



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

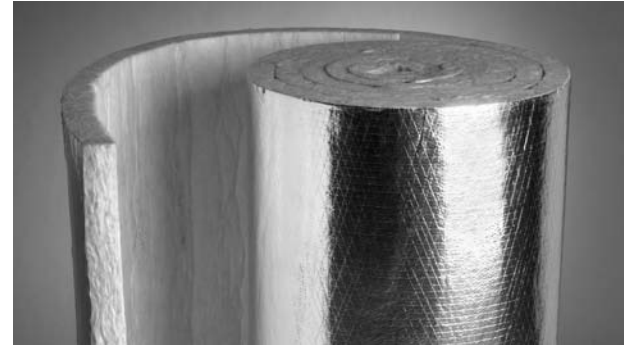
Easy to Apply. For most applications, only a ruler, knife, 3" or 4" (76 mm or 102 mm) wide AP or FSK pressure sensitive tape and stapler are required.

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

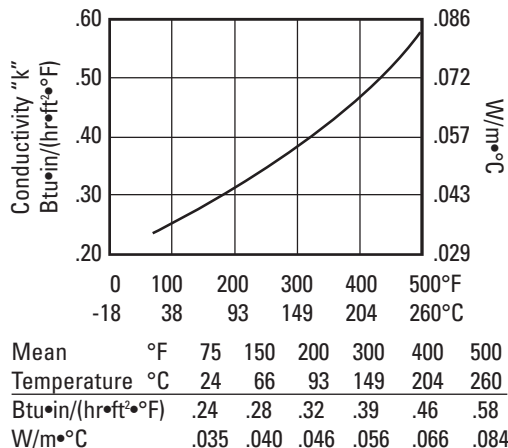
Installation

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)



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 | 47¾ | 50⅞ | 53¾ | 56½ | 59¾ |
| 12 | 12¾ | 47 | 50½ | 53¾ | 56½ | 59¾ | 62⅞ | 66 |
| 14 | 14 | 50¾ | 53¾ | 56½ | 59¾ | 62⅞ | 66 | 69¼ |
| 16 | 16 | 57¼ | 60⅞ | 63¼ | 66 | 69¼ | 72⅞ | 75¼ |
| 18 | 18 | 63⅞ | 66½ | 69¾ | 72⅞ | 75¼ | 78¾ | 81½ |
| 20 | 20 | 70 | 72½ | 75¾ | 78¾ | 81½ | 84¼ | 87⅞ |
| 22 | 22 | 76 | 78¾ | 82 | 84¾ | 87⅞ | 91⅞ | 94¼ |
| 24 | 24 | 82¾ | 85⅞ | 88¼ | 91⅞ | 94¼ | 97¾ | 100⅞ |
| 26 | 26 | 88¾ | 91½ | 94¾ | 97¾ | 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**.