



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/m³) 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 AP and FSK facings are intended for indoor use, and AP facing may be painted with a latex paint after installation. The ease of fit is particularly helpful on retro-fit installations where existing insulation may result in non-standard 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 and thicknesses of 1" through 4" (25 mm through 102 mm) in 1/2" (13 mm) increments in either AP (All Purpose) or FSK facings. For roll lengths and the amount of material per roll, please see List Price Schedule MFX-MI-1.

Advantages

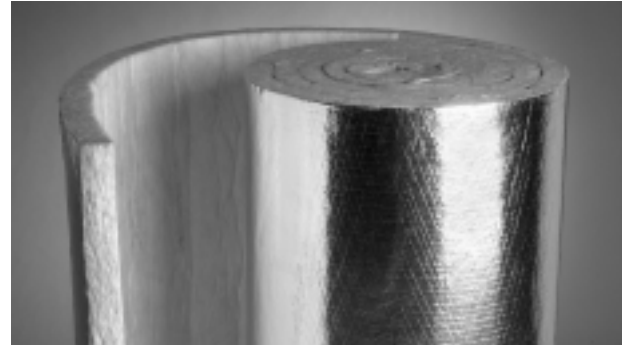
Easy to Apply. For most applications, only a ruler, knife, 3" or 4" (76 mm or 102 mm) wide AP or FSK pressure sensitive tape and stapler are required.

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•ft²•°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)*

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 in tact compared to the 4" (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 IIIA ASTM E 84

New York City MEA #360-03-E

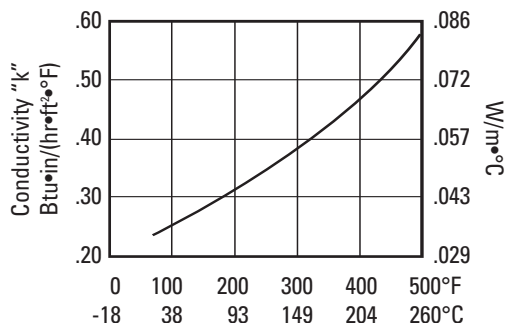
Installation

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" (51 mm to 102 mm) for lap seam, and cut to length. Remove 2" to 4" (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" (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" (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 1 1/2" (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.

Thermal Conductivity "k" (ASTM C 518)



Mean Temperature °F	Mean Temperature °C	Thermal Conductivity "k" (Btu•in/(hr•ft ² •°F))	Thermal Conductivity "k" (W/m•°C)
75	24	.24	.035
150	66	.28	.040
200	93	.32	.046
300	149	.39	.056
400	204	.46	.066
500	260	.58	.084

Physical Properties

Property	Value	ASTM Test Method
Maximum Use Temperature	850°F (454°C)	C 411
Density	2.5 pcf (40.1 kg/m ³)	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

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Micro-Flex CTS (Cut-to-Size 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
6	6¾	29¾	30¼	33⅞	37	40⅞	43¾	47
8	8¾	33⅞	37	40⅞	43¾	47	50⅞	53¾
10	10¾	40⅞	44⅞	47⅞	50⅞	53¾	56½	59⅞
12	12¾	47	50½	53¾	56½	59⅞	62⅞	66
14	14	50⅞	53¾	56½	59⅞	62⅞	66	69¼
16	16	57¼	60⅞	63¼	66	69¼	72⅞	75¼
18	18	63⅞	66½	69⅞	72⅞	75¼	78⅞	81½
20	20	70	72½	75⅞	78⅞	81½	84¼	87⅞
22	22	76	78¾	82	84¾	87⅞	91⅞	94¼
24	24	82¾	85⅞	88¼	91⅞	94¼	97⅞	100⅞
26	26	88¾	91½	94⅞	97⅞	100⅞	103½	106⅞
28	28	95	97¾	101	103½	106⅞	109¾	113
30	30	101¾	103¾	107	109¾	113	116⅞	119¼

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

Micro-Flex CTS (Cut-to-Size 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	
150	171	734	756	845	925	1005	1094	1174	
200	222	845	925	1005	1094	1174	1253	1333	
250	273	1014	1104	1184	1253	1333	1412	1492	
300	324	1174	1263	1343	1412	1492	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	

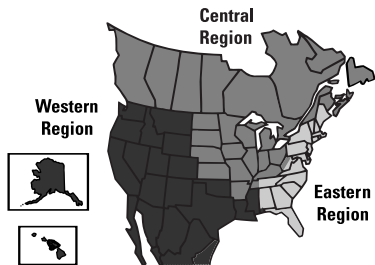
*These dimensions do not include a lap. You must ADD 51 mm to 102 mm for a lap.

EXAMPLE: To use Micro-Flex Large Diameter Pipe and Tank Wrap instead of 20" x 2" (500 mm x 51 mm) pipe covering:

1. Cut piece 78¾" (1991 mm) long (75¾" [1915 mm] plus 3" [76 mm] for lap).
2. Strip off 3" (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 which will cover a 3 foot (0.92 m) section of 20" (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" (51 mm to 102 mm) for a lap.



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The physical and chemical properties of Micro-Flex® Large Diameter Pipe and Tank Wrap 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 this 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 Limited Warranty and Limitation of Remedy. For a copy of the Johns Manville Limited Warranty and Limitation of Remedy, call the 800 number below.** For information on other Johns Manville thermal insulations and systems and a copy of the Spec-Line® CSI formatted specification, call **1-800-654-3103**. To access automated fax-on-demand service in the United States and Canada, simply call **1-888-INSULFX** (1-888-467-8539) from a fax or phone.