Product Technical Bulletin **Issue Date: 12/07**

PP-LC 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: Ambient to 85°C (185°F)
New or operating pipelines and as a repair for damaged plant applied coating

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

Advantages: Maneuverable and Lightweight Installation Equipment • Superior Performance Properties
Rapid Installation, within lay barge cycle times • Operating Temperature to 120°C.

Description: Basecoat: A 100% solids single component UV light catalyzed thermo-epoxy. Cured in minutes, the PP-LC 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 : Hybrid 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, the PP-LC 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 @ 120°C	CAN/CSA-Z245.20	<4mm radial
Adhesion after hot water immersion 28 days @ 80°C	CAN/CSA-Z245.20	Class 1
Taber Abrasion topcoat (wet)	ASTM D-4060	13 ± 4 mg
Taber Abrasion topcoat (dry)	ASTM D-4060	30 ± 4 mg
Hardness @ 25°C	ASTM D-2240 Shore D	60
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	350%
Dielectric strength	ASTM D-149	22-140 kV/mm
Impact Strength @ 25°C	GFDI	>210 in-lb
Applied thickness for system	Minimum recommended	1.5 mm (60 mils)

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Materials: Note: The PP-LC Polypropylene Thermoplastic Topcoat is manufactured in a standard and high temperature version.

Basecoats: POLYTHERMIC LC – Single Component UV Light Catalyzed Thermo-Epoxy for new or operating pipe where surface application temperatures are between 15°C and 85°C. Consult with Polythermics for applications below 15°C and above 85°C.

Flock Coat: POLYTHERMIC PP-LC FLOCKING POWDER - Hybrid polypropylene thermoplastic powder.

Topcoats: POLYTHERMIC PP1 – Polypropylene Thermoplastic Coating for new or existing pipe where the line temperature operates at ambient to 85°C.
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-LC ***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: Protect and/or shade the general working area from exposure to direct sunlight during the basecoat and flock coat application. Preheat the surface to 60°C (140°F) Apply a minimum of 6 mils and a maximum of 10 mils of POLYTHERMIC LC BASECOAT to all prepared surfaces. Apply by brush, roller, or applicator pad.

Flock Coat: Immediately flock a uniform dry layer of POLYTHERMIC PP- LC FLOCKING POWDER onto the applied basecoat using the thermal flame spray applicator with air only.

Basecoat Activation: The basecoat activator is placed around the pipe joint, which sets the basecoat within several minutes.

Topcoat Application: 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. Upon solidifying and/or cooling, the system is ready for service. No cure time is required.

Application Equipment: All activation and installation equipment shall be supplied by Polythermics, LLC

Contractor Qualification: Certification of Operation and Training is required by Polythermics, LLC or its licensed partner or agent is required.

Safety: Product MSDS supplied by Polythermics, LLC shall be posted and reviewed by the contractor/site management prior to any commencement of work or handling of materials. 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 on the proper safety and handling of and/or in the hazards associated with but not limited to those that address the use of propane gas, propane gas burning equipment, pressurized air, and to the hazards of molten plastic.

Warranty and Liability: Statements establishing Polythermics, LLC extent of liability and standard product warranty are cited and established in Polythermics, LLC “Standard Terms and Conditions of Sale”.

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