

PIPELINE COATINGS

A Technical Overview – Yellow Jacket – AS 1518

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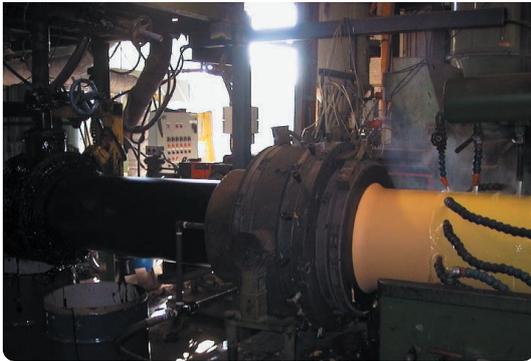
BREDERO SHAW

A SHAWCOR COMPANY

Yellow Jacket® – AS 1518

Two layer extruded polyethylene coatings were introduced in the 1960s. Today they are one of the coatings of choice in certain parts of the world.

Yellow Jacket® high density polyethylene coating was developed in Canada and has been extensively used in Australia for 30 years where long term corrosion protection is required. Typically Yellow Jacket® is used on diameters less than 24" and where the pipeline operating temperatures do not exceed 55°C.



Crosshead: Mastic and HDPE being applied

This system consists of a specially designed rubber modified asphalt sealant, which is applied directly onto the preheated blasted steel surface through a flood type system having an adjustable applicator die, which enables accurate control of the sealant thickness. This is immediately followed by the application of the seamless HDPE coating applied through a multi-adjustable crosshead die, allowing tight control of the HDPE thickness. A benefit of the annular die system is that the extruded sheath already conforms to the profile of the pipe and application of a vacuum behind the die ensures that the sheath conforms tightly to the mastic and polyethylene.

The sealant component maintains an aggressive adhesion to the steel and maintains the properties of cold flow, giving a self-healing capability to small breaches or punctures in the polyethylene outer jacket. The result is a protective coating system that is resistant to abrasion and impact.

The Australian Standard AS 1518 was built around the Yellow Jacket® process, however over the past 30 years the system and material technology have continuously improved with product development, construction experience and in-service experience.

The two main components have been modified and enhanced following extensive in-house development. The mastic sealant upgrades were first made in the early 80s solely to suit the higher ambient and construction temperatures applicable in Australia. Additionally, the HDPE polymer has evolved to a system with far higher environmental stress cracking resistance.

