

Protective Coatings for Concrete, Pipeline & Marine Industries

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Version 1.0

General Description U-SHIELD Pro17

A functionalized polyethylene copolymer thermoplastic powder coating designed for maximum mechanical performance, impact resistance and UV stability. U-SHIELD Pro17 is a very durable coating for outdoor applications.

Surface Preparation

- Chemical Pre-treatment - Multistage phosphate conversion coating may be used. - Optional
 - Mechanical Preparation - (SSPC-SP6) 2 - 3 mils (51 - 76 micron) anchor profile using clean, sharp edged blast media.
- NOTE: Properly preparing parts before powder coating is essential for a quality finish. This includes cleaning, rinsing, drying and ensuring the substrate surface is free and clear of any contaminates.

FS Flame Spray Application

Preheat the parts to 325 °F (165 °C), adjusting for part thickness. Flame Spray for 4 - 6 seconds/spft. Let cool off. For faster cooling quench with water. For improved surface finish, if necessary, parts may be post-flame heated for a short period of time.

No Cure Time

Thermoplastic powder coatings need only be heated enough to flow out the coating, nothing more. Overheating may cause degradation or embrittlement of the coating. Coating may be put into service when cooled.

Storage Stability

Store in dry area, keep container closed with liners sealed and out of direct sun light and any moisture or external contaminates. Always use good manufacturing practices.

Powder Properties

Coverage		25.65 ft ² /lb (5.24 m ² /kg) @ 8 mils (203 micron) - (100% efficiency)
Particle Size		50 Mesh (297 micron) – Dip 70 Mesh (210 micron) – Spray
Bulk Density		25 lb/ft ³ (At rest)
Specific Gravity	ASTM D792	0.97 g/cm ³
Melting Point		221 °F (105 °C)
Melt Index	ASTM D1238	20 g - 10 Minutes - 275-300 °F (135-150 °C)

Coating Properties

Recommended Thickness	ASTM D6132	8 mils (203 micron) - 12 mils (305 micron)
Gloss	ASTM D523	70 ± 5
Hardness	ASTM D2240	Shore D 55
Tensile Strength	ASTM D638	3496 psi (24 MPa)
Elongation	ASTM D638	414 %
Vicat Softening Point	ASTM D1525	162 °F (72 °C)
Impact , Direct/Reverse, inch lbs	ASTM D2794	160/160
Impact Resistance	ASTM G14 - 04	<77 in.lb. if tup weight 3.2 lb.
Taber Abrasion	ASTM D4060	28 mg loss, CS10 wheel & 61 mg loss, CS17 wheel
Adhesion	ASTM D4541	>1000 psi (7 MPa)
Flexibility	ASTM D522	1/8 in (3.2 mm), no cracks (>32%) (Conical Mandrel)
Salt Spray	ASTM B117	2000 hrs. No significant under cut or creep
QUV	ASTM G53	2000 hrs, No significant change in color or gloss.
Humidity Resistance	ASTM D2247	No blistering or loss of gloss after 1000 hours.
VOC Content		ZERO

Chemical Resistance* the results given are full immersion in the chemicals for a prolonged period of time. Pro17 is resistant to splashes and short term contact of most chemicals.

Dilute Acids 140°F		Good
Dilute Alkali 140°F		Good
Salts (except peroxides) 140°F		Good
Solvents 73°F		Poor

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