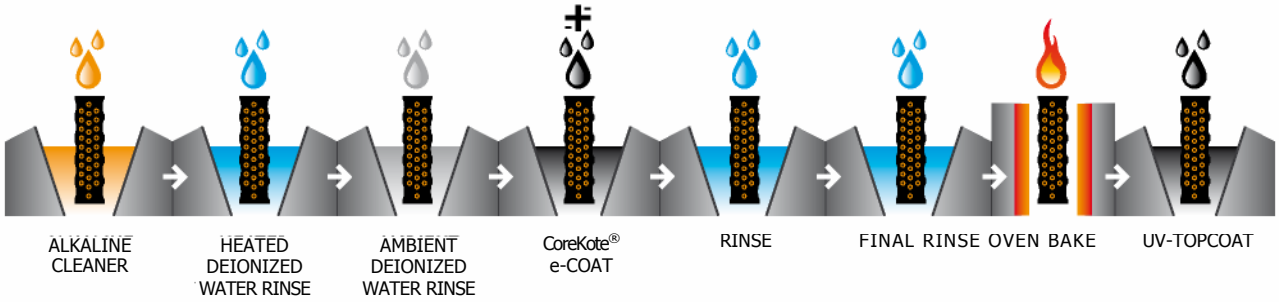
Se-Cliff Coatings

Corekote2000®

Process Stages

CoreKote® e-Coat Process



e-Coating is the process by which a metallic work piece (coil) is submerged in a paint / water bath where electricity is used to deposit paint onto it. CoreKote® e-Coat is a factory-applied corrosion-retardant coil coating which is applied in one of our four e-Coat facilities.

Corrosion Retardancy

In the e-Coating process, the coil acts in the same way as a magnet. The e-Coating molecules are electrically attracted to the metallic coil surfaces, meaning the entire coil is completely and uniformly e-Coated. The result is a finish which provides excellent corrosive retardancy to coastal marine (salt-air), industrial and urban environments. When properly maintained, you can expect CoreKote® e-Coated coils to provide protection for years.

Resistance to UV Degradation

When coils are to be subjected to ultraviolet exposure, they receive a spray-applied, UV-resistant urethane mastic topcoat. As a result, UV degradation of the epoxy e-Coat polymer molecules is eliminated and the film integrity is maintained.

Proven Effective

The electro-deposition process is the most automatic, controllable, and efficient method for applying a corrosion-inhibiting e-Coating to a metallic work piece. The process dictates that all metal surfaces are e-Coated in an even, uniform finish. All coil surfaces reach an average e-Coat dry-film thickness of 1 mil (0.001").

Specifications

Coils will have a flexible epoxy polymer e-Coat uniformly applied to all coil surface areas with no material bridging between fins. The e-Coating process will ensure complete coil encapsulation and a uniform dry film thickness from 0.6– 1.2 mils on all surface areas including fin edges and meet 5B rating 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 B1 17-90 using scribed, aluminum test coupons. Coils subjected to ultraviolet (UV) exposure will receive a spray-applied, UV-resistant urethane mastic topcoat to prevent UV degradation of epoxy e-Coat film.

Technical Performance

Test	Standard	Qualification
Dry Film Thickness	ASTM D7091-05	0.6-1.2 mils
Gloss - 60°	ASTM D523-89	65- 90%
Pencil Hardness	ASTM D3363-00	2 H Minimum
Water Immersion	ASTM D870-02	>1000 hours @ 100°F
Cross Hatch Adhesion	ASTM D3359-97	4B - 5B
Impact Resistance	ASTM D2794-93	160 injlbs. Direct
Salt Spray	ASTM B117-97	6,048+ Hours
Humidity	ASTM D2247-99	1,000 Hours Minimum
Durability	-	Very Flexible, Consistent Film
Heat Transfer Reduction	ARI 410	Less Than 1%
Bridging	-	No Bridging Guaranteed
Coating Of Enhanced Fins	-	Up to 30 fins per inch
pH Range	-	3-12
Temperature Limits		-40° F to 325° F

CoreKote® E-coat meets these test standards

- MIL-C-46168 Chemical Agent Resistance - DS2, HCl Gas
- CID A-A-52474A (GSA)
- MIL-STD 810F, Method 509.4 (Sand and Dust)
- MIL-P-53084 (ME) – TACOM Approval
- MIL-DTL-12468 Decontamination Agent(STB)
- DPG (Dugway Proving Grounds) Soil &Water Exposure Tests
- GM9540P-97 Accelerated Corrosion Test (120 cycles)
- ASTM B117-G85 Modified Salt Spray (Fog) Testing– 2,000 hours (tested by ARL for Lockheed Martin)

CoreKote® e-Coat vs. Others

	CoreKote® e-Coat	Dip Phenolics	Elastomerics	Other E-coats
Application Method	Complete Immersion Cathodic Deposition	Manual Dip or Flow	Manual Dipor 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	Manual "Dip and Pray"	Manual "Dip and Pray"	Inconsistent to Bare Metal
Bridging	None – Up to 30 fpi & 16 rows of tube rows	Limited to 16 fpi with some bridging	Limited to 14 fpi with some bridging	Limited to 14 fpi with bridging
Thermal Loss	<1%	2%–6%	2%–6%	1%–4%