

# What is a moisture barrier on metal jacketing or cladding?

Moisture barrier is a coating applied on the underside of the [metal jacketing](#) to prevent corrosion of the jacket and pipe. It is a very important component of a good insulation system and used in all applications including hot and cold (cryogenic) applications. The purpose of the barrier is to isolate the jacket from other insulation layers and shield the underside of the metal jacket from moisture contact to prevent corrosion.

Over the years, many different materials have been used as Moisture barriers on metal jacketing in mechanical insulation systems. Three most common moisture barriers used are [Paint](#), [Polykraft](#), and [Polyethylene](#) barriers.

## Paint:

Painted moisture barrier is a thin 15 – 20 µm layer of an acrylic paint. This type of moisture barrier is used on high corrosion-resistant metal jacket – Stainless steel 316 or corrosion resistant Aluminium alloys in a low corrosive environment. Paint is not a very popular choice for a moisture barrier as it is a very thin layer and a high density of pinholes which cannot prevent the moisture to reach the underlying metal surface. Also, low scratch and chip resistance cause the failure of the barrier during shipping to the site or if subjected to mechanical abuse.

## Polykraft:

Polykraft is a layer of kraft paper laminated to a thin layer of polyethylene film which is factory applied on the metal in a lamination process. It is an improvement from the paint system as Polykraft is 1.5 mil (37.5 µm) thick and uses polyethylene layer which is good for moisture resistance. However, kraft paper exhibits a poor water resistance and can be easily damaged on mechanical abuse. The properties of polykraft deteriorate significantly over a short time. Polykraft promotes the growth of fire, hence is not used in areas where there is a high risk of fire.

## Polyethylene:

Polyethylene moisture barrier is a 76 µm thick three-layer film which is factory laminated on the metal without the use of any additional adhesive layer. The layers are a combination of polyethylene and Dupont™ Surlyn®. Surlyn® is known for its strength and moisture resistance properties and combining it with 2 additional layers of polyethylene prevents the alignment of pinholes in each layer, hence, this moisture barrier exhibits zero pinholes. Polyethylene moisture barrier is the most popular moisture barrier used today.



## **Drymet:**

BS Stainless' Drymet uses Polyethylene moisture barrier and is applied on an in-house process. Widely used on Aluminium or Stainless steel for use as metal jacketing or cladding then secured with banding and seals.

[Drymet](#) is also available with a range of options for the exterior surface of the jacketing:

Polyester paint or other paint systems based on the specification

CoolMet—PVDF painted cladding to improve radiative properties and high abrasion resistance of top surface

DuPont™ Tedlar® (PVF) film—To improve external surface radiative properties and high abrasion resistance

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