



ElectroFin[®] heat transfer coatings



TECHNICAL DATA SHEET

GENERAL DESCRIPTION
– SUBJECT TO CHANGES OR DEVIATIONS

EFINSM Pro ShieldTM 5 ElectroFin[®] E-coat

PRODUCT DESCRIPTION

EFINSM Pro ShieldTM 5 ElectroFin[®] E-coat is a single layer corrosion resistant coating for heat exchangers called Electrodeposition (E-coat). ElectroFin[®] E-coat is a water-based, flexible cationic epoxy polymer that utilizes a process specifically engineered for Heat Exchangers. PPG POWERCRON[®] HE (high edge) technology improves coverage of fin edges through a unique polymer that controls the coating flow characteristics.

SPECIFICATIONS

Heat exchanger (HX) coils 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 0.5-1.2 mils. ElectroFin[®] E-coat shall meet a 5B rating for cross-hatch adhesion per ASTM D3359. Corrosion durability will be confirmed through testing to no less than 15,000 hours salt spray resistance per ASTM B117 using scribed aluminum test coupons. EFINSM Pro ShieldTM 5 ElectroFin[®] E-coat can be used as a single layer coating or it can be combined with a Conversion Coat and/or a Topcoat as needed for additional corrosion and UV protection, see EFINSM Pro ShieldTM 7 ElectroFin[®] E-coat + Insitu[®] Topcoat and EFINSM Pro ShieldTM 10 TCP + ElectroFin[®] E-coat + Insitu[®] Topcoat.

EFINSM PRO SHIELDTM 5: ELECTROFIN[®] E-COAT MEETS THESE TEST STANDARDS

- ASTM B117 Salt Spray - 15,000+ hours
- ASTM G85 Annex A3 SWAAT Modified Salt Spray > 3,000 hours
- CID AA-52474A (GSA)

EFINSM PRO SHIELDTM 5: ELECTROFIN[®] E-COAT MEETS THESE EU REGULATIONS:

- ElectroFin[®] E-coat is REACH and RoHS compliant

EFINSM PRO SHIELDTM 5 TECHNICAL PROPERTIES

PROPERTY	TEST METHOD	PERFORMANCE
Salt Spray	ASTM B117	15,000 hours
Pencil Hardness	ASTM D3363	2H
Cross Hatch Adhesion	ASTM D3359	5B
Humidity	ASTM D2247	1000 hours
SWAAT Corrosion	ASTM G85-A3	>3000 hours
Dry Film Thickness	ASTM D7091	0.5-1.2 mils / 12-30 μ m
Direct Impact	ASTM D2794	Passed 160#
Heat Transfer Reduction	---	Less than 1%
Mandrel Bend	ASTM D522M	Pass 1/4"
C5-I Saturated Condensation	ISO 6270	Pass C5-M
C5-I Salt Spray	ISO 7523	Pass C5-M
C5-I Chemical Resistance	ISO 28212-1	Pass C5-M

EFINSM PRO SHIELDTM 5: 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 (0.5-1.2 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%