

Why Polysurlyn Moisture Barrier Is a Better Choice Than Polykraft or Painted Moisture Barriers

Metal Jacketing and Water Don't Mix

When water is present and touching the interior surface of metal jacketing, corrosion can and does occur. This can happen in all applications (hot or cold), with all metal jacketing types, and with all insulation types.

Moisture Barrier Properties Needed

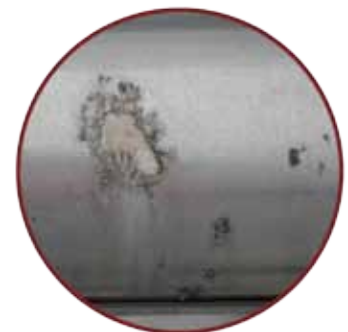
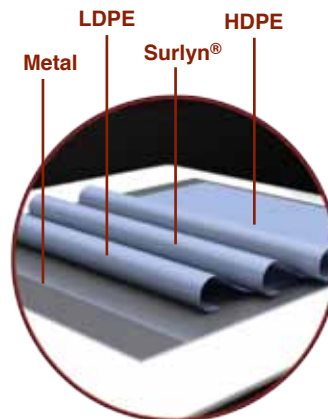
To keep water from causing jacket and pipe corrosion, the moisture barrier must be water resistant, pinhole free, tough, scratch resistant, and durable. Only Polysurlyn Moisture Barrier (PSMB) offers all of these necessary properties while also being economical and widely available.

Why Polysurlyn Moisture Barrier?

- Three layer film to provide optimized performance
- Thick film (3 mils, 76 μm) for long-term durability
- Zero pinholes – much fewer than polykraft and painted
- Much lower water vapor transmission rate than polykraft
- No Kraft paper present to absorb water
- Tough and strong film to resist installation damage
- Great adhesion to metal substrate
- Low flammability

FOR CORROSION PROTECTION

ITW Insulation Systems recommends that the moisture barrier on the interior surface of all types of metal jacketing be factory heat laminated 3 mil polysurlyn rather than a polykraft or painted moisture barrier.



Crevice corrosion that can occur when PSMB is not used

ITW INSULATION SYSTEMS

Multiple Insulation Solutions, **One Manufacturer**, Global Reach.

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Don't Subject Your Valuable Pipe, Tank and Jacketing to the Risk of Corrosion!

Using Jacketing with Polysurlyn Instead of Polykraft or Painted Moisture Barrier Helps Assure a Long System Life

Corrosion Science, Lab Testing, and Field Examples Agree

- Corrosion science explains why pitting, crevice, and galvanic corrosion occur and why PSMB is the best choice help prevent this damaging corrosion
- Lab testing shows the ability of PSMB to help prevent corrosion and explains why the properties of paint and polykraft are inferior at preventing corrosion
- Field examples show PSMB in action helping prevent this corrosion and the failure of polykraft in numerous real-world installations

Contact ITW Insulation Systems for more information on this corrosion science, lab testing, and field examples



Example of polykraft use that led to corrosion of aluminum jacketing

On 1100 alloy aluminum elbows/fittings, the use of painted moisture barrier is acceptable due to the superior corrosion resistance of this ultrapure alloy

KEY PROPERTIES OF VARIOUS MOISTURE BARRIERS

PROPERTY	PAINT	POLYKRAFT	POLYSURLYN
Moisture Barrier Description	1 layer at ~0.7 mils thick	1 layer of 1.5 mil thick PE film with Kraft paper backing	3 layer polymer film with total thickness of 3 mils (1 mil LDPE, 1 mil Surlyn*, and 1 mil HDPE)
Pinholes per 50 ft ² via ASTM C1729 Method	>19	16	0
Water Resistance WVTR (g/100 in ² -day)	Unknown	Poor at about 1.0	Excellent <0.05
Toughness	Easily scratched	Paper easily damaged	Strong and scratch resistant
Flammability	Good	Unknown but exposed paper surface has autoignition temp of ~450°F (232°C)	Tested on aluminum using ASTM E84 yielding flame/smoke of 0/5 Autoignition temp for polysurlyn is >600°F (316°C)