

**DESCRIPTION**

Micro-Lok fiber glass pipe insulation is made from glass fibers bonded with a thermosetting resin and produced in 36" (0.92 m) lengths. Jacketed with a reinforced vapor retarder facing and a factory-applied, longitudinal acrylic adhesive closure system, Micro-Lok insulation is designed for application temperatures from 0°F to 850°F (-18°C to 454°C). Micro-Lok insulation is used to insulate standard iron pipe, plastic pipe, and copper tubing. Section joints are sealed with butt strips, which are supplied from the factory.

The factory-installed tape system permits installation at ambient temperatures down to 20°F (-7°C) and will not soften or separate when exposed to high ambient temperatures and humidity.

**USES**

Micro-Lok fiber glass pipe insulation is suitable for installation over hot, cold, concealed and exposed piping systems with operating temperatures up to 850°F (454°C). Weather-protective jacketing is required for outdoor applications. Pipes operating below ambient temperatures require all joints to be sealed with the factory-applied, self-seal lap and butt strips.

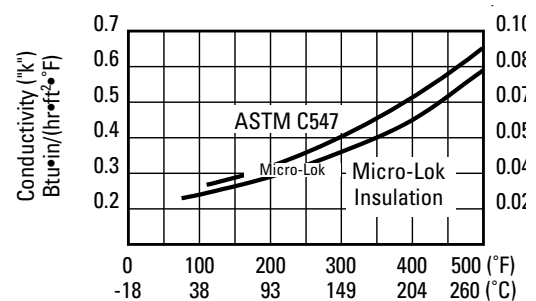
**PHYSICAL PROPERTIES**

Service Temp. Range	0°F to 850°F (-18°C to 454°C)
Moisture Sorption	<5% by weight
Alkalinity	<0.6% expressed as Na <sub>2</sub> O
Corrosivity	Does not accelerate
Capillarity	Negligible (after 24 hours)
Shrinkage	None
Fungi & Bacteria Resistance	Does not breed or promote
Surface Burning Characteristics	Composite FHC 25/50 per ASTM E84, UL 723, NFPA 255, CAN/ULC S102-M88
Limited Combustibility	NFPA 259
<b>Jacketing</b>	ASTM C1136 (Type I)
Water Vapor Permeance (ASTM E96 – Procedure A)	0.02 perms max.
Burst Strength (ASTM D774)	55 lbs/in <sup>2</sup> (4.6 Kg/cm <sup>2</sup> )
Tensile Strength (ASTM D828)	45 lbs./in. (7.9N/mm) width min. (MD) 30 lbs./in. (5.23N/mm) width min. (CD)

**SPECIFICATION COMPLIANCE**

ASTM C1136 (Jacketing) (Replaces HH-B-100B, Type I & II)  
 ASTM C547 Type I (Replaces HH-I-558B, Form D, Type III, Class 12, Class 13 up to 850°F [454°C])  
 ASTM C585 Dimensional Standard  
 MIL-DTL-32585  
 MIL-I-22344D, MIL-PRF-22344E  
 NRC 1.36, ASTM C795, MIL-I-24244C, MIL-DTL-24244D  
 New York City MEA # 330-85-M  
 NFPA 90A & 90B, FHC 25/50

**Operating Temperature Limits:** 0°F to 850°F (-18°C to 454°C)


**THERMAL CONDUCTIVITY ("K") \***


Mean Temperature	°F	75	100	200	300	400	500
	°C	24	38	93	149	204	260
<b>Btu•in/(hr•ft<sup>2</sup>•°F)</b>		0.23	0.24	0.28	0.34	0.44	0.55
<b>W/m•°C</b>		0.034	0.035	0.040	0.049	0.063	0.079

\*Apparent thermal conductivity values are determined by applying procedures dictated per ASTM C1045 on test data obtained using ASTM Test Method C335. All values are based on nominal manufacturing and testing parameters, are subject to normal variation, and are not guaranteed for specification purposes or otherwise.

**GREEN BUILDING ATTRIBUTES**

Manufacturing Location	Defiance, Ohio (43512)	
Volatile Organic Compounds (ASTM D5116)	Total	0.15 g/l
(Analysis ASTM D6196 & ASTM D5197)		
Fiber Glass Pipe Insulation	Formaldehyde	0.009 ppm
	Aldehydes	0.009 ppm
Volatile Organic Compounds (Calculated)	Total	<49 g/l
Self-Sealing Lap & Butt Strips		

**GREEN BUILDING CERTIFICATIONS**

GREENGUARD®	Certified
GREENGUARD® GOLD	Certified
LEED® Credits	
LEED-NC	See JM.com/buildgreen JM LEED Credit Guide (HIG-1231)

GREENGUARD® Certified products have been screened for more than 10,000 volatile organic compounds (VOCs) and meet stringent standards for low chemical emissions based on established criteria from key public health agencies.



**SIZE AVAILABILITY**

Insulation Thickness		Iron Pipe Size Range		Copper Tubing Size Range	
in	mm	in	mm	in	mm
½	13	½ – 6	13 – 152	⅝ – 4⅛ <sup>§</sup>	16 – 105
1	25	½ – 24	13 – 610	⅝ – 6⅛	16 – 156
1½	38	½ – 24	13 – 610	⅝ – 6⅛	16 – 156
2	51	½ – 24	13 – 610	1⅛ – 6⅛	29 – 156
2½	64	1 – 24	25 – 610	1⅜ – 6⅛	35 – 156
3	76	1 – 24	25 – 610	1⅜ – 6⅛	35 – 156
3½	89	1½ – 24*	38 – 610	–	–
4	102	3 – 24**	76 – 610	–	–
4½	114	3 – 24†	76 – 610	–	–
5	127	3 – 20‡	76 – 508	–	–

**Notes:**

\*2½" and 23" IPS not available in this insulation thickness.

\*\*22" and 23" IPS not available in this insulation thickness.

†21", 22" and 23" IPS not available in this insulation thickness.

‡19" IPS not available in this insulation thickness.

§3⅝" CTS not available in this insulation thickness.

**QUALIFICATIONS FOR USE**

A sufficient thickness of insulation must be used to keep the maximum surface temperature of Micro-Lok insulation below 150°F (66°C). In addition, at operating temperatures above 500°F (260°C), Micro-Lok pipe insulation must be applied in a thickness ranging from 2" (51 mm) minimum to 6" (152 mm) maximum.

During initial heat-up to operating temperatures above 350°F (177°C), an acrid odor and some smoke may be given off as the organic binders used in the fiber glass pipe insulation begin to decompose. When this occurs, caution should be exercised to ventilate the area well. This loss of binder does not directly affect the thermal performance of the pipe insulation, but the compressive strength and resiliency of the product are reduced. For applications with excessive physical abuse or vibration at high temperatures, consult your local Performance Materials Division Market Development Manager for alternate material recommendations.

**CHILLED WATER SYSTEMS**

For chilled water systems, see Chilled Water InsulSpec™ – 3-Part Specification, MECH-239.

**APPLICATION RECOMMENDATIONS\*****Micro-Lok Pipe Insulation and Butt Strips.**

1. Do not apply Micro-Lok insulation if air temperature is below 20°F (-7°C) or above 130°F (54°C) due to the effect of temperature on tape performance. We recommend stapling when application falls outside this temperature range.

When stapling, we recommend mastic be applied over staples to prevent moisture penetration.

2. If stored below 20°F (-7°C) or above 130°F (54°C), insulation cartons should stand within the recommended temperature range for 24 hours prior to application.

3. Once release paper is removed, both adhesive and lap must be kept free of dirt and water, and the lap sealed immediately.

4. When adhered, the lap and butt strips must be pressurized by rubbing firmly with a plastic squeegee or the back of a knife blade to ensure positive closure.

\*For complete application recommendations and installation instructions, see MECH-261 InsulSpec Specifications.



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The physical and chemical properties of MicroLok® fiberglass pipe insulation listed herein represent typical, average values obtained in accordance with accepted test methods and are subject to normal manufacturing variations. They are supplied as a technical service and are subject to change without notice. Numerical flame spread and smoke developed ratings are not intended to reflect hazards presented by these or any other materials under actual fire conditions.

**All Johns Manville products are sold subject to Johns Manville's standard Terms and Conditions, which includes a Limited Warranty and Limitation of Remedy. For a copy of the Johns Manville standard Terms and Conditions or for information on other Johns Manville thermal insulation and systems, visit [www2.jm.com/terms-conditions](http://www2.jm.com/terms-conditions) or call (800) 654-3103.**