



PRODUCT SELECTION GUIDE

Metal Jacketing

Johns Manville provides high-performance metal jacketing, mechanical insulation, and vapor retarder products, designed to meet specifications for a wide range of commercial and industrial pipe, tank, and equipment projects.

METAL JACKETING

Johns Manville (JM) offers a complete metal jacketing system to fit a wide variety of commercial and industrial applications, supplying high-quality aluminum and stainless steel jacketing around the world. All of these metals provide excellent mechanical and weather protection on insulated piping, tanks, and equipment, and are laminated with Polyfilm Moisture Barrier (PFMB) which provides the optimum resistance to corrosion.

These metals are suitable for heavy industrial applications (refineries, petrochemical, gas, LNG, and power plants), light-industrial applications (refrigeration and pharmaceutical) and commercial work (chilled water, roof tops, and ducting).

The most common gauges of aluminum utilized for smooth, stucco embossed or corrugated rolled jacketing are 0.016", 0.020", 0.024", 0.032", and 0.040".

Both our aluminum and stainless steel jacketing solutions comply with the requirements of ASTM C1729 and C1767, respectively.

All aluminum pressed 45° and 90° elbows are polyfilm lined and JM also offers a wide range of accessories and tools used in the insulation industry.

Our full line of metal jacketing includes:

ROLLS/COILS:

- Aluminum (smooth, stucco embossed, or 3/16" corrugated)
- Painted Aluminum
- Stainless Steel (T-304 and T-316)

SHEETS:

- 4" X 1" Box Rib (100 X 25 mm)
- Deep Corrugated
 - 1 1/4" x 1/4" (32 x 6mm)
 - 2 1/2" x 5/8" (64 x 16 mm)

ELBOWS:

- Ell-Jacs™ Plus - Aluminum Elbows with PFMB
- Multi-fit Elbows
- Stainless Steel Elbows



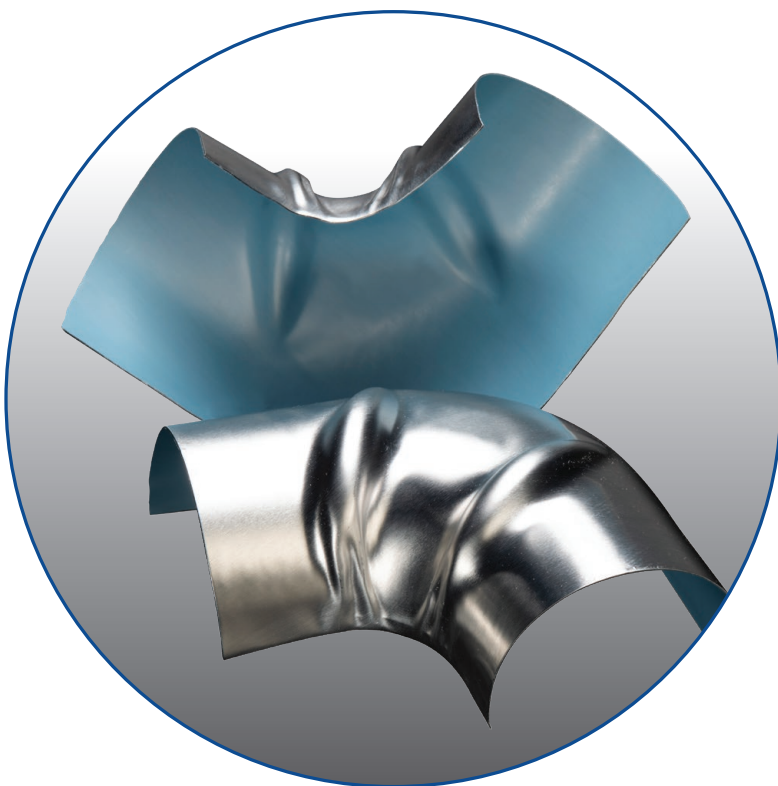
ACCESSORIES:

- Fastening Devices
- Stainless Steel Banding
- Stainless Steel Wing Seals
- Stainless Steel Tie Wire
- Stainless Steel Screws
- Springs and Expansion Springs



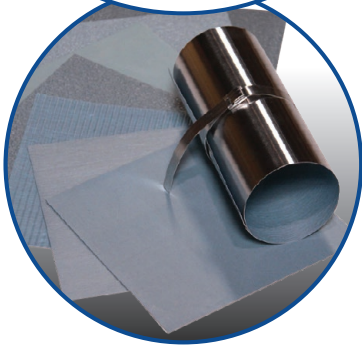
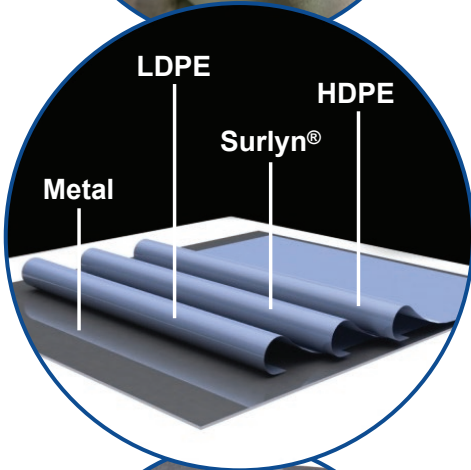
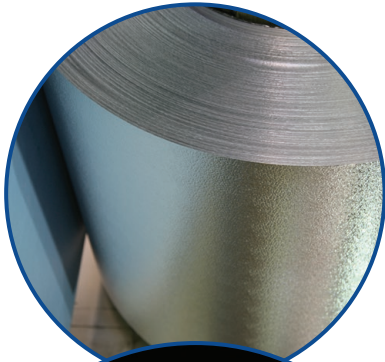
ALL OF OUR ALUMINUM AND STAINLESS STEEL JACKETING IS LAMINATED WITH POLYFILM, A CO-EXTRUSION OF POLYETHYLENE AND SURLYN®.

This 3-layer, 3 mil thick film is heat laminated across the width of the metal jacketing and offers additional protection from galvanic and crevice/pitting corrosion.



PHYSICAL CHARACTERISTICS OF POLYFILM

- Water Vapor Transmission Rate (WVTR) per ASTM F1249 = 0.048 g/100 in 2-day at 73°F.
- Maximum Long-Term Exposure Temperature = 180°F (82°C). Insulation systems are generally designed to keep the jacket temperature from exceeding 140°F.



WHY POLYFILM

Johns Manville recommends a three-layer, 3 mil thick, factory heat laminated Polyfilm Moisture Barrier, instead of Polykraft for all metal jacketing sheets, rolls, and elbows.

SIMPLE, LOW COST, AND EFFECTIVE RESISTANCE TO METAL JACKET AND PIPE CORROSION:

Polyfilm provides a barrier to crevice or pitting corrosion on the inner jacket surface in cold and hot pipe/tank applications. It also provides a barrier to galvanic corrosion of jacket or pipe in hot applications.

Polyfilm is very important in all applications but is essential in applications in which the metal jacketing comes in contact with dissimilar metals, *e.g.* wire mesh that is used around mineral wool blankets or tie wire used to hold pipe sections in place.

METAL JACKETING AND WATER DON'T MIX:

Polyfilm is especially suited for service in which the underside of the aluminum jacketing may come in contact with excessive amounts of moisture for extended periods of time.

When water is present and touching the metal jacket, corrosion can and does occur. This can happen in all applications (hot, cold, rooftop, industrial, commercial, etc.) and with all insulation types.

POLYFILM IS MANUFACTURED FROM 3 LAYERS OF FILM:

Polyfilm is layered with 1 mil high-density polyethylene, 1 mil Surlyn® and 1 mil low-density polyethylene, with each layer carefully designed to yield optimum performance. This multilayer film is factory heat laminated to the interior side of JM's aluminum and stainless steel jacketing using carefully controlled pressure and temperature.

Use of 3-layer, 3 mil thick PFMB avoids the pinholes prevalent in the polykraft moisture barrier.

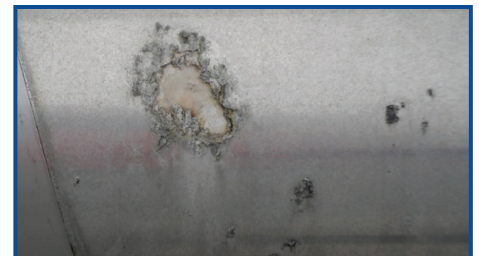
POLYFILM SUPERIORITY:

Johns Manville has over 25 years of success with using Polyfilm as a moisture barrier on metal jacketing over insulation.

Johns Manville fully changed from Polykraft to PFMB due to the superior performance and water-resistance of the multilayer Polyfilm.

POLYFILM ADVANTAGES:

- Long term durability and resistance to a wide range of environmental contaminants
- Metal jacketing with PFMB has an ASTM E84 flame/smoke performance of $\leq 25/50$
- Minimal water absorption compared to kraft paper
- Will not deteriorate, discolor or shred when exposed to water
- Provides abrasion resistance during installation
- Aluminum jacketing with PFMB complies with ASTM C1729, Class A
- Stainless steel jacketing with PFMB complies with ASTM C1767, Class A



Crevice/pitting corrosion that occurred when Polykraft moisture barrier was used.

PFMB is a minimal investment or “insurance” to protect valuable metal jacketing, pipe, tank, and the insulation system

POLYFILM	POLYKRAFT
Co-extruded 3-layer film with 3 mils thickness	Plastic film is a single layer
Very few pinholes, better moisture retarding properties	Pinholes allow moisture to contact the metal
No water absorption, no possibility of moisture contact with metal	Exposed surface of Polykraft is paper, which readily absorbs water

METAL JACKETING CORRODES... UNLESS POLYFILM IS USED

Bare 3000 series aluminum



Bare aluzinc coated steel



Bare galvanized steel



Bare aluminized steel



3000 series aluminum with POLYFILM - no corrosion



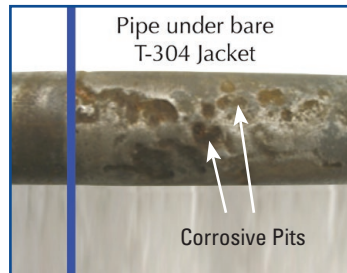
Aluzinc coated steel with POLYFILM - no corrosion



PHYSICAL CHARACTERISTICS OF POLYFILM

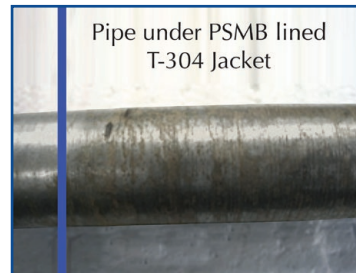
- Meets requirements of ASTM metal jacketing standards for ≤5 pinholes
- Three-layer film with total thickness of 3 mils (0.08 mm)
- Water Vapor Transmission Rate (WVTR) per ATSM F1249 = 0.048 g/100 in 2-day at 73°
- Auto ignition temperature >600°F (316°C). Kraft paper is approximately 450°F (233°C)

POLYFILM CAN HELP PROTECT PIPE FROM GALVANIC CORROSION



Not Tested Tested

Bad pipe corrosion with BARE T-304 Jacket



Not Tested Tested

No pipe corrosion with PFMB lined T-304 Jacket



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Technical specifications as shown in this literature are intended to be used as general guidelines only. Please refer to the Safety Data Sheet and product label prior to using this product. The physical and chemical properties of the products 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. Any references to numerical flame spread or 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 for current information.

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