Johns Manville
A Berkshire Hathaway Company

INDUSTRIAL INSULATION

CROSS-FLO® JACKETING

ALUMINUM METAL JACKETING

DATA SHEET

DESCRIPTION

Johns Manville's Metal Jacketing is the premier protective outer surface for industrial and mechanical insulation systems including pipes, vessels and equipment. It protects the insulation and underlying pipe/vessel from physical damage, UV exposure, corrosive atmospheres and water.

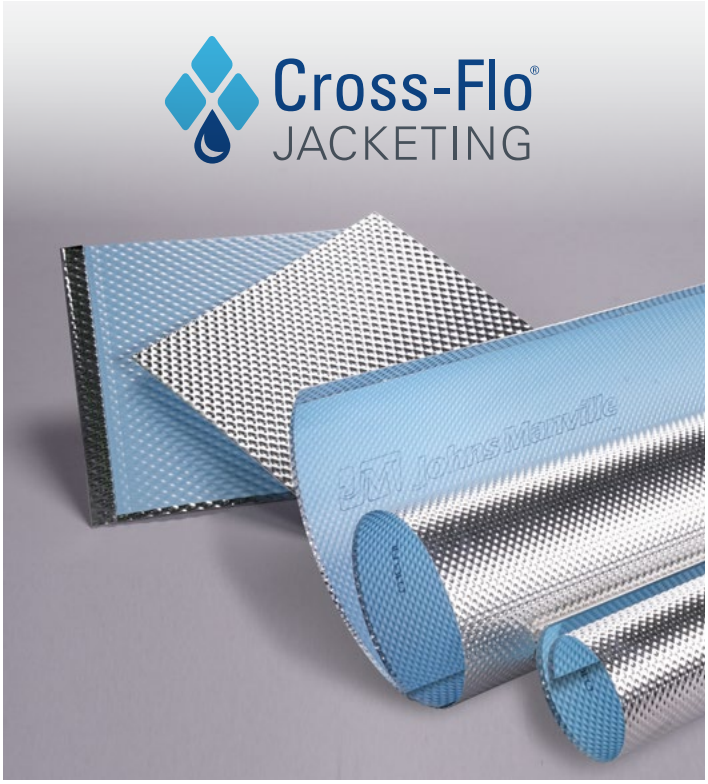
Cross-Flo® Jacketing is a unique innovation developed by JM for ambient and hot systems. It has an embossed pattern engineered to promote cross-directional flow (CDF), thereby providing a path for liquid that may enter the insulation system to reach the low point and exit the jacketing through a weep hole or drainage port. Although insulation systems are designed to deter water ingress, there are many ways by which water may enter a system undetected, which may lead to corrosion under insulation (CUI). Cross-Flo Jacketing reduces the risk of CUI by minimizing the time water remains in the system.

In addition to the numerous technical benefits, Cross-Flo Jacketing has a distinctive aesthetic appearance. It comes standard with a 3-mil thick polyfilm moisture barrier heat-laminated to the interior surface to provide additional protection against corrosion. When used in conjunction with JM's corrosion-inhibiting insulation products, Cross-Flo Jacketing provides superior protection against CUI.

CUI PREVENTION AND SYSTEM DRAINAGE

CUI is one of the greatest concerns facing engineers and specifiers in the industrial sector. Even in the most watertight pipe, vessel, and mechanical insulation systems, water infiltration must be expected and proactively addressed. Although JM's industrial insulation products comply with their respective product specification requirements for corrosion potential, impurities present in water can interact with metal piping and lead to corrosion. Cross-Flo Jacketing is an additional line of defense for protection against CUI, since it promotes the immediate drainage of liquid that may enter an industrial insulation system through its unique CDF pattern.

JM recommends the use of a weep hole or drainage port in conjunction with Cross-Flo Jacketing on ambient and hot lines to maximize efficacy and reduce the risk of CUI. As with all jacketing patterns, water is unlikely to fully escape the system if a weep hole is not provided. Without a way for water to exit the jacketing, it will pool at the low point of the pipe. Cross-Flo jacketing's CDF pattern allows for water to escape the system faster than existing jacketing products when weep holes are used. Cross-Flo Jacketing can also be installed for aesthetic reasons in applications where drainage or water egress is not a concern, and on cold lines where a weep hole should not be used.



RECOMMENDED USES AND ADDITIONAL BENEFITS

Metal jacketing is recommended for use with the following insulation system applications:

- Standard outdoor use on all pipe, vertical tank insulation systems up to 8-foot outer diameter, and all horizontal tanks
- Indoor insulation system applications up to 8-foot outer diameter where increased damage resistance is desired

Additional Benefits of Cross-Flo Jacketing:

- Better drainage performance than existing metal jacketing products
- Unique aesthetic appearance may identify that the system is engineered for improved CUI protection
- Cuts, curls, and installs using the same techniques as common jacketing finishes
- Can be used with all insulation types
- Lined with Polyfilm Moisture Barrier (PFMB)

Patent Pending

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COMPLIANCE TO STANDARDS

All bare and polyfilm lined JM Aluminum Jacketing complies with the requirements of ASTM C1729 (Aluminum Jacketing Material Standard) which includes the strength and chemical composition requirements for compliance to ASTM B209 (Aluminum Alloy Standard).

POLYFILM MOISTURE BARRIER

Polyfilm Moisture Barrier (PFMB) is an engineered three layer coextruded film of polyethylene and Surlyn* polymers with a total film thickness of 3 mils (76 µm) that is heat laminated in the factory to the interior surface of aluminum jacketing. JM recommends the use of PFMB on all aluminum jacketing to help prevent pitting, crevice, and galvanic corrosion of the interior surface of the metal jacketing and the insulated pipe, tank, or equipment.

Due to its superior performance characteristics, PFMB replaces the old moisture barrier technology of 1 to 3 mil thick polykraft.

FLAMMABILITY

JM Aluminum Jacketing with a 3 mil polyfilm moisture barrier has been tested for flammability using the industry standard ASTM E84 test method. The results were:
ASTM E84 Flame Spread Index: 0
ASTM E84 Smoke Developed Index: 5

(Tested with exterior metal surface exposed to the flame)

RECOMMENDED THICKNESSES

JM recommends that the thickness of aluminum jacketing used vary based on the outer diameter of the insulation system per the requirements of ASTM C1729. This recommended thickness is shown in the table below.

Outer Insulation Diameter (in)	**Minimum Aluminum Jacket Thickness, inches (mm)**	
	Rigid Insulation	Non-Rigid Insulation
≤ 8	0.016 (0.41)	0.016 (0.41)
Over 8 thru 11	0.016 (0.41)	0.020 (0.51)
Over 11 thru 24	0.016 (0.41)	0.024 (0.61)
Over 24 thru 36	0.020 (0.51)	0.032 (0.81)
>36	0.024 (0.61)	0.040 (1.01)

AVAILABLE SIZING AND THICKNESSES

Thicknesses	.016" (.4 mm), .020" (.5 mm), .024" (.6 mm)
Widths	36" (914 mm) and 48" (1219 mm)
Lengths	Rolls 50' (15 meters), 100' (30 meters), Coils (specify lengths) Flat Sheets (made to order) Cut & Roll (made to order)

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*Surlyn is a trademark of Dupont.

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Johns Manville

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