

PP-SC Polypropylene Pipe Coating

Service: Pipeline Weld Joint Protection System for Polypropylene Coated Line Pipe
 Operating service temperatures: Ambient to 120°C (248°F)
 Surface application temperatures: 15°C (60°F) to 85°C (185°F)
 New or operating pipelines and as a repair for damaged plant applied coating

System: 2 component catalyzed thermo-epoxy basecoat
 Intermediate polypropylene flock coat
 Thermal applied engineered polypropylene topcoat

System Description:

Basecoat: A 100% solids 2 component catalyzed thermosetting epoxy. Chemically and thermally reacted, the Polythermic SC Basecoat provides superior surface wet-out and bond properties, demonstrates excellent permeation and chemical resistance, and serves as an advanced adhesive bonding site for the thermoplastic topcoats.

Flock Coat : Polypropylene thermoplastic powder that is dry sprayed into the wet epoxy basecoat. Applied as an intermediate layer, the flock assures the creation of a monolithic bond between the basecoat and topcoat.

Topcoat: An engineered polypropylene thermoplastic pipeline coating. Thermal spray applied using light weight and mobile application equipment, the Polythermic PP Topcoat forms a seamless outer wear layer that is fully bond compatible with the plant applied polypropylene line coating. Typical with most high performance polypropylenes, it demonstrates excellent resistance to impact and abrasion, is resistant to a variety of chemicals, and maintains its properties in elevated temperature service conditions.

Typical Applied Properties:

Cathodic Disbondment 28 days @ 80°C	CAN/CSA-Z245.20	<8mm radial
Adhesion after hot water immersion 28 days @ 80°C	CAN/CSA-Z245.20	Class 1
Permeation: DI Water 82° C (180°F), 6 months	ASTM C-868	No Effect <0.5 µ A
Taber Abrasion topcoat (wet)	ASTM D-4060	14 mg average
Taber Abrasion topcoat (dry)	ASTM D-4060	24 mg average
Hardness @ 25°C	ASTM D-2240 Shore D	65
Flexibility (°PPD) @ 25°C	CAN/CSA-Z245.20	1.0
Tensile Bond Strength of basecoat to steel @ 25°C	ASTM D-1002	> 2000 psi
Tensile Strength of topcoat (at break) @ 25°C	ASTM D-638	> 2000 psi
Tensile Elongation of topcoat (at break) @ 25°C	ASTM D-638	45%
Dielectric strength	ASTM D-149	22-140 kV/mm
Impact Strength @ 25°C	Gardner Impact	> 10 J
Applied thickness for system	Minimum recommended	1.5 mm (60 mils)

Specification: **PP-SC** Polypropylene Pipeline Weld Joint Protection Systems for Polypropylene Coated Line Pipe are manufactured in standard and high temperature versions.

Basecoats: POLYTHERMIC SC1 – Two Component Catalyzed Thermo-Epoxy for new or operating pipe where surface application temperatures are at 15°C to 55°C, and
POLYTHERMIC SC2 – Two Component Catalyzed Thermo-Epoxy with Thixotropic Filler for new or operating pipe where surface application temperatures are at 55°C to 85°C.

Topcoats: POLYTHERMIC PP1 – Polypropylene Thermoplastic Coating for new or existing pipe where the line temperature operates at ambient to 85°C, and
POLYTHERMIC PP2 – Elevated Temperature Polypropylene Coating for new or existing pipe where the line temperature operates from 85°C to 120°C.

Application: The below procedures are presented as a general installation guideline. Refer to the POLYTHERMIC PP-SC **System Application Instructions** for complete surface preparation and application procedures.

Surface Preparation: All weld seams shall be ground to remove sharp edges, weld spatter, etc. Prepare all bare steel surfaces by grit blasting to a near white metal condition as specified per the Steel Structures Painting Council SSPC-SP-10 (SA 2½ Preparation Standard) with a surface profile of 50 to 100 microns. Pitted surfaces may require additional preparation procedures to ensure acceptance. Clean and visually abrade existing factory coating.

Basecoat Application: Apply a minimum of 8 wet mils of basecoat to all prepared surfaces. Apply by brush, roller, or applicator pad.

Flocking: Immediately flock a uniform dry layer of the specified Polythermic PP Topcoat powder onto the applied basecoat using the Polythermics thermal spray unit with air only.

Topcoat: The POLYTHERMIC PP1 or PP2 Topcoat is applied to the specified thickness in a single, multiple film build application onto the activated basecoat and overlapping the linecoating by 50mm. Do not allow the material or surface temperature exceed 330°F (165°C). Upon solidifying and/or cooling, the system is ready for service. No cure time is required.

Application Equipment: All application equipment will be supplied by Polythermics, as it has been specially developed to apply these advanced materials.

Contractor Qualification: Instruction and certification by Polythermics, LLC or its agents is required.

Safety: The contractor is solely responsible for the safety of their personnel. Proper safety equipment such as face shields, gloves, protective clothing, fire extinguishers, etc. are required. The contractor will establish and instruct all personnel in the proper safety procedures including those that address the use of propane gas burning equipment and to the hazards of molten plastic. Product MSDS shall be supplied with the materials.

Liability and Warranty: For extent of liability and standard product warranty statements, refer to the Polythermics, LLC Standard Terms and Conditions of Sale.

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