

## E-coat

### Anti-corrosion coil coating

#### General information & application

E-coat is a factory applied electro-deposition coating process that guarantees complete heat exchanger coverage: a specialized coil coating to give our heat exchangers the longest possible life and keep them efficient for the full operating lifecycle. Process steps are shown in the image at the bottom of the page.

E-coat was designed to provide corrosion resistance for both fin and tube in coastal marine environments.

Alfa LU-VE is committed to using cleaner end products and cleaner operating processes. E-coat is water-based, which makes it environment-friendly



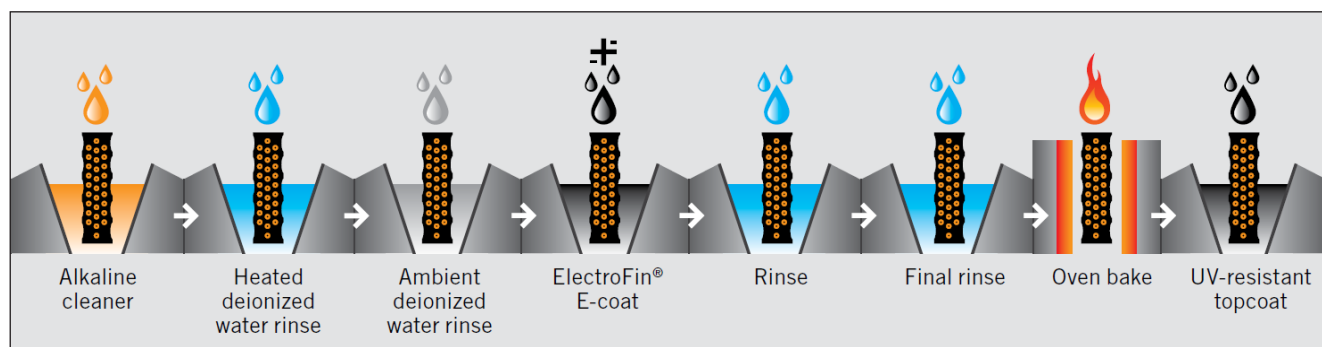
#### Standard configuration

- Cathodic epoxy coating material application, penetrating deeply into all coil surfaces
- Covers edges and fills cracks
- Ensures consistent film thickness
- Temperature range: -40 °C to +163 °C
- Suitable both for indoor and outdoor applications (mandatory top coating for UV resistance).
- No limitations on fin spacing
- No limitation on number of rows
- Thermal efficiency loss <1%

#### Benefits

- Ensures durability and long life to coils
- Reduced maintenance
- Complete coverage (incl. sharp edges)
- Coil operating life 5 times longer compared to uncoated coil
- ISO 12944 Compliant, C5 industrial and C5 Marine High Durability certified (over 15 years)
- 5 years guarantee
- No bridging (incl. louvered fins)
- Resistant to most chemical aggressive agents

#### E-coat process



## Coil treatments summary table

	F-coat	Blygold	E-coat	Heresite	Tinning
Minimum temperature	-50 °C	-20 °C	-40 °C	-70 °C	-50 °C
Base material	Aluminium	Aluminium	All	All	Copper
Protected coil parts	Fins	Fins	Fins, tubes, manifolds, frame	Fins, tubes, manifolds, frame	Fins, tubes, manifolds
Coating material	Polyuretanic	Polyurethane+ Al pigments	Epoxy	Phenolic resin	Tin
Thermal Efficiency loss	≤ 3%	≤ 3%	≤ 1%	≤ 5%	≤ 1%
UV-radiation	Excellent	Excellent	Excellent (with Topcoat)	Moderate	Excellent
Thickness (µm)	~25	~25	~25	~15-70	~2
ISO 12944	Not available	Not available	C5I-H & C5M-H	Not available	Not available
ASTM B117-97 (h)	4000	4000	15000	6000	Not available
Cost level	***	****	****	*****	*****

## Typical installation environments for E-coat

Installation site	Properties	Aggressive substances	E-coat protection
Power plant	Combustion products	Sulfur oxides (SOx), Nitrogen oxides (NOx), Chlorides, Fluorides, CO, Volatile organic compounds	Excellent
Chemical industry	Process emissions	Ammonia, Chlorides, NOx, SOx	Excellent
Bio fuel plants	Process emissions	Ammonia, SOx, NOx, HC, Volatile organic compounds	Excellent
Petro industry	Oils, fuel, process emissions	Ammonia, Chlorides, NOx, SOx, CO, Volatile organic compounds	Excellent
Airports	Combustion products	NOx, SOx, Chlorides	Excellent
Agricultural	Fertilizer, organic compounds	Ammonia, SOx, NOx	Excellent
Sea air, ships, offshore	Salt water spray	Chlorides, Sulphur	Excellent
Heavy industry	Carbon dust	Sulphur, SOx, NOx	Excellent
Food Industry	Fat, air humidity, cleaning agents	Chlorine, acid, SOx, NOx	Excellent
Waste disposal industry	Organic airborne particles	Ammonia, Fly ashes, Chlorides	Excellent
Sewage treatment plants	Organic airborne particles	Sulphur, Ammonia	Excellent
Deserts	Low air humidity	Sand	Excellent

### Optional features

UV-Resistant Topcoat option consist of a protective polyurethane layer applied by spray. It is mandatory for outdoor application and UV exposed installations in general.

### Chemical resistance

E-coat is resistant to a long list of aggressive chemical compounds. For detailed information about suitability to different operating environments please contact Alfa LU-VE. Our heat exchangers specialists will guide you towards the best solution for your needs.

### Selection

Selection and pricing is to be performed with our Alfa LU-VE air heat exchangers specialists. They will guide you to select the best solution according to the specific installation needs. Please contact our sales organization for details and full technical documentation.

### Certifications

E-coat has been tested according to the standards below:

- ASTM B117-97 Salt Spray - 15,000 hours
- ASTM G85 Swaat Test - 4,000 hours with no failures
- QUV-A Weathering (topcoat) : ASTM 4587 2,200 hrs.
- DIN 50018 Kesternich - 120 cycles
- GM 9540P-97 Accelerated Corrosion Test: 120 cycles
- VA Master Construction Specification Division 23 for High Humidity Installations
- MIL-C-46168 - Chemical Warfare Decontaminating Solution DS2
- CID AA-52474A (GSA)
- MIL-STD 810F, Method 509.4 (Sand and Dust)
- MIL-P-53084 (ME) - TACOM Approval

### How to contact Alfa LU-VE

Up-to-date Alfa LU-VE contact details for all countries are always available on our website at [alfa.luvegroup.com](http://alfa.luvegroup.com)