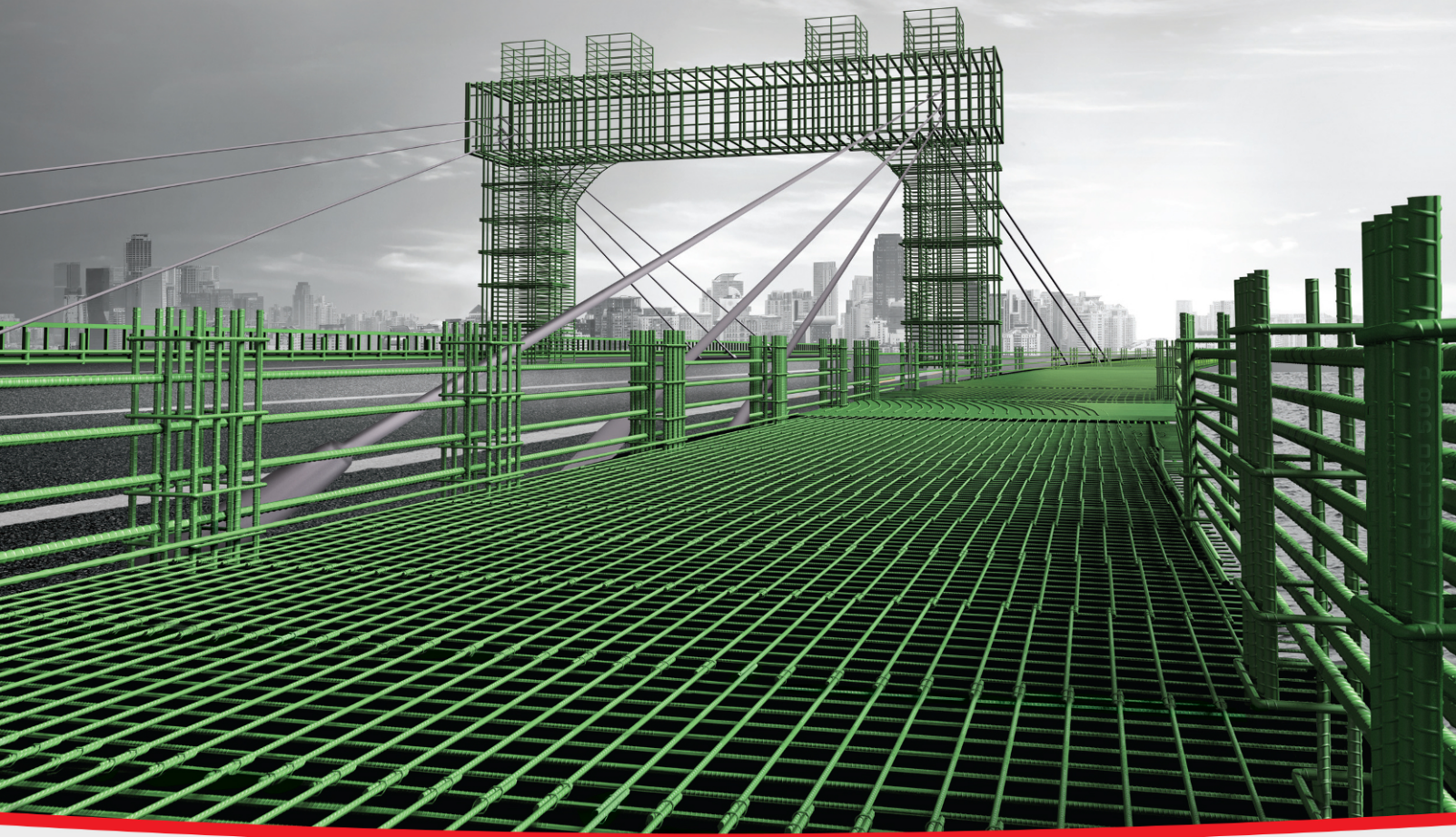


BUILD IT RIGHT

WITH THE ASSURANCE OF SAFETY



**Western India's first fully integrated
manufacturing facility, producing BIS approved
Epoxy Coated TMT Bars at a single location.**

(Iron ore to Epoxy Coated TMT Bars)



EPOXY COATED BARS

Electrotherm (India) Ltd. is a well-diversified conglomerate having a strong presence in the field of engineering and projects serving steel, foundry & heat treatment industries since 1983. Over the years, it has forayed into manufacturing of Induction Melting Furnaces, Continuous Casting Machines, Steel, Transformers and much more. It launched TMT bars in 2006 and in a short span of 10 years, ET TMT bars have become the most preferred and no. 1 brand of TMT bars in Gujarat. Today, Electrotherm (India) Ltd. is Western India's first fully integrated manufacturing facility of epoxy coated TMT bars with unique offerings like ET TMT Epoxy Protect and ET TMT Cut & Bend which are ready-to-use TMT bars.

TESTING

CHEMICAL RESISTANCE TEST



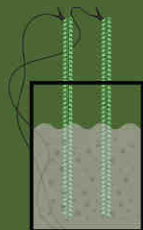
The chemical resistance of coating is evaluated by immersing the bars in chemical solutions as per BIS 13620:1993.

ADHESION OF COATING



The adhesion of the coating is evaluated by bending coated TMT bars to 120° (after rebound) around a mandrel of size as mentioned in BIS 13620:1993.

RESISTANCE TO APPLIED VOLTAGE



The effect of electrical and electrochemical stresses on the bond of coating to steel and the integrity of the coating is assessed as per BIS 13620:1993.

SALT SPRAY RESISTANCE TEST



The resistance of the coating to a hot and wet corrosive environment is evaluated by exposing 250 mm long coated steel TMT bars containing intentional defects to salt spray as mentioned in ASTM - 775.

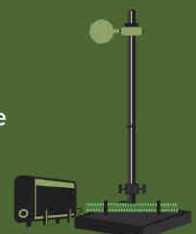
ABRASION RESISTANCE



The resistance of the coating on coated panels to abrasion is tested by a Taber abraser as per the procedure mentioned in BIS 13620:1993.

IMPACT TEST

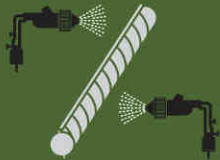
The resistance of the coated TMT bars to mechanical damage is determined by the falling weight test as mentioned in BIS 13620:1993.



ABOUT EPOXY COATING

Fusion Bonded Epoxy coating, commonly referred to as FBE coating is widely used to protect concrete TMT bars, steel pipes, piping connections etc. used in construction. FBE coatings are in the form of dry powder at normal atmospheric temperature. The powder is applied electrostatically to the surface of cleaned hot steel bars and cured to form a protective film after undergoing various chemical processes. The epoxy coated bars last longer due to the protective film and thereby contribute to the quality of construction.

PROCESS



SURFACE PREPARATION

TMT bar is cleaned for surface contamination such as grease and oil by solvent cleaning. Shot blast cleaning is the most commonly used method for preparation of steel surfaces. This effectively removes rust, scales, slats etc. from the surface and produces an industrial grade of a clean and rough surface finish.



PRE-HEATING

Heating can be achieved by using several methods, but the most efficient method is induction heating. TMT bars are passed through a high frequency alternating current along with a magnetic field, which heats according to the required FBE coating application temperature. Typical application temperature for a stand-alone FBE is 225°C to 245°C.



EPOXY POWDER APPLICATION

The FBE powder is placed on a fluidisation bed. The heated TMT bar is passed through the coating booth with number of electrostatic epoxy spray guns and the dry powder is sprayed (cloud formation) on the hot TMT bar. Here, the powder particles are suspended in a stream of air which is electrically charged due to which epoxy powder particles are attracted to the grounded TMT bar. As soon as the charged epoxy powder particles hit the hot TMT bar, they melt and flow into the anchor profile. The heat also initiates a chemical reaction which causes the epoxy powder molecules to form cross linked polymers which give the coating its beneficial properties.



CURING AND COOLING

Epoxy coated TMT bars are given a thermal treatment by keeping them at 225°C for a duration recommended by epoxy powder manufacturer resulting in fully cured coating. The coated bars are passed through a cooling tunnel after curing, where water is sprayed on the bars to cool them. The bars are then transferred to the final inspection rack for testing and inspection.

BENEFITS

- The superior corrosion protection can extend the life of the epoxy coated TMT bars, resulting in significantly lower lifecycle costs over time.
- It needs little maintenance that leads to substantial savings in labour costs. It is flexible to allow straight bars to be bent during fabrication on a special mandrel to protect the coating from damage.
- Epoxy powder coated bar is a sustainable solution that is environment-friendly.
- Studies have shown that structures built with epoxy last longer than similar structures made with black steel.
- Epoxy coating is very cost-effective as it adds very little to the overall cost of the structure and lifecycle.
- As the technique is factory based, it enables uniform thickness of coating which adds to the quality of production.
- The bonding of coating with steel TMT bars is high as it has excellent adhesive property.
- The Fusion Bonded Epoxy coating acts as an insulator for electrochemical cells and offers barrier protection to steel which prevents entry of chloride ions through it.

Available Grades: Fe 500, Fe 500 D, CRS 500 & CRS 500 D

Available Sizes: 8 mm to 40 mm



BUILD IT RIGHT

Electrotherm (India) Limited

HQ: 72, Palodia via Thaltej, Ahmedabad – 382115, Gujarat, India.

Email: ettmt@electrotherm.com | Ph.: +91 2717 660550 / 649

www.electrothermsteel.com

IS 13620:1993

CM/L-7600079715

THERMEX[®]
Advanced German Technology

