

### Micro-Flex® Large-Diameter Pipe and Tank Wrap

#### Description

Micro-Flex large-diameter pipe and tank wrap is a 2.5 pcf (40.1 kg/m<sup>3</sup>) density product made from high-temperature, semi-rigid fiber glass blanket bonded to a flexible facing. Shipped in roll form, Micro-Flex's unique fiber orientation gives it increased compressive strength and permits close installation on round surfaces without reducing the thickness of insulation resulting in a loss of insulating efficiency. Both All Purpose (AP) and FSK facings are intended for indoor use, and AP facing may be painted with latex paint after installation. The ease of fit is particularly helpful on retrofit installations where existing insulation may result in nonstandard outside diameters.

#### Uses

Micro-Flex large-diameter pipe and tank wrap is ideally suited for application on rounded shapes such as pipes, tanks, ducts, vessels and other similar round and irregular shapes. For applications requiring a vapor seal, all joints and facing penetrations must be sealed.

#### Available Types and Sizes of Rolls

Micro-Flex is available in 3-foot (0.92 m) or 4-foot (1.22 m) wide rolls in either AP or FSK facings. For roll lengths, thicknesses and the amount of material per roll, please see List Price Schedule MFX-MI-1.

#### Advantages

**Easy to Apply.** For most applications, only a ruler, knife, 3- or 4-inch (76 mm or 102 mm) wide AP or FSK pressure-sensitive tape and stapler are required.

**Solid Glass Substrate.** The unique fiber manufacturing process results in a continuous monolithic mass of interconnected fibers. There are no segments that are prone to delaminate and fall out during handling and fabrication.

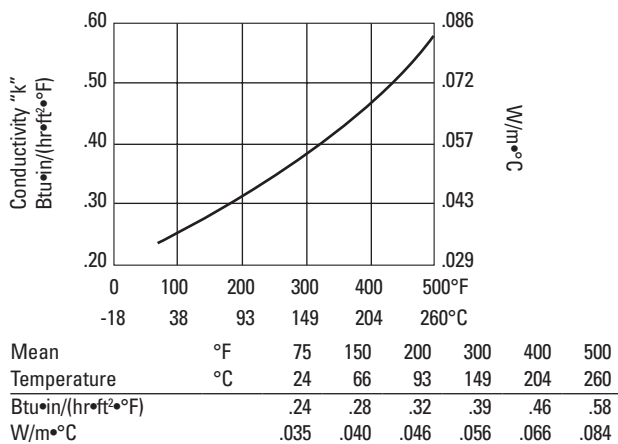
**Conforms Around Various Diameters and Shapes.** Due to the solid mass of fibers rather than cut-and-glued segments, even small diameter vessels can be wrapped without the worry of the "stop-sign effect."

**Low Thermal Conductivity.** The unique, uniform fiber orientation and a variety of thicknesses provide a dependable thermal conductivity ("k") of .24 Btu•in/(hr•ft<sup>2</sup>•°F) at 75°F mean temperature (.035 W/m•°C at 24°C).

**Superior Strength.** The unique fiber manufacturing process results in a highly durable product that exhibits excellent handling properties during shipping and installation.

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

#### Thermal Conductivity "k" (ASTM C 518)



**Shot-Free Glass Fibers.** Due to the advanced fiber-manufacturing process and latest advances in binder technology, Micro-Flex can stand up to the rigors of heavy vibration.

**Long Lasting.** The continuous fiber blanket remains intact compared to the 4-inch (102 mm) wide strips of conventional pipe and tank insulation, which tend to loosen or fall out over time when the adhesive dries out.

#### Specification Compliance

ASTM C 1393, Type III  
ASTM E 84  
New York City MEA #360-03-E

#### Installation

When applying, simply determine the circumference of the piece being insulated (remember to add twice the thickness of insulation being used to the diameter). Add 2 to 4 inches (51 mm to 102 mm) for lap seam and cut to length. Remove 2 to 4 inches (51 mm to 102 mm) of glass to provide for the lap. Care should be taken to not cut through the facing. Lap seams should be stapled with outward-clinching staples placed on maximum 4-inch (102 mm) centers. For vapor retarder applications, the staples must be coated with a vapor retarder mastic for a complete vapor seal. All longitudinal and circumferential joints should be sealed with a 3- or 4-inch (76 mm or 102 mm) wide pressure-sensitive tape. For some applications, banding may be required for additional securement.

\*A sufficient thickness of properly installed insulation must be used to prevent insulation surface temperature from exceeding 150°F (66°C). A minimum 1½-inch (38 mm) thickness of insulation is required for operating temperatures above 350°F (177°C).

Note: For additional application or installation recommendations, please consult Johns Manville.

#### Physical Properties

Property	Value	ASTM Test Method
Maximum Use Temperature	850°F (454°C)	C 411
Density	2.5 pcf (40.1 kg/m <sup>3</sup> )	C 303
Compressive Resistance	25 psf (1,197 Pa)	C 165
Composite Surface		E 84
Burning Characteristics		
Flame Spread	25 or Less	
Smoke Developed	50 or Less	
Facing Temperature Limit	150°F (66°C)	C 1136
Water Vapor Permeance	0.02 Perms	E 96

# Micro-Flex®

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### Micro-Flex Stretch-Out Chart (I-P Units)

Approximate length in inches to cut rolls to fit large pipes and ducts.

Nominal Pipe Size (in.*)	Pipe Outside Diameter (in.*)	Thickness (in.)						
		1	1½	2	2½	3	3½	4
10	10¾	40%	44%	47%	50%	53%	56½	59%
12	12¾	47	50½	53¾	56½	59%	62%	66
14	14	50%	53¾	56%	59%	62%	66	69¾
16	16	57¾	60%	63¾	66	69¾	72%	75¾
18	18	63%	66½	69%	72%	75¾	78%	81½
20	20	70	72½	75%	78%	81½	84%	87%
22	22	76	78¾	82	84¾	87%	91%	94¾
24	24	82%	85%	88¾	91%	94¾	97¾	100%
26	26	88¾	91%	94%	97%	100%	103½	106%
28	28	95	97¾	101	103½	106%	109¾	113
30	30	101%	103¾	107	109¾	113	116%	119¾

\*These dimensions do not include a lap. You must ADD 2 to 4 inches for lap.

### Micro-Flex Stretch-Out Chart (SI Units)

Approximate length in mm to cut rolls to fit large pipes and ducts.

Nominal Pipe Size (mm*)	Pipe Outside Diameter (mm*)	Thickness (mm)							
		25	38	51	64	76	89	102	
250	273	1014	1104	1184	1253	1333	1412	1492	
300	324	1174	1263	1343	1412	1490	1572	1651	
350	356	1273	1343	1422	1492	1571	1651	1731	
400	406	1432	1502	1581	1651	1731	1802	1881	
450	457	1591	1661	1740	1802	1881	1960	2039	
500	508	1751	1812	1891	1960	2039	2118	2198	
550	559	1901	1970	2049	2118	2198	2277	2356	
600	610	2059	2128	2208	2277	2356	2435	2514	
650	660	2217	2287	2366	2435	2514	2587	2666	
700	711	2376	2445	2524	2587	2666	2745	2824	
750	762	2534	2597	2676	2745	2824	2903	2982	

\*These dimensions do not include a lap. You must ADD 51 mm to 102 mm for lap.

### EXAMPLE:

To use Micro-Flex large-diameter pipe and tank wrap instead of 20-inch x 2-inch (500 mm x 51 mm) pipe covering:

1. Cut piece 78¾ inches (1991 mm) long (75¾ inches [1915 mm] plus 3 inches [76 mm] for lap).
2. Strip off 3 inches (76 mm) of the fiber glass leaving the jacket intact.
3. Physically apply to the pipe the first section cut of any size to verify dimensional fit.
4. You now have a section that will cover a 3-foot (0.92 m) section of 20-inch (500 mm) pipe.

In order to determine the length for pipe sizes not in the table:

1. Add twice the thickness of the insulation to the outside diameter of the pipe.
2. Multiply this value by 3.14.
3. Add 2 to 4 inches (51 mm to 102 mm) for a lap.



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The physical and chemical properties of the Micro-Flex® large-diameter pipe and tank wrap 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. Check with the Regional Sales Office nearest you to assure current information. **All Johns Manville products are sold subject to Johns Manville's standard Terms and Conditions, including Limited Warranty and Limitation of Remedy. For a copy of the Johns Manville standard Terms and Conditions, Limited Warranty and Limitation of Remedy and information on other Johns Manville thermal insulation and systems, call (800) 654-3103.**

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