

HP-SC Hybrid Plastic Coating

Service: Electrorefining environments and processing solutions
Operating temperatures: Ambient to 65°C (150°F)

System: The Polythermic HP-SC consists primarily of a 2 component catalyzed thermo-epoxy basecoat and a thermal spray applied polyolefin hybrid plastic topcoat. Unlike a sheet or drop-in plastic liner, the HP-SC system is uniformly bonded to the surface without seams or overlaps. Applied as a new or repair lining, the system also incorporates as required methods for crack, structural, and surface repair.

Advantages: High permeation and chemical resistance • Superior film strength and elasticity
Excellent impact and wet abrasion resistance • Long-term stability

Typical Applied Properties:

Dielectric strength	ASTM D-149	890 ± 160 volts/mils
Impact Resistance	ASTM D-2794	>380 in./lbs.
Permeation: DI Water 60° C 6 months	ASTM C-868	<0.5 µA - No Effect
Elongation of topcoat	ASTM D-638	280%
Hardness @ 25°C	ASTM D-2240 Shore D	56
Taber Abrasion topcoat (wet)	ASTM D-4060 (Amended)	30 mg avg.
Tensile Bond Strength of basecoat to steel @ 25°C	ASTM D-1002	> 1600 psi
Applied thickness for system	Minimum recommended	60 mils

Chemical Resistance:

Sulfuric Acid – 30% Copper Sulfate – 100% Phosphoric Acid – 100%
Sulfurous Acid – 100% Nickel Sulfate – 100% Ammonium Sulfate – 100%
Nickel Plating Solutions Copper Plating Solutions

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

Surface Preparation - Polymeric Concrete: Remove all loose, unsound and contaminated matter and materials from the surface by grit blasting, disc grinding, etc. achieving a minimum 3 mil anchor profile. Bevel or otherwise open all repair areas such as impact gouges, voids, etc. removing all sharp edges.

Surface Preparation - Steel: Prepare all steel surfaces by grit blasting or grinding 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.

Basecoat Application: Apply a minimum of 4 to 6 wet mils of Polythermic SC Basecoat to all prepared surfaces as a general sealer coat and allow to set. Apply by brush, roller, or applicator pad.

Surface Filler: Repair all gouges, impact damage, etc. less than 1” in depth to a surface smooth condition using SC Basecoat mixed with approved filler powder as directed by Polythermics, LLC

Crack Repair: Place #2 glass (6” wide centered over the crack) into the wet basecoat/sealer and saturate with SC Basecoat as required.

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

Flocking: Immediately flock a uniform dry layer of the Polythermic HP Topcoat powder onto the applied wet basecoat using the Polythermics thermal spray unit with air only. Allow basecoat and flock to set.

Topcoat: The Polythermic HP Topcoat is applied at the specified thickness in a single, multiple film build application. 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 “Equipment Operation – Start-up and Settings” manual for introductory 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.

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Associated Documents:

Polythermic HP-SC Application Instructions
Polythermic HP-SC Material Safety Data
Polythermic HP Chemical Resistance Reference Guide
Polythermics, LLC Terms and Conditions of Sale
General Equipment Operations – Start up and Settings

Important: It is the ultimate responsibility of the Buyer to determine suitability of the material for its intended use. The extent of any liability arising from the sale or use from this or any product or system represented or manufactured by Polythermics, LLC shall be determined solely by Polythermics, LLC • The information contained in this bulletin is believed to be accurate and reliable but is not to be construed as implying any warranty or guarantee of performance. Polythermics, LLC reserves the right to modify or make changes to the represented product data or statements and material or process without notification to the Buyer. • Refer to the Polythermics, LLC “Standard terms and Condition of Sale” for a complete explanation and/or clarification.