipe insulation is uniquely suited, over many other cellular or fibrous insulation materials, for dual-temperature HVAC piping systems. This unique fit results from Aerocel's proprietary combination of very 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 EPDM Pipe insulation is uniquely suited to solar piping systems because of its proprietary combination of UV Resistance, greater thermal efficiency, non-corrosiveness to copper or stainless steel, and availability as single layer product in greater thicknesses. **Aerocel EPDM pipe insulation with SaniGuard can be installed indoors and outdoors without concern for degradation of the system. Aerocel and SaniGuard are both UV resistant materials.**

## 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. SEE CAUTION FOR SaniGuard TEMPERATURE LIMIT.
- E 84 25/50 to 2" Thickness – Lowers Installation Costs with Fewer Layers
- Versatile for Heating, AC, Refrigeration, Solar, Plumbing – Single Product for All Systems
- Easy to install – Lowers Installation Costs, Keeps Job Cost as Estimated

## Aerocel Specifications

PHYSICAL PROPERTY	RESULT	TEST METHOD
Apparent Thermal Conductivity @ 75°F Mean	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
	V-O	UL 94
	Self-Extinguishing	ASTM D 635
Service Temperature, Continuous	-297°F to +257°F (-57°C to +125°C) -297°F to +257°F – SSPT Insulation	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 <sup>-11</sup> )	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
UV Resistance	Good	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

## Resistance to Moisture Vapor Flow

The unique cell structure of Aerocel EPDM Insulation effectively retards the flow of moisture vapor. Aerocel is considered a low transmittance vapor retarder. In normal service conditions, Aerocel requires no supplemental vapor retarder protection. When used in extremely low-temperature or extremely high humidity conditions, an additional vapor barrier may be required.

## SaniGuard Barrier

SaniGuard is a high gloss, opaque, water, weather and ultraviolet resistant system designed for both indoor and outdoor use on industrial and commercial piping systems. It is easy to install, can be hermetically sealed, and has excellent resistance to abrasion, chemicals, corrosion, rust, and accidental impact. SaniGuard is formed to the outside diameter and shape of the insulation system. Pipe insulation jacketing includes straight-run piping, as well as fitting shapes (ells, tees, valves, caps, etc.). When correctly installed with SaniGuard Welding Adhesive, white SaniGuard jacketing creates a complete seal that meets FDA and USDA standards.

## Application

**IT IS CRITICAL FOR THE DESIGNER TO SPECIFY A SUFFICIENT THICKNESS OF INSULATION TO KEEP THE EXTERIOR SURFACE OF THE SYSTEM BELOW 150°F. FAILURE OF THE SaniGuard SURFACE CAN BE EXPECTED IF THE EXTERIOR SURFACE OF THE SYSTEM EXCEEDS THIS TEMPERATURE.**

- Remove the SaniGuard barrier from the Aerocel EPDM pipe insulation or AeroFit™ EPDM insulating fitting cover, as the product is removed from the carton. SaniGuard is provided without firm attachment to the Aerocel EPDM insulation to allow for ease of

installation, adjustments required during installation, and movement of the system during its service life.

- Split the Aerocel EPDM pipe insulation longitudinally and use AeroSeal Adhesive to reseal the seam. In some cases, Aerocel with SaniGuard can be slipped over the pipe before the pipe sections are joined, without removing the jacket. In these instances, the butt ends of the Aerocel are all that needs to be sealed before closing the SaniGuard. An alternative is to use the dual-direction pressure sensitive closure of Aerocel Stay-Seal® with Protape(SSPT). This feature must be ordered at the time of purchase of the product.
- Butt end seams of the insulation are joined using AeroSeal Adhesive, or Cel-Link II and Protape, according to standard application practice.
- The SaniGuard jacket is re-applied over the Aerocel insulation, taking care not to damage the surface of the Aerocel insulation with the edges of the SaniGuard jacket. Place the overlap of SaniGuard so it faces downward, allowing for water to shed from the system. Ideally, the overlap will be placed in the 4 o'clock or 8 o'clock positions, out of sightlines, providing a neat, clean appearance. Do not face the lap up or position higher on the piping system than the horizontal



center-line of the pipe. Tightly fit SaniGuard jacket to the Aerocel, leaving no gap between jacket and pipe insulation.

- Seal the overlap of the SaniGuard using the pressure-sensitive adhesive strip supplied on the product. Peel the release liner in steps, adhering the lap a portion at a time. Apply pressure to the overlap to provide a proper bond.
- SaniGuard is intentionally produced 2" longer than the section of pipe insulation being covered. This affords a 2" overlap at the ends. If pieces need to be cut, always plan to provide minimum of a 2" overlap at the end.
- When re-applying the SaniGuard over the system, it is advisable to apply the preformed fittings first, then overlap the straight run sections onto the legs of the fittings. Fitting closure overlaps are sealed using SaniGuard 2" wide white PVC tape. When applying SaniGuard tape. **DO NOT STRETCH THE TAPE.** It will shrink to recover its original shape, loosening edges,

requiring repair to stop this. Apply all materials so seams and overlaps are out of major sight lines.

- After the SaniGuard has been installed on a sufficient amount of work, seal the outside of the butt seams and the longitudinal overlaps with 2" wide white SaniGuard tape. Apply the tape to the butt seams providing a minimum of a 2" overlap of the tape end. Apply a continuous strip to the longitudinal seam, dividing the width of the tape evenly across both sides of the seam. **DO NOT STRETCH THE TAPE.** It will shrink to recover its original shape. Be sure overlaps are out of major sight lines. **SELF ADHESIVE PRODUCTS REQUIRE A CLEAN, DRY SURFACE TO PROPERLY ADHERE. SUFFICIENT PRESSURE MUST BE APPLIED TO THE ENTIRE SURFACE TO ENSURE A PROPER BOND TO THE SURFACE BEING SEALED.**

Aerocel EPDM Pipe insulation with SaniGuard also conforms to the following standards or holds the following approvals/acceptances: ASTM C 534.

## SaniGuard Jacket Physical Properties

PHYSICAL PROPERTY	RESULT	TEST METHOD
Surface Burning Characteristics, @ 30 mils	Flame Spread – <25 Smoke Dev. – <50	ASTM E 84
	V-O	UL 94
Service Temperature	-20°F to +150°F	Internal
Water Vapor Permeability	.02 perm	ASTM E 96
Specific Gravity	1.44	ASTM D 792 @ 100 mils
Rockwell Hardness	112R	ASTM D 785 @ 250 mils
Tensile Strength @ yield	6400 PSI	ASTM D 882 @ 30 mils
Elongation @ Failure	61%	ASTM D 882 @ 30 mils
Tensile Modulus	370,000 PSI	ASTM D 882 @ 30 mils
Flexural Strength	11,600 PSI	ASTM D 882 @ 125 mils
Izod Impact	73°F 3.0 ft. lbs./inch 32°F 1.7 ft. lbs./inch -20°F 1.1 ft. lbs./inch -40°F 1.0 ft. lbs./inch	ASTM D 256 @ 125 mils
Emissivity	.91	Internal
UV Resistance	Good	Internal



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