Product Technical Bulletin **Issue Date: 11/07**

PE-SC Polyethylene Pipe Coating

Service: Pipeline Weld Joint Protection System for Polyethylene Coated Line Pipe
Operating service temperatures: Ambient to 65°C (150°F)
Surface application temperatures: 15°C (60°F) to 65°C (150°F)
New or operating pipelines and as a repair for damaged plant applied coating

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

Advantages: Maneuverable and Lightweight Installation Equipment • Superior Performance Properties
Operating Temperature to 65°C – Excellent Moisture and Chemical Resistance

System Description:

Basecoat: A 100% solids 2 component duel catalyzed thermosetting epoxy. Chemically and thermally reacted, the Polythermic PE-SC1 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 : Polyethylene 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 polyethylene hybrid thermoplastic pipeline coating. Thermal spray applied using light weight and mobile application equipment, the Polythermic PE-SC Topcoat forms a seamless outer wear layer that is fully bond compatible with the plant applied polyethylene line coating.

Typical Applied Properties:

Cathodic Disbondment 28 days @ 65°C	CAN/CSA-Z245.20	<8 mm radial
Adhesion after hot water immersion 28 days @ 65°C	CAN/CSA-Z245.20	Class 1
Permeation: DI Water 65° C 6 months	ASTM C-868	No Effect <0.5 µ A
Taber Abrasion topcoat (wet)	ASTM D-4060	30 mg avg.
Hardness @ 25°C	ASTM D-2240 Shore D	56
Flexibility (°PPD) @ 25°C	CAN/CSA-Z245.20	1.0
Tensile Bond Strength of basecoat to steel @ 25°C	ASTM D-1002	> 1600 psi
Elongation of topcoat	ASTM D-638	280%
Dielectric strength	ASTM D-149	890 ± 160 volts/mils
Impact Resistance	ASTM D-2794	>380 in./lbs.
Applied thickness for system	Minimum recommended	80 mils

US Sales: Polythermics, LLC 11628 73rd Place NE Kirkland WA 98034 Ph 425-823-5568 Fax 425-821-6769 neukirchen@attglobal.net

Specification: Polythermic PE-SC Polyethylene Joint Protection System for Polyethylene Coated Line Pipe

Basecoat: POLYTHERMIC SC1 – Two Component Catalyzed Thermo-Epoxy for new or operating pipe where surface application temperatures are at 15°C to 65°C

Topcoat: POLYTHERMIC PE1 – Polyethylene Thermoplastic Coating for new or existing pipe where the line temperature operates at ambient to 65°C.

Application: The below procedures are presented as a general installation guideline. Refer to the POLYTHERMIC PE-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 Polythermic PE1 Topcoat powder onto the applied basecoat using the Polythermics thermal spray unit with air only.

Topcoat: The POLYTHERMIC PE1 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 thermal spray equipment shall be supplied by Polythermics, LLC. Refer to the Polythermics General Equipment Operation – Start-up and Settings" for instruction on operation and general operational practices of the thermal spray unit.

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.

US Sales Office:
Polythermics, LLC
11628 73rd Place NE,
Kirkland WA. USA 98034
ph: 425-823-5568
fax: 425-821-6769
email: neukirchen@attglobal.net