

T-GUARD[®] ENC

High Chemical Resistance, Novolac Epoxy Resin Based Protective Coating



T-GUARD[®] ENC is a solvent free, highly cross-linked, high build epoxy-novolac-based coating. T-GUARD[®] ENC is a two part material and can be applied by brush, roller or airless spray. T-GUARD[®] ENC is grey in colour. It is formulated to be applied in one or two coats to achieve a minimum total-dry-film thickness of 500 microns. Higher thickness can be specified.

Uses

T-GUARD[®] ENC is an Epoxy Novolac lining designed to provide protection to concrete and steel structures in aggressive chemical conditions. The material is particularly suitable in wastewater treatment plants, desalination plants, food processing plants, pump and paper mills, electric powerplants, chemical manufacturing plants, fertilizer and insecticide plants and petroleum refineries.

T-GUARD[®] ENC may be used with or without Thermax Anti-slipgrains as a heavy-duty floor coating in applications such as chemical processing and drum storage areas, loading docks and ramps. It may also be used in conjunction with glass fibre cloth to increase the thickness of the system or to reinforce structures subjected to aggressive chemicals.

Benefits

- 100% solids, no solvents
- Excellent chemical resistance in pH ranging from 114 at 25°C
- Excellent adhesion to properly prepared concrete, mild steel, and other substrates
- Excellent abrasion resistance

Specification

Chemical and Abrasion Resistant Lining

The chemical and abrasion resistant coating shall be TGUARD[®] ENC, a high build, two-pack epoxy-novolac system specially designed to provide a tough and impermeable high chemical resistant film.

Properties

Solid Content	96-98%
Finish	Gloss
Colour	Grey
Mix Density	1.35-1.45 gm/cc
Pot Life	15-20 min at 30°C

Tack-free Time	8-10 hours @ 23°C
	4-6 hours @ 35°C
Overcoating Time	<16 hours @ 23°C
	10 hours @ 35°C
Full Cure	7 days @ 23°C
	5 days @ 35°C
Tensile Strength	30 MPa
Elongation	Approx. 3%
Flexural Strength	45 MPa
Compressive Strength	85 MPa
Hardness (Shore D)	85+5
Abrasion Resistance (1 kg, H-22 Wheels)	0.10 mg/cycle
Service Temperature	<60°C

Chemical Resistance

The fully cured coating is resistant to the splash/spillage of the following chemicals-

Acetic Acid, 25%	Hydrochloric Acid, 35%
Ammonium Hydroxide*	Hydrofluoric Acid, 25%
Benzene	Jet Fuel
Benzoyl Chloride	Isopropanol
Benzyl Alcohol	Ethylene Glycol
Monoethyl Ether	Bleach (Sodium Hypochlorite)
Kerosene	Boric Acid*
Lactic Acid, 20%	Brake Fluid
Methyl Isobutyl Ketone	Brine, 10%
Mineral Spirit	Car Oil
Nicotinic Acid*	Carbon Tetrachloride
Nitric Acid, 30%	Castor Oil
Phenol, 50% in IPA De-ionised water	Phosphoric Acid, 85%
Diesel Fuel	Potassium Hydroxide*
Diethanolamine, 88%	Propylene Glycol
Ethylene Glycol	Sea Water
Hydrogen Peroxide, 20%	Sol Skydrol
Fatty Acids	Sodium Hydroxide*
Formaldehyde, 37%	Sulphuric Acid*
Gasoline	Tartaric Acid, 50%
Hexamine, 25%	Toulene
Hexane	Vegetable Oils
Hydraoine, 35%	Xylene

The local Thermax office should be consulted for resistance to specific chemicals and conditions or when long term exposure is required.

Instructions for Use

Preparation of Concrete Surfaces

All surfaces, which are to receive the lining, must be at least 28 days old and have a moisture content of less than 5%. These surfaces shall be dry, sound and free from debris and loose material. The substrate must be free from contamination such as oil, grease, wax, dirt or any other form of foreign matter which might affect adhesion.

All blow holes and imperfections should be filled with MAXTREAT[®] EFC.

Preparation of Steel Surfaces

All surfaces should be grit blasted to meet the requirements of BS4232, First Quality.

The lining work should be programmed so that newly cleaned steel is coated as soon as possible before the formation of rust or scale.

Priming

T-GUARD[®] ENC is designed to be used without primer. However, if the condition of the concrete substrate requires priming, Tecfloor PR can be used.

Mixing

It is imperative that the resin be thoroughly mixed with the hardener in the exact ratios to ensure optimum performance. Therefore, the entire contents of the hardener can should be added to the base container and mixed until a uniform colour and consistency are obtained, taking particular care to scrape the sides and bottom of the container. It is recommended that mechanical mixing be employed using a Jiffy mixer on a slow speed electric drill.

Application

Once mixed, T-GUARD[®] ENC should be immediately applied to the prepared surface ensuring a continuous coating of uniform thickness is obtained. Stiff nylon brush or short nap roller is recommended for such application. Faster rate of application is possible using airless spray equipment.

Re-coating

To re-coat, it is imperative that the second coat be applied within the specified over-coating time.

Use of Glass Fibre Reinforcement

T-GUARD[®] ENC may be used in conjunction with glass fibre cloth to increase the thickness of the system or, where necessary to bridge fine cracks in the substrate. The cloth should be laid directly on the first coat while wet and should be pressed in and smoothed out with a split washer roller. A second coat should then be applied within the specified over-coating time.

Use of Thermax Anti-slip grains T-GUARD[®] ENC can be used in conjunction with Thermax- Antislip Grains to provide a heavy-duty slip resistant flooring system.

The first coat will be applied as described above with a minimum film thickness of 200 microns. The base coat should now be dressed with the chosen Thermax Antislip Grains.

The recommended procedure is to completely blind the base coat i.e. apply excess dressing aggregate to completely obliterate the base coat.

When the base coat has reached initial cure, the excess Antislip Grains should be vacuum-cleaned from the surface.

The top coat can then be applied. Care should be taken to ensure that a continuous film is achieved and the surface is completely sealed.

Cleaning

T-GUARD[®] ENC should be removed from tools and equipment with Cleaning Sol* immediately after use. Cured material can only be removed mechanically.

Limitations

- Substrate, ambient and product temperature must remain above 15°C during application and curing. Minimum material /container temperature for spray application is 20°C. Avoid moisture contamination.
- T-GUARD[®] ENC should not be applied on to surfaces known to, or likely to suffer from, rising dampness, potential osmosis problems or have a relative humidity greater than 75% as measured in accordance with

T-GUARD[®] ENC

BS 8203 Appendix-A, or by a Thermo Hygrometer.

Shelf Life

T-GUARD[®] ENC has a shelf life of 12 months if stored in normal warehouse conditions in unopened containers.

Supply

T-GUARD[®] ENC: 4 litre packs
Tecfloor PR: 1 & 4 litre packs
Cleaning Sol: 5 and 20 litre cans

Coverage

T-GUARD[®] ENC: 8m²/pack @ 500 microns
Tecfloor PR: 5.5-6.5m² per litre

Note:

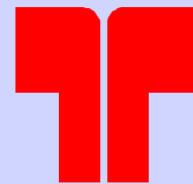
The coverage figure is theoretical - due to wastage factors and the variety and nature of substrates, practical coverage figures may be substantially reduced.

Other Segments:

- Concrete Admixtures • Surface Treatments • Grouts & Anchors • Repair & Rehabilitation
- Protective Coatings • Industrial Flooring • Waterproofing • Sealants • Adhesives

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