



TECHNICAL DATA SHEET

GENERAL DESCRIPTION
– SUBJECT TO CHANGES OR DEVIATIONS

ElectroFin[®] E-Coat Factory Applied Corrosion- Resistant Coil Coating

PRODUCT DESCRIPTION

ElectroFin[®] E-Coat is a water-based, flexible cationic epoxy polymer using an electro-coat process specifically engineered for HVAC&R heat transfer coils. PPG POWERCRON[®] HE (high edge) technology improves coverage of fin edges through a unique polymer that controls the coating flow characteristics.

COIL COATING SPECIFICATION

Heat exchanger (HX) coil shall have a flexible cationic epoxy polymer e-coat uniformly applied to all metallic surfaces with no material bridging between fins. The electro-coat process shall ensure complete HX encapsulation of all conductive surfaces with uniform dry film thickness from 0.6-1.2 mils (15-30 μm). E-coating shall meet 4B-5B rating for cross-hatch adhesion per ASTM B3359-93. Corrosion durability will be confirmed through testing to no less than 6,000 hours salt spray resistance per ASTM B117-90 using scribed aluminum test coupons. After e-coat cure, HX shall receive a spray-applied, 2K polyurethane black topcoat to prevent UV degradation of epoxy e-coat film. Topcoat shall have 60 degree gloss (>90%) and dry film thickness of 50-60 μm .

ELECTROFIN[®] E-EOAT MEETS THESE TEST STANDARDS

- ASTM B117 / DIN 53167 Salt Spray - 6,000+ hours
- ASTM G85 Annex A3 SWAAT Modified Salt Spray - 2,500 hours
- VA Master Construction Specification Division 23 for High Humidity Installations
- CID AA-52474A (GSA)

TECHNICAL PROPERTIES

PROPERTY	TEST METHOD	PERFORMANCE
Salt Spray Corrosion	ASTM B117 / DIN 53167	6,000+ hours
SWAAT Corrosion	ASTM G85-A3	2,500 hours
Cross Hatch Adhesion	ASTM D3359	4B-5B
Pencil Hardness	ASTM D3363	2H minimum
Dry Film Thickness	ASTM D7091	0.6-1.2 mils / 15-30 µm
Direct Impact	ASTM D2794	160 in-lb
Water Immersion	ASTM D870	1,000 hours
Humidity	ASTM D2247-99	1,000 hours minimum
Heat Transfer Reduction	--	less than 1%
Bridging	--	No bridging including enhanced & micro-channel fin designs
Coating of Enhanced fins	--	Up to 30 fins per inch
pH Range	--	3-12
Temperature Limits	--	-40°F to 325°F / -40°C to 163°C (dry load)
Gloss - 60 Degree	ASTM D523	55-75

ELECTROFIN[®] E-COAT VS. OTHER HX COATINGS

	ELECTROFIN [®] E-COAT	DIP PHENOLICS	ELASTOMERICS	OTHER E-COATS
Application Method	Complete Immersion Cathodic Deposition	Manual Dip or Flow	Manual Dip or Flow	Anodic or Cathodic Deposition
Flexibility	Excellent	Poor-Good	Excellent	Good
Coating Uniformity	Computer-controlled Consistent (0.6-1.2 mils)	Manual Inconsistent (2-6 mils)	Manual Inconsistent (2-6 mils)	Inconsistent (0.4-1.5 mils)
Coating Penetration	Computer-controlled Consistent	Uncontrolled/Potentially Inconsistent	Uncontrolled/Potentially Inconsistent	Inconsistent to Bare Metal
Bridging	None – up to 30 fpi & 16 rows	Limited to 16 fpi with some bridging	Limited to 14 fpi with some bridging	Limited to 14 fpi with some bridging
Thermal Loss	< 1%	2% – 6%	2% – 6%	1% – 4%