

INSUL-LOCK® Seam-Seal 3-Foot

Flexible Closed-Cell Insulation

Designed for the HVAC/R Industry



DESCRIPTION

INSUL-LOCK® Seam-Seal is pre-slit, closed-cell elastomeric insulation with a factory-applied pressure sensitive adhesive applied to both seam surfaces.

Designed to retard heat flow and prevent condensation, INSUL-LOCK® Seam-Seal is environmentally friendly, CFC-free and flexible. Available up to 1" wall thickness and 4" IPS, INSUL-LOCK® Seam-Seal's key physical properties are approved through supervision by Factory Mutual Research Corporation.

INSUL-LOCK® Seam-Seal is non-porous and fiber-free. An EPA-registered antimicrobial agent is incorporated into the product to provide additional protection against mold, fungal and bacterial growth.

INSUL-LOCK® Seam-Seal is GREENGUARD® certified for low VOC content and meets the requirements of the "Children and Schools" classification and "Microbial Resistance" listing.

APPLICATIONS

INSUL-LOCK® Seam-Seal has excellent thermal insulation properties and cold weather flexibility, and is used on refrigerant lines, cold water plumbing, roof drains and chilled water systems.

INSUL-LOCK® Seam-Seal is recommended for applications ranging from -70°F to 200°F (-57°C to 93°C) for both new and existing applications and can be used with heat tracing/heat tapes. For best results, store and install INSUL-

LOCK® Seam-Seal at temperatures above 40°F (4°C).

INSUL-LOCK® Seam-Seal's closure system is designed to save labor costs, particularly on straight runs. It greatly reduces the use of contact adhesives, allowing for improved working conditions and compliance with OSHA requirements.

INSTALLATION

INSUL-LOCK® Seam-Seal is designed for quick and easy installation: slip on the tube, pull built-in release liners, pinch tube shut and apply pressure at the seams. **The seam should be positioned on the bottom of the pipe.** See technical bulletin for installation instructions in cold temperatures.

All butt joints must be sealed with an approved contact adhesive. K-Fit™ factory-fabricated fittings are available for pipe bends and intersections.

OUTDOOR APPLICATIONS

INSUL-LOCK® Seam-Seal is made from a UV-resistant elastomeric blend. However, when subject to severe UV exposure (rooftop applications) or where optimum performance is required, K-Flex® 374 Protective Coating or approved jacketing or cladding should be used. Similar to indoor applications, **the seam should be positioned on the bottom of the pipe.**

FEATURES & BENEFITS

- Faster installation
- Easier handling
- Ideal for straight runs
- Less use of contact adhesives

RESISTANCE TO MOISTURE VAPOR FLOW

The closed-cell structure of INSUL-LOCK® Seam-Seal effectively retards the flow of moisture vapor and is considered a low transmittance vapor retarder. For most indoor applications, INSUL-LOCK® Seam-Seal needs no additional protection.

Additional vapor barrier protection may be necessary for INSUL-LOCK® Seam-Seal when installed on low temperature surfaces that are exposed to continuous high humidity.

FLAME AND SMOKE RATING

INSUL-LOCK® Seam-Seal pipe insulation in thicknesses up to 1" (25 mm) has a flame spread rating of 25 or less and a smoke development rating of 50 or less as tested by ASTM E 84 Method of Testing: "Surface Burning Characteristics of Building Materials." INSUL-LOCK® Seam-Seal is acceptable for use in duct/plenum applications meeting the requirements of NFPA 90A/B.

Numerical flammability ratings alone may not define the performance of products under actual fire conditions. They are provided only for use in the selection of products to meet limits specified, when compared to a known standard.

SPECIFICATION COMPLIANCE

ASTM C 534 Type 1 (Tubing), Grade 1
ASTM D 1056-00-2C1
New York City MEA 186-86-M Vol. V
USDA Requirements

UL 94-5V Flammability Classification (Recognition No. E300774)
ASTM E 84 1" 25/50-tested according to UL 723 and NFPA 255
Complies with requirements of CAN/ULC S102-03

FMRC Approval Guide
Chapter 14 Pipe Insulation

Meets requirements of NFPA 90A
Sect. 2.3.3 for Supplementary Materials for Air Distribution Systems

Meets requirements of ASTM C 411 (Test Method for Hot Surface Performance of High Temperature Thermal Insulation)

Meets requirements of UL 181 sections 11.0 and 16.0 (Mold Growth/Air Erosion)



INSUL-LOCK® Seam-Seal 3-Foot Pipe Insulation

PRODUCT DATA

Physical Properties		INSUL-LOCK® Insulation	Test Methods
Thermal Conductivity (K)	90°F (32°C) Mean Temp	.27 (.039)	ASTM C 177/C 518
BTU - in/hr - Ft ² - °F (W/mK)	75°F (24°C) Mean Temp	.25 (.036)	ASTM C 177/C 518
Density		3-6 PCF	ASTM D 1622/D 3575
Operating Temperature Range		200°F (93°C)	
Upper			
Lower		-70°F (-57°C)	
Water Vapor Permeability Dry Cup. Perm-In		<0.06	ASTM E 96
Water Absorption %		<0.20 by volume	ASTM C 209
Flame Spread (up to 1" wall)		Not greater than 25	ASTM E 84
Smoke Developed (up to 1" wall)		Not greater than 50	ASTM E 84
Ozone Resistance		Pass	ASTM D 1171
Chemical/Solvent Resistance		Good	
Mildew Resistance/Air Erosion		Pass	UL 181

Thickness Recommendations* - To Control Condensation

Pipe Size	Line Temp 50°F 10°C		Line Temp 35°F 2°C		Line Temp 0°F -18°C		Line Temp -20°F -29°C	
	Normal Conditions (Max 85°F, 29°C - 70% R.H.)							
3/8" I.D. thru 1-3/8" I.D.	3/8"	10 mm	1/2"	13 mm	3/4"	19 mm	1"	25 mm
Over 1-3/8" thru 3" IPS	3/8"	10 mm	1/2"	13 mm	1"	25 mm	1"	25 mm
Over 3" IPS thru 4" IPS	1/2"	13 mm	1/2"	13 mm	1"	25 mm	1-1/4"	32 mm
Over 4" IPS	1/2"	13 mm	3/4"	19 mm	1"	25 mm	1-1/4"	32 mm
Mild Conditions (Max 80°F, 26°C - 50% R.H.)								
3/8" I.D. thru 2-1/8" I.D.	3/8"	10 mm	3/8"	10 mm	1/2"	13 mm	1/2"	13 mm
Over 2-1/8" thru 3" IPS	3/8"	10 mm	3/8"	10 mm	1/2"	13 mm	3/4"	19 mm
Over 3" IPS thru 4" IPS	1/2"	13 mm	1/2"	13 mm	3/4"	19 mm	3/4"	19 mm
Over 4" IPS	1/2"	13 mm	1/2"	13 mm	3/4"	19 mm	3/4"	19 mm
Severe Conditions (Max 90°F, 32°C - 80% R.H.)								
3/8" I.D. thru 1-1/8" I.D.	3/4"	19 mm	3/4"	19 mm	1-1/4"	32 mm**	1-1/4"	32 mm**
Over 1-1/8" thru 4" IPS	3/4"	19 mm	1"	25 mm	1-1/2"	38 mm**	1-1/2"	38 mm**

*INSUL-LOCK® in thickness noted within the specified temperature ranges will prevent condensation in indoor piping under design conditions defined below.

**Thickness recommendations above 1" can be sleeved to achieve thickness desired.

Normal: Maximum severity of indoor conditions seldom exceed 85° F and 79% R.H. in United States.

Mild: Typical conditions are most air-conditioned spaces and arid climates.

Severe: Generally found in areas where excessive moisture is introduced or in poorly ventilated areas where the temperature may be depressed below the ambient.

Under conditions of higher humidity, additional thickness of insulation may be required.

NOTE: Thickness recommendations calculated using 0.2575 K-factor (0.25 plus 3% test error allowance)

INSUL-LOCK® "R" Values

Pipe O.D. or Normal Insulation I.D.		R Value 3/8" (10 mm) wall	R Value 1/2" (13 mm) wall	R Value 3/4" (19 mm) wall	R Value 1" (25 mm) wall
3/8"	10 mm	2.6	3.5	5.5	—
1/2"	13 mm	2.5	3.3	5.2	—
5/8"	16 mm	2.4	3.2	5.3	7.4
3/4"	19 mm	2.3	3.0	5.3	7.3
7/8"	22 mm	2.2	3.1	5.3	7.0
1-1/8"	29 mm	2.3	3.1	5.5	7.1
1-3/8"	35 mm	2.1	3.1	5.2	7.2
1-5/8"	41 mm	2.5	3.1	5.2	7.1
1-1/2" IPS	—	2.4	3.0	5.0	6.7
2-1/8"	54 mm	2.5	3.2	5.0	6.8
2" IPS	—	2.5	3.1	4.9	6.6
2-1/2" IPS	64 mm	2.5	3.2	4.8	6.4
2-5/8"	67 mm	2.4	3.2	4.8	6.5
3-1/8"	79 mm	2.3	3.1	4.6	6.2
3" IPS	—	2.4	3.3	4.7	6.2
3-5/8"	92 mm	2.3	3.2	4.6	6.0
4-1/8"	105 mm	2.3	3.1	4.6	5.9
4" IPS	—	2.3	3.2	4.6	5.9

Note: "R" factors were calculated using a K factor of 0.2575 (0.25 plus 3% test error allowance at 75°F, 24°C mean temp.) and nominal wall thickness is each case. Lower operating temperatures will result in improved R values. Contact Technical Services for specific recommendations.



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