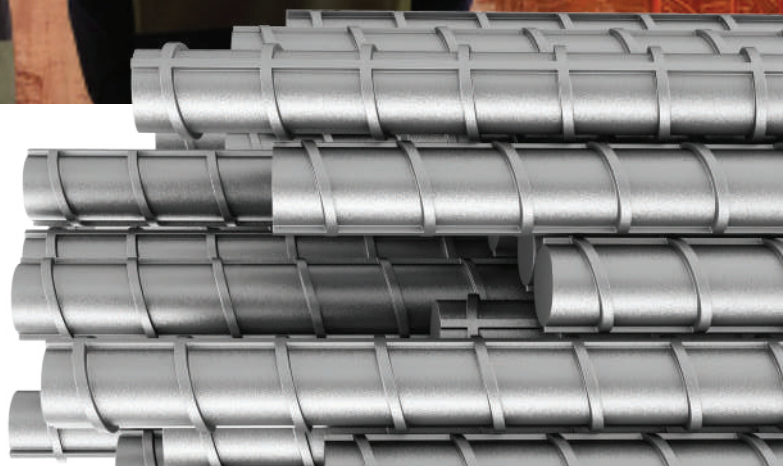




ELECTROTHERM®

BUILD IT RIGHT

REINFORCED WITH
SUPERIOR TECHNOLOGY
FORTIFIED WITH HIGH QUALITY



ELECTROTHERM (INDIA) LTD.

A trusted name for over four decades

Started operations in Gujarat, India, in 1983.

An ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 & ISO 50001:2018 certified company.

A well-diversified group with a strong presence in steel & pipe manufacturing, steel plant equipment, transformers, TMT bars, battery-operated electric vehicles, renewable energy, transmission line towers and education.

World leader in designing and manufacturing induction melting furnaces. Has forayed into continuous casting machines and ladle refining furnaces.

Offers total solutions from conceptualisation to commissioning of steel plants. Supplied 6000+ equipments to steel plants across 71 countries in 40 years.

Western India's largest fully integrated facility for manufacturing TMT bars. Capacity of 5LTPA.

A state-of-the-art research & development centre in Ahmedabad.

NABL-approved in-house physical and chemical laboratories.



AWARDS



BIS Compliance
Award – 2023



Excellence Award for
Consumer Insight – 2022



Ispat Agradoot
Award – 2022



Ispat Agradoot Award in 2019 & 2022 in recognition of pioneering work in steel by using integrated BF + DRI → IF → LRF → CCM (EMS) → RM → ECP route to produce high-quality Fe 500D TMT Bars.



India Manufacturing
Excellence
Award – 2019



Best Boiler User
Industry Award by
SteamTech – 2019



National Energy
Conservation
Awards – 2018

National Energy Conservation Award in 2018, 2016, & 2014.

Frost and Sullivan India Manufacturing Excellence Awards 2019 in enhancing manufacturing and supply chain excellence.

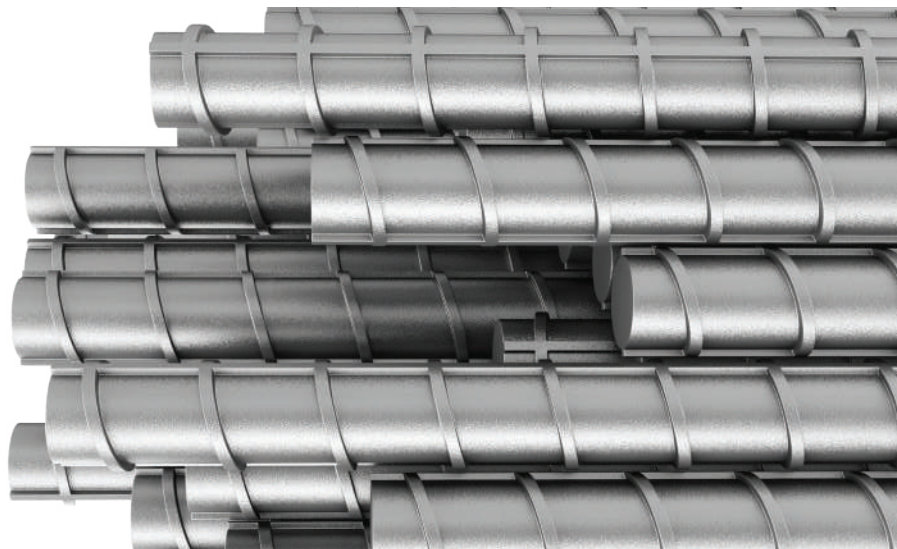


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The quality of the Thermo-Mechanically Treated Bars (TMT Bars) is vital for the strength, durability and longevity of all load-bearing civil structures.

Steel division, a unit of Electrotherm (India) Ltd., is a forerunner in the manufacture of high-quality TMT Bars. With a state-of-the-art manufacturing facility and an unwavering focus on excellence, ET TMT has raised the bar of quality in infrastructure projects.

Reinforced with superior technology and fortified with high quality, we at ET TMT are committed to helping our customers build their structures right!



INFRASTRUCTURE TO BUILD IT RIGHT

Our fully automatic, integrated, state-of-the-art 5.0 LTPA ET TMT bar manufacturing facility in Kutch, Gujarat, has set a new bar for quality.

Well-equipped manufacturing facility



Fully integrated
sponge iron kilns



Induction melting
furnaces



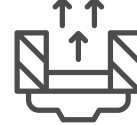
Ladle refining
furnaces



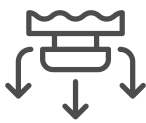
6/11 continuous
casting machines



Continuous high speed rolling
mill with Twin block module &
Advanced bar handling system
with variable AC drives



Three-stage
thermo-mechanical
treatment facility



Epoxy Coating
Plant



Spectrometry
facility



Cutting and bending
facility



Blast furnace
& sinter plant



Ductile iron pipe plant and
utilities (CPP & gas plant)



NABL-approved
physical and chemical
testing laboratories

The facility has a captive power plant to ensure uninterrupted power supply.

A QUALITY FOCUS EVERY STEP OF THE WAY

From ingredients to testing and QA of finished goods, ET TMT bars walk down a path with stringent quality norms



High-quality of ingredients

High-quality sponge iron/iron ore BIS-certified billet steel produced in-house.



Cutting-edge technology/ processes

Fully automated processes.

Ladle refining furnaces (LRF) with the unique & patented ELdFOS™ metallurgical process. Dephosphorisation and desulphurisation for refining steel as per BIS levels.

Latest THERMEX® quenching technology is used to produce ET TMT Rebar of the highest standard. During thermo mechanical treatment tempered martensitic structure formed at surface portion & microstructure of weld deposits consists of Acicular Ferrite (AF) along with ferrite & pearlite formed at core portion. The fine grained randomly oriented AF gives higher strength (YS, UTS) & higher elongation (more than 18%) & UTS/YS ratio ≥ 1.15 .

Homogenous distribution of corrosion resistant elements from core to surface.

ET TMT Fe 500, Fe 500 D, Fe 550, Fe 550 D and Fe 600 bars manufactured with superior notch

cutting machines to ensure consistent rib patterns and optimum depths. Machine-crafted ribs facilitate superior bonding with concrete.



Stringent testing and QA

Protocol-driven testing and QA in NABL-accredited in-house physical and chemical laboratories.

Quality approved by respected organisations like MES, RDSO, PGCIL, ISRO, NPCIL, NHAI, MSRDC, DFCIL, AMC, SMC, GSRTC, GSECL etc.



Superior products

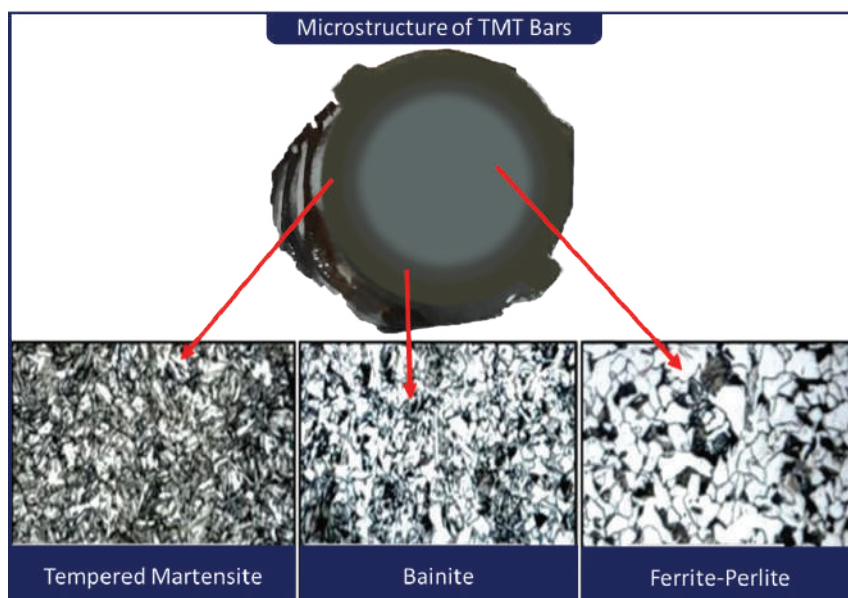
Long-lasting bars with high strength, ductility, bendability, and weldability.

Bars possess high strength to resist applied forces.

ET TMT Fe 500, Fe 500 D, Fe 550, Fe 550 D and Fe 600 bars have higher strength and ductility values than those specified by IS 1786:2008 standards.

The level of weldability is very high due to the low level of carbon content in ET TMT Fe 500, Fe 500 D, Fe 550, Fe 550 D and Fe 600 bars. Bars can be lap-welded with ease without loss of strength.

Bars have longer life due to superior pitting corrosion resistance.



WIDE RANGE OF PRODUCTS TO MEET MARKET NEEDS WITH PERFECTION

Types	Grades	Size	Certification
ET TMT Superior Quality Steel Bars	Fe 500	Standard Length: 12 meters Option of: 5 to 20 meters Diameter: 8 mm to 40 mm	IS 1786: 2008
ET TMT Refined Steel Bars	Fe 500 D Fe 550 Fe 550 D Fe 600	Standard Length: 12 meters Option of: 5 to 20 meters Diameter: 8 mm to 40 mm	IS 1786: 2008
ET TMT CRS Bars (ET Thermo-mechanically Treated Corrosion Resistant Steel Bars)	CRS Fe 500 CRS Fe 500 D CRS Fe 550 CRS Fe 550 D CRS Fe 600 (Also available in low P & S)	Standard Length: 12 meters Option of: 5 to 20 meters Diameter: 8 mm to 40 mm	IS 1786: 2008
ET TMT Epoxy-Coated Bars	All grades of CRS bars, refined steel bars, and superior steel bars (CRS bars also available in low P & S)	Diameter: 8 mm to 40 mm Option of: 5 to 15 meters	IS 1360: 1993
ET TMT Cut & Bend Bars	All grades of CRS bars, refined steel bars, and superior steel bars (CRS bars also available in low P & S)	Length & shape: As per the bar bending schedule Diameter: 8mm to 40 mm	IS 1786: 2008



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ET SUPERIOR QUALITY STEEL TMT BARS

Product description

Superior quality steel TMT bars are manufactured under an extremely regulated manufacturing process to eliminate all impurities. They have a meager percentage of sulphur and phosphorous. ET superior quality steel bars have higher force & corrosion resistance and load-bearing capacity. They are free from tramp elements like Cu, V, Ni, Cr, etc.

Advantages

- ✓ Excellent corrosion resistance, ductility & bendability, high weldability, strength and strong resistance on dynamic loading.
- ✓ Capacity to absorb sudden loads.
- ✓ Available in customizable variants.
- ✓ More reliable and safe for critical infrastructure due to better force resistance and load-bearing capacity.
- ✓ Application in RCC construction in buildings and other concrete structures. Suitable for all seismic zones (II, III, IV, V).

Product specifications

Criteria	Physical Properties	
	Fe 500	
	IS 1786: 2008	ET TMT Fe 500
Yield stress (N/mm ²) (min.)	500	520
Ultimate tensile strength (N/mm ²) (min.)	545	580
(UTS/YS) ration (min.)	1.08	1.15
Elongation% (min.)	12	18
Total elongation% (min.)	-	-

Criteria	Chemical Properties	
	Fe 500	
	IS 1786: 2008	ET TMT Fe 500
Carbon % (max.)	0.30	0.25
Sulphur % (max.)	0.055	0.050
Phosphorus % (max.)	0.055	0.050
Sulphur & Phosphorus% (max.)	0.105	0.100
CE % (max.)	0.42	0.40





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ET REFINED STEEL TMT BARS

Product description

High-quality steel TMT bars made using an integrated iron-ore induction furnace and ladle refining furnace. These bars use in-house refined steel from iron ore (without steel scraps). This steel is free from tramp elements like Cu, V, Ni, and Cr.

Advantages

- ✓

High-quality raw material, DRI and LRF technology ensure the elimination of major impurities.
- ✓

Electro Magnetic Stirring (EMS) at continuous casting
- ✓

Dephosphorisation and desulphurisation are achieved with high precision, patented LRF-ELdFOS™ technology.
- ✓

Multi-stage spectrometry testing done to check the purity of steel at every stage.
- ✓

Compact Housing Less Rolling Stands (vibration < 0.001 mm)
- ✓

Superior elongation, a high UTS/YS ratio and lower carbon, sulphur and phosphorous quantities helps preserve the steel and resist earthquake shocks.
- ✓

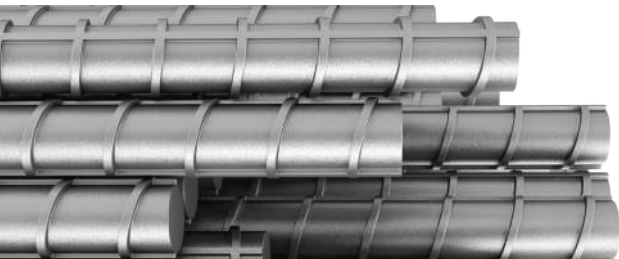
Suitable for all seismic zones (II, III, IV, V), high-rise apartments, road & power infrastructure, underground structures, cantilever structures.
- ✓

Quality assurance using Six Sigma.

Product properties

Criteria	Mechanical Properties							
	Fe 500 D		Fe 550		Fe 550 D		Fe 600	
	IS 1786: 2008	ET TMT Fe 500 D	IS 1786: 2008	ET TMT Fe 550	IS 1786: 2008	ET TMT Fe 550 D	IS 1786: 2008	ET TMT Fe 660
Yield stress (N/mm²) (min.)	500	520	550	570	550	570	600	610
Ultimate tensile stress (N/mm²) (min.)	565	600	585	660	600	660	660	705
Elongation (%) (min.)	19	18	10	18	14.5	18	10	16
Total elongation (%) (min.)	5	6	-	-	5	6	-	-
(UTS/YS) (min.) ratio	1.10	1.15	1.06	1.15	1.08	1.15	1.06	1.15
D in 500 D / 550 D denotes enhanced ductility.								

Criteria	Chemical Properties							
	Fe 500 D		Fe 550		Fe 550 D		Fe 600	
	IS 1786: 2008	ET TMT Fe 500 D	IS 1786: 2008	ET TMT Fe 550	IS 1786: 2008	ET TMT Fe 550 D	IS 1786: 2008	ET TMT Fe 660
Carbon (C) % (max.)	0.25	0.22	0.30	0.23	0.25	0.22	0.30	0.22
Manganese (Mn) % (max.)	-	1.50	-	1.50	-	1.50	-	1.50
Sulphur (S) % (max.)	0.040	0.035	0.055	0.050	0.040	0.030	0.040	0.030
Phosphorus (P) % (max.)	0.040	0.040	0.050	0.050	0.040	0.040	0.040	0.035
CE % (max.)	0.42	0.40	0.42	0.40	0.42	0.40	0.42	0.40
(S+P) % (max.)	0.075	0.075	0.100	0.100	0.075	0.070	0.075	0.065
Alloying element % (min.)	-	-	-	-	-	-	-	-





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ET CRS TMT BARS

Product description

ET TMT CRS Bars, essential in construction, feature advanced Thermo-Mechanically Treated (TMT) bars with heightened strength and corrosion resistance. The CRS (Cut, Bend, and Shape) capability ensures precise customization for efficient construction. Widely trusted for reliability in reinforced concrete structures, ET TMT CRS Bars deliver durable construction, meeting industry standards for integrity and longevity.

Advantages

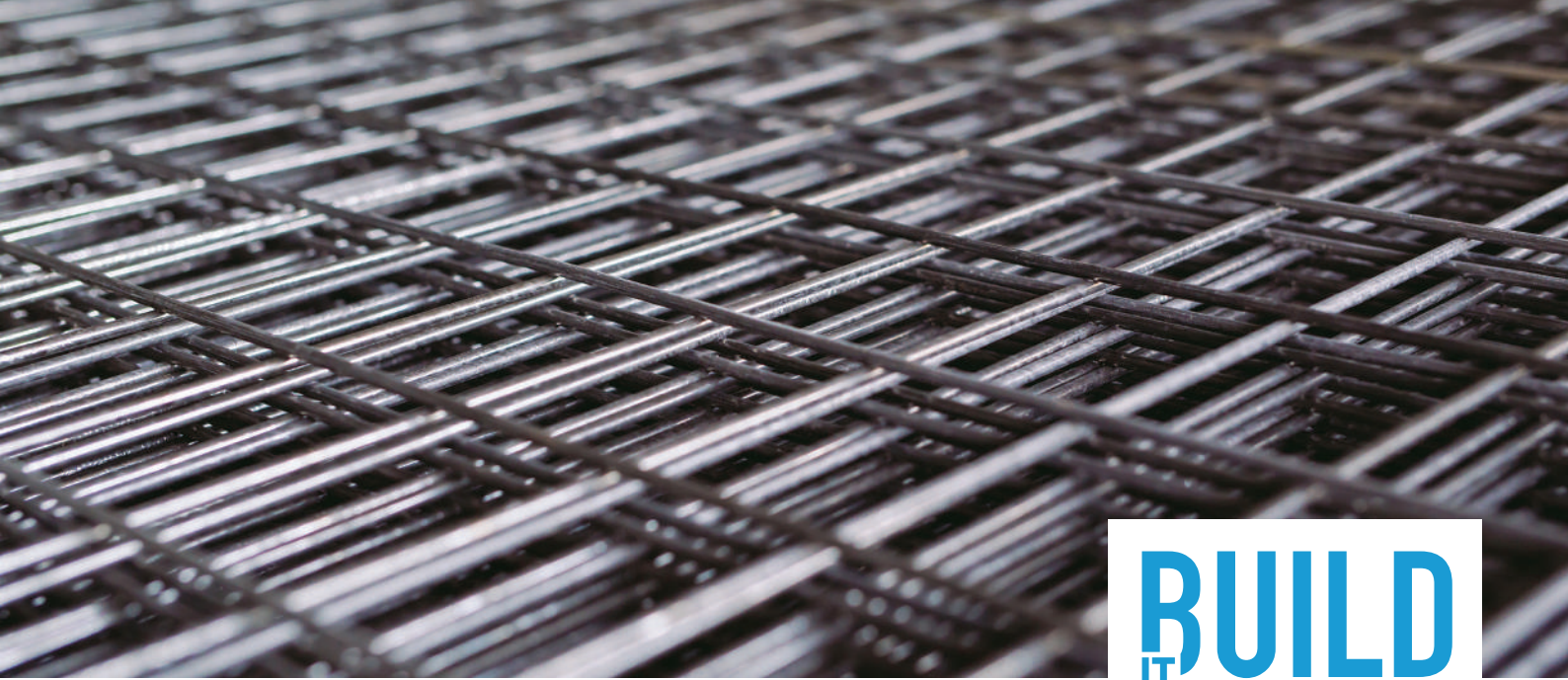
- ✔ High-quality sponge iron ensures high-quality CRS (Corrosion-resistant steel).
- ✔ Copper, chromium & vanadium additives enhance corrosion resistance.
- ✔ Superior pitting corrosion resistance ensures a long life for structures.
- ✔ High ductility enables steel to undergo permanent changes without rupturing.
- ✔ Superior bendability.
- ✔ Ideal for use in coastal areas, bridges, dams and zones with seismic activity.

Product properties

Criteria	Mechanical properties									
	CRS Fe 500		CRS Fe 500 D		CRS Fe 550		CRS Fe 550 D		CRS Fe 600	
	IS 1756: 2008	ET TMT Fe 500	IS 1700 2008	ET TMT FE 500D	IS 1786 2008	ET TMT Fe 550	IS 1786 2008	ET TMT Fe 550 D	IS 1786: 2008	ET TMT Fe 600
Yield stress (N/mm ²) (min.)	500	540	500	540	550	540	550	570	600	610
Ultimate tensile stress (N/mm ²) (min.)	545	620	565	620	585	660	600	660	660	705
Elongation (%) (min.)	12	18	16	18	10	14.5	14.5	18	10	16
Total elongation (%) (min.)	-	-	5	6	-	-	5	6	-	-
(UTS/YS) (min.) ratio	1.08	1.15	1.10	1.15	1.06	1.15	1.08	1.15	1.06	1.15
D in 500 D / 550 D denotes enhanced ductility.										

Criteria	Chemical properties									
	CRS Fe 500		CRS Fe 500 D		CRS Fe 550		CRS Fe 550 D		CRS Fe 600	
	IS 1786: 2008	ET EME Fe 500	IS 1786 2008	ET TMT Fe 500D	IS 1786: 2008	ET TMT Fe 550	IS 1786: 2008	ET TMT FE 550 D	IS 1786: 2008	ET TMT Fe 600
Carbon (C) % (max.)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Manganese (Mn) % (max.)	-	1.00	-	1.00	-	1.00	-	1.00	-	1.00
Sulphur (S) % (max.)	0.055	0.050	0.040	0.030	0.055	0.050	0.040	0.040	0.040	0.040
Phosphorus (P) % (max.)	0.120	0.100	0.120	0.080	0.120	0.100	0.120	0.080	0.120	0.080
Carbon Equivalent (CE) % (max.)	0.53	0.50	0.53	0.50	0.53	0.50	0.53	0.50	0.53	0.50
(S+P) % (max.)	-	-	-	-	-	-	-	-	-	-
Alloying element % (min.)	0.40	0.50	0.40	0.50	0.40	0.55	0.40	0.55	0.40	0.55

Also available in low P & S.



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ET EPOXY-COATED TMT BARS

Product description

Long life, high corrosion-resistant, fusion-bonded epoxy-coated TMT bars.

A fusion-bonded epoxy layer is coated electrostatically on pre-heated TMT bars (and cured) to deliver high protection from corrosive elements. Fusion-bonded epoxy is an excellent insulator and acts as a barrier to the entry of chloride ions. This enhances the life of steel bars.

Add This line : All ET grades of CRS, Refined Steel and Superior Quality Steel Bars can be delivered with fusion-bonded epoxy coating.

Advantages

- ✓ Epoxy coating available for CRS bars, refined steel bars, and superior quality steel bars.
- ✓ Epoxy-coated bars have twelve times longer life than bare TMT bars.
- ✓ Factory-based application ensures a uniform thickness of the coating.
- ✓ Epoxy coating is an environment-friendly, sustainable solution and adds excellent adhesive capacity to steel bars.
- ✓ Highly cost-effective. Adding an epoxy layer to bars does not add much to the cost burden. Lowers the cost of labour, as the bars require little or no maintenance.
- ✓ Ideal for use in all infrastructure and construction projects.

THE PROCESS

A protocol-based process for epoxy coating ensures a high-quality coat.



1

Surface Preparation

Bars cleaned and readied to deliver industrial-grade clean and rough surface.

2

Pre-heating

Induction heating with high frequency alternating current and a magnetic field at 225° to 245° C.



3

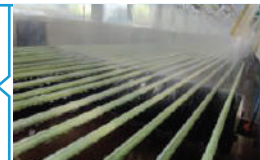
Epoxy coating

Bars passed through the fluidisation bed with FBE powder. Coating done with the help of spray guns and electrically charged air stream. Heat applied in the process helps the epoxy powder molecules to form crosslinked polymers, giving a high-quality coat.

4

Curing and cooling

Curing is done at 225° C, post which water sprays are used for cooling.





TESTING

A series of critical tests to guarantee the coat quality:

Chemical resistance test

Bars are immersed in solutions per BIS 13620:1993 norms to test chemical resistance.

Salt spray resistance

Exposure to salt sprays as per ASTM-775 recommendations to test resistance to wet and corrosive environments.

Adhesion of coating

Bars are bent to 120° around a mandrel to test the adhesion of the coating. This is done as per BIS 13620: 1993 norms.

Coating thickness test

Cheating thickness is checked using Coating thickness guage as per BIS 13620:1993

Coating holiday test

Coating Holidays are tested using Pinhole detector as per BIS 1360:1993.

Resistance to an applied voltage

Effect of electrical and electrochemical stresses on the bond and integrity of coating assessed as per BIS 13620:1993.

Impact test

Mechanical damage resistance is tested with the falling weight test as per BIS 13620: 1993.

Abrasion test

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.

Knoop hardness test

Knoop Hardness Test is done Using Coating Bar in Knoop Hardness Machine for checking hardness of coating as per BIS 13620:1993.

Parameter	ASTM 775/A775 M-16 (Reaffirmed 2019)	IS 13620: 1993 (Reaffirmed 2004)	ET TMT EPOXY COATED BARS
Coating Thickness	175-400 (microns)	100-300 (microns)	180-240 (microns)
Coating Holidays	9 holidays/3m (max.)	20 holidays/3m (max.)	100% Confirming
Coating Flexibility (Achieved)	Bend at 180° on specific mandrel at uniform rate for 45 second to complete	Bend at >120° on specific mandrel at uniform rate for 90 seconds to complete	Bend at >120° on specific mandrel at uniform rate for 60 seconds to complete
Resistance to Applied Voltage/CD Test	Yes	Yes	Yes
Abrasion Resistance	Max. 100 mg/1000 cycle	Max. 100 mg / 1000 cycle	Max. 50 mg / 1000 cycle
Knoop Hardness	-	Min. 16 HK	Min. 20 HK
Concrete Bonding Strength	Min. 85%	Min. 80 %	Min. 90 %

ET CUT & BEND TMT BARS

Product description

ET Cut & TMT Bars prefabricated & ready to use with epoxy coated & bare TMT (All mentioned grades).

ET TMT Cut & Bend bars is the right choice for long-lasting structures as it is ready-to-use and made in an automated plant assuring efficiency, accuracy and uniformity which leads to a quicker construction process.

- ✓ Automatic Italian Schnell machines ensure cutting and bending efficiency, accuracy and uniformity.
- ✓ Perfect joints with closed-loop reinforcement for lateral support. Provide shear reinforcement in beams.

- ✓ Available in a superior finish in all desired shapes and sizes, our refined and high-quality TMT bars are cut and bent using advanced programmed machines.
- ✓ Closed loop reinforcement for lateral support provides shear reinforcement in beams.
- ✓ The customer pays only for the theoretical blueprint weight. Saves on freight and on cumbersome handling and wastage in onsite cutting and bending.
- ✓ Best suited for critical design structures such as windmills, flyovers, bridges, etc.





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RAISING THE BAR

ET TMT, a prominent TMT Bar manufacturing company, stands out through its unwavering commitment to innovation, cutting-edge engineering processes, and state-of-the-art infrastructure. Our pioneering work for this process won us the Ispat Agradoot Award in 2019 & 2022, further validating our dedication to excellence. Prioritizing superior quality at every stage, the company is setting new benchmarks in the industry. Meticulous manufacturing processes ensure top-tier TMT bars, free from tramp elements like Cu, V, Ni, Cr. With a forward-thinking approach and a dedication to excellence, ET TMT consistently raises the bar in the industry, delivering construction solutions that prioritize durability, strength, and reliability.

TMT PRODUCT APPROVAL FROM GOVERNMENTAL INSTITUTIONS



TRUSTED BY INDIA'S TOP INFRASTRUCTURE & REAL ESTATE COMPANIES







MARKETING OFFICE

Electrotherm (India) Limited,
301, Primate Complex,
Nr. Judges Bungalow Cross Road,
Bodakdev, Ahmedabad - 380015,
Gujarat (BHARAT)

WORKS

Electrotherm (India) Limited - Steel Division
Survey No.325, Nr. Toll Naka,
Village: Samakhiyali, Ta. Bhachau,
Dist. Kutch - 370150
Gujarat (BHARAT)

ET TMT

EPOXY COATED BARS

BUILD IT WITH THE POWER OF TWELVE

EPOXY-COATED TMT BARS OUTLAST BARE
COUNTERPARTS WITH 12X EXTENDED LIFESPAN



• ET Epoxy-Coated TMT Bars •



ELECTROTHERM®

Electrotherm (India) Ltd.

A trusted name for over four decades

Started operations in Gujarat, India, in 1983.

An ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 & ISO 50001:2018 certified company.

A well-diversified group with a strong presence in steel & pipe manufacturing, steel plant equipment, transformers, TMT bars, battery-operated electric vehicles, renewable energy, transmission line towers and education.

World leader in designing and manufacturing induction melting furnaces. Major presence in continuous casting machines and ladle refining furnaces.

Offers total solutions from conceptualisation to commissioning of steel plants. Supplied 6000+ equipments to steel plants across 71 countries in 40 years.



Western India's first largest fully integrated facility for manufacturing epoxy-coated, CRS, refined steel, superior quality steel and cut and bend TMT bars.

A state-of-the-art research & development centre in Ahmedabad.

NABL-approved physical and chemical laboratories.

BUILD IT WITH THE POWER OF TWELVE

ET Epoxy-Coated TMT Bars last twelve times longer than bare TMT bars

Structures built with epoxy-coated bars are stronger and last longer. A fusion-bonded epoxy Powder, when electrostatically charged and coated on pre-heated TMT bars (and cured), delivers high protection from corrosive elements. Fusion-bonded epoxy is an excellent insulator and acts as a barrier to the entry of chloride ions. This ensures a long life of the bar.

ET TMT, a unit of Electrotherm (India) Ltd., is a forerunner in the manufacture of high-quality Epoxy-Coated TMT Bars.

Manufactured in a fully integrated state-of-the-art automated plant, ET Epoxy-Coated TMT Bars follow strict quality norms every step of the Process. The manufacturing is well-supported by a research and development centre and in-house NABL approved physical and chemical testing labs. Product quality is approved by Organizations like RDSO, MES, NPCIL, DFCCIL,MMRDA, MMC, PGCIL, NHAI,NTPC, MRIDC, CIDCO, MSRDC etc.



“ Little wonder, that ET Epoxy-Coated TMT Bars help structures enjoy a twelve times longer lifespan! ”

ET TMT
BUILD IT RIGHT

Awarded the Ispat Agradoot Award in 1919 & 2022 in recognition of pioneering work in steel by using integrated iron ore-IF-LRF route to produce high-quality ET TMT Fe 500, Fe 500D, Fe 550, Fe 550D & Fe 600 Bars.

Ispat Agradoot Award in 1919 & 2022 in recognition of pioneering work in steel by using integrated BF + DRI → IF → LRF → CCM (EMS) → RM → ECP route to produce high-quality Fe 500D TMT Bars

INFRASTRUCTURE THAT BUILDS THE POWER OF TWELVE

A QUALITY FOCUS EVERY STEP OF THE WAY

ET Epoxy-Coated TMT bars walk down a path with stringent quality norms. Quality is controlled diligently, from ingredients and processes to testing, to ensure perfect and uniform results.

A fully automatic, integrated, state-of-the-art 5.0 LTPA ET TMT bar manufacturing facility in Kutch, Gujarat.

Equipped with a capacity for end-to-end manufacturing of TMT bars, the facility also has NABL-approved physical and chemical testing laboratories. The unit has a captive power plant to ensure uninterrupted power supply.



High-quality of ingredients

High-quality sponge iron BIS-certified billet steel is produced in-house. Using 100% iron ore to produce bars ensures an extremely low level of tramp elements.

Cutting-edge technology/processes

ET TMT bars are manufactured with fully automated processes to ensure consistent quality and precision. Sponge iron and Liquid metal undergo a long process of purification, strengthening and other enhancements with automated machines.

The ladle refining furnaces (LRF) with the unique & patented ELdFOS™ metallurgical process is used for dephosphorization and desulphurisation. This refines steel as per BIS.

Overall microstructure is tempered martensite at surface level & microstructure of weld deposits consists of Acicular Ferrite (AF) alongwith ferrite & pearlite formed at core portion. The fine grained oriented AF gives higher strength (YS, UTS) & higher elongation (more than 18% & UTS/YS Ratio >= 1.15).



Well-equipped manufacturing facility



Fully integrated sponge iron kilns.



Induction melting furnaces.



Ladle refining furnaces



Epoxy coating plant



6/11 continuous casting machines.



Continuous high speed rolling mill with Twin block module & Advanced bar handling system with variable AC drives



Three-stage thermo-mechanical treatment facility.



Cutting & bending Facility



Spectrometry facility



Blast furnace & sinter plant



Ductile iron pipe plant and utilities (CPP & gas plant)

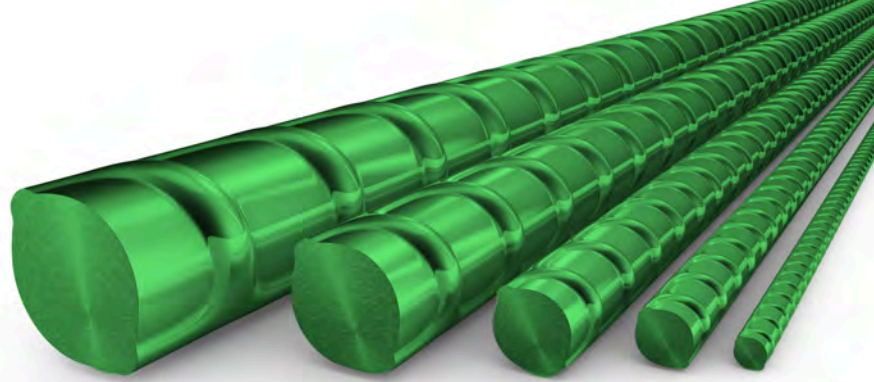


NABL-approved physical and chemical testing laboratories.

Latest THERMEX® quenching technology to produce ET TMT Rebar of the highest standard. During thermo mechanical treatment tempered martensitic structure formed at surface portion & microstructure of weld deposits consists of Acicular Ferrite (AF) along with ferrite & pearlite formed at core portion. The fine grained randomly oriented AF gives higher strength and ratio (YS, UTS).

Automation ensures the homogenous distribution of corrosion-resistant elements from core to surface and a uniform thickness for the epoxy coating.

ET TMT Fe 500, Fe 500D, Fe 550, Fe 550D & Fe 600 bars are manufactured with superior notch cutting machines to ensure consistent rib patterns and optimum depths. Machine-crafted ribs facilitate superior bonding with concrete.



Stringent testing and QA

Protocol-driven testing and QA is carried out by NABL-accredited in-house physical and chemical laboratories.

Superior product

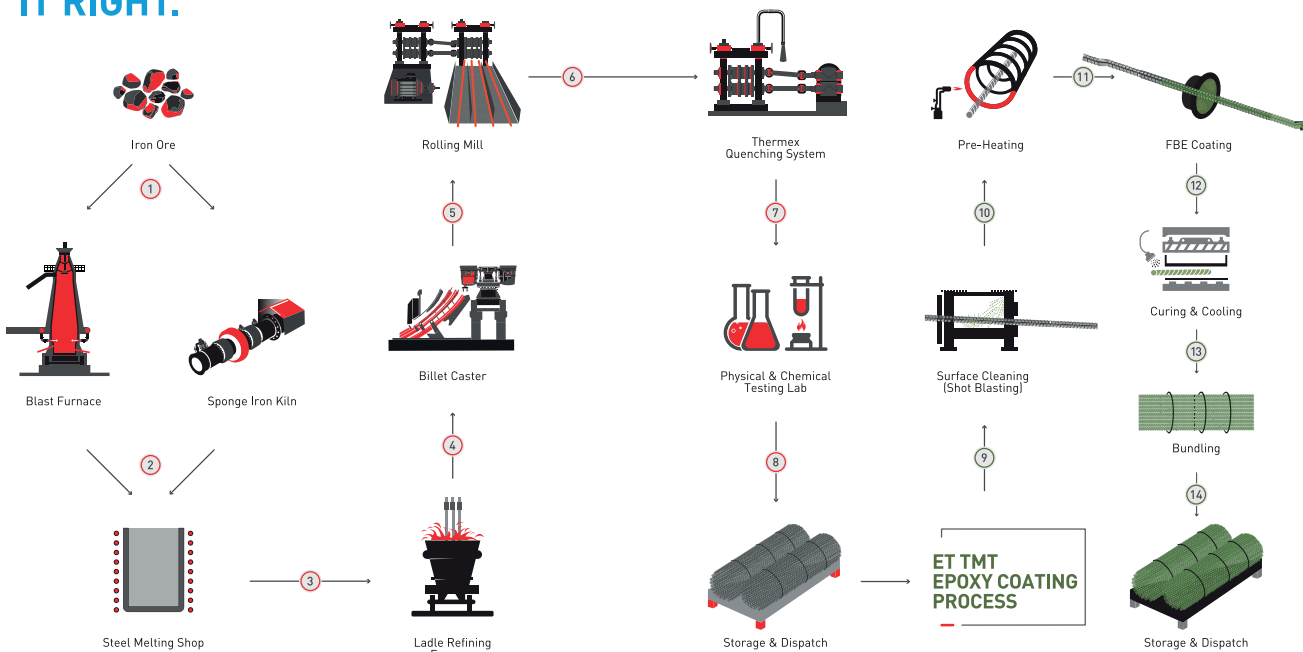
Stringent quality norms and elaborate testing ensure that ET Epoxy-Coated TMT bars have high strength, ductility, bendability, and twelve times longer life.

ET Epoxy-Coated TMT bars:

- ✓ Have a longer life due to superior pitting corrosion resistance.
- ✓ Possess high strength to resist applied forces.

BUILD
IT
RIGHT

THE METHOD OF BUILDING IT RIGHT.



ET EPOXY-COATED TMT BARS

Product details

Grades	Length	Diameter	Certification
All ET grades of CRS, Refined Steel and Superior Quality Steel Bars can be delivered with fusion-bonded epoxy coating.	Standard length: 12 meters Option of: 5 to 15 meters.	8 mm. to 40 mm.	BIS IS 13620: 1993

Available grades

Bar type	Available grades
ET Epoxy-Coated CRS TMT Bars	Fe 500, Fe 500 D, Fe 550, Fe 550 D, Fe 600
ET Epoxy-Coated Refined Steel TMT Bars	Fe 500 D, Fe 550, Fe 550 D, Fe 600
ET Epoxy-Coated Superior Quality Steel TMT Bars	Fe 500
All ET Epoxy-Coated TMT bar grades are available in pre-fabricated cut & bend format.	

EPOXY COATED TMT BAR SIGNIFICANCE

Corrosion in Structural Steel

The corrosion process involves the deterioration of substances usually a metal or its properties because of a reaction with its environment. Given sufficient time, Oxygen, water and chloride, any Iron mass will eventually convert entirely to rust and disintegrate.

The corrosion cycle of steel starts with rust expanding on the surface of bars causing cracks in the concrete. Gradually, the corrosion builds-up and results in spalling, ruining the concrete. Fusion Bonded Epoxy Coated TMT bar is preferred in infrastructure projects as it prevents bare TMT Bar from corrosion.

EFFECT OF CORROSION ON BARS & COLUMN



Key Features & Benefits



High corrosion resistance:

Epoxy coating increases corrosion resistance formidably. This enhances the bar's strength and longevity.



Cost-effective:

Structures with Epoxy-Coated Bars require low maintenance, thus proving to be cost-effective in the long run.



Long-life of structures:

Enhances structure life by twelve times. Very good performance, even in coastal/saline areas.



Wide range:

Epoxy-coating is available in CRS TMT bars, refined steel TMT bars, and superior quality steel TMT bars.



Environment-friendly:

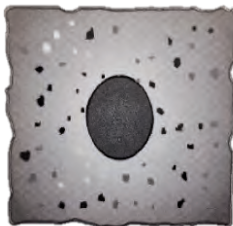
Epoxy-coating does not contain appreciable solvents and environmentally hazardous substances.



Uniform thickness:

Factory-based application ensures a uniform thickness of the coating.

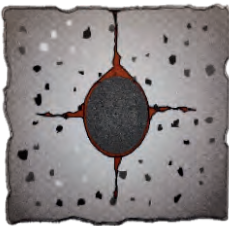
PROGRESS OF CORROSION-INDUCED DAMAGE IN CONCRETE



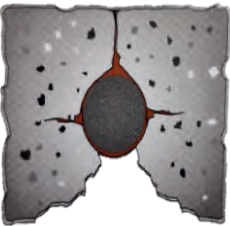
Water, air and salts come in contact with the iron bar



Corrosion starts on the surface of the iron bar



Corrosion develops further & the concrete surface cracks



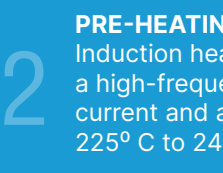
Corroded iron bar exposed

MANUFACTURING PROCESS HIGHLIGHTS

ET Epoxy-Coated TMT Bars follow a protocol-based manufacturing process, which ensures a high-quality coat



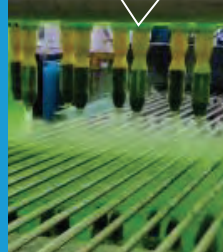
1 SURFACE PREPARATION
Bars are cleaned and readied to deliver industrial-grade clean and rough surface



2 PRE-HEATING
Induction heating is done with a high-frequency alternating current and a magnetic field at 225° C to 245° C.



3 EPOXY POWDER APPLICATION
Heated bars are passed through the coating booth with Electrically charged FBE powder cloud. Coating is done with the help of multiple no. of spray guns from top & bottom. The heated bars helps the epoxy powder molecules form cross-linked polymers, to fuse in the form of gel on to it, which gives a high-quality coat & becomes the integral part of TMT bar



4 CURING AND COOLING
Curing is done at 225° C, post which water sprays are used for cooling.

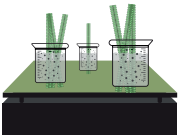


Standard

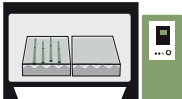
Parameter	ASTM 775/A775 M-16 (Reaffirmed 2019)	IS 13620: 1993 (Reaffirmed 2004)	ET TMT EPOXY COATED BARS
Coating Thickness	175-400 (microns)	100-300 (microns)	180-240 (microns)
Coating Holidays	9 holidays/3m (max.)	20 holidays/3m (max.)	100% Confirming
Coating Flexibility (Achieved)	Bend at 180° on specific mandrel at 45 second to complete	Bend at >120° on specific mandrel at 90 second to complete	Bend at >120° on specific mandrel at 60 second to complete
Resistance to Applied Voltage/CD Test	Yes	Yes	Yes
Abrasion Resistance	Max. 100 mg / 1000 cycle	Max. 100 mg / 1000 cycle	Max. 50 mg / 1000 cycle
Knoop Hardness Concrete Bonding Strength	Min. 85%	Min. 16 HK Min. 85%	Min. 20 HK Min. 90%

TESTING LABORATORY TESTING

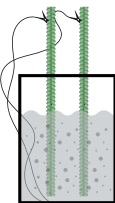
A series of critical tests are carried out as per standards to confirm the coat quality.



CHEMICAL RESISTANCE TEST
Bars are immersed in solutions per BIS 13620:1993 norms to test chemical resistance.



SALT SPRAY RESISTANCE
Exposure to salt sprays is done as per ASTM-775 recommendations to test resistance to wet and corrosive environments.



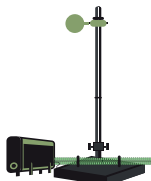
RESISTANCE TO AN APPLIED VOLTAGE
The effect of electrical and electrochemical stresses on the bond and integrity of the coating is assessed as per BIS 13620:1993.



ADHESION OF COATING
Bars are bent to 120o around a mandrel in 60 seconds to test the adhesion of the coating. This is done as per BIS 13620: 1993 norms.



ABRASION TEST
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
Mechanical damage resistance is tested with the falling weight test as per BIS 13620: 1993.

Laboratory and onsite corrosion testing

ET Epoxy-Coated TMT bars undergo several onsite testing experiments for performance assessments.

Onsite Test Results

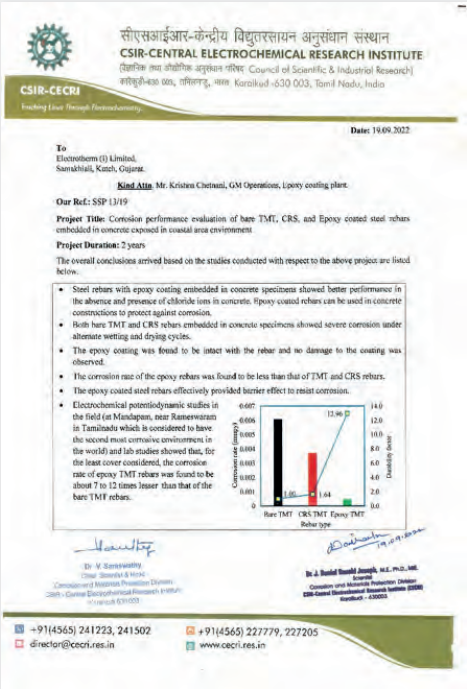
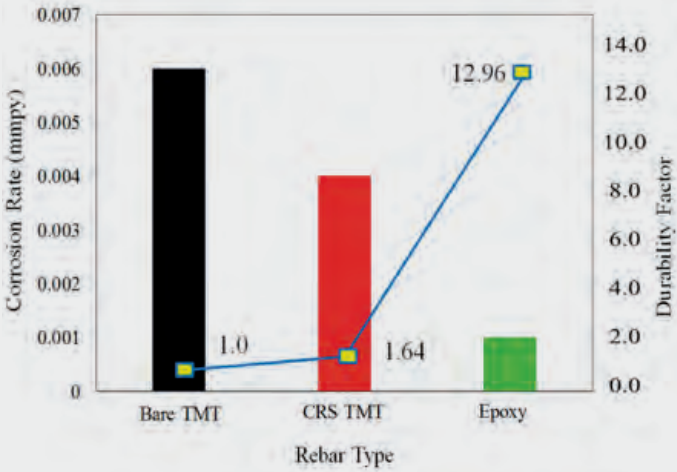
The coastal area in Mandapam, Rameshwaram is considered to have the world's second most corrosive environment. The comparative performance results of ET Epoxy-Coated Bars with CRS TMT Bars and Bare TMT Bars are presented here.



Mandapam, Rameshwaram Seashore

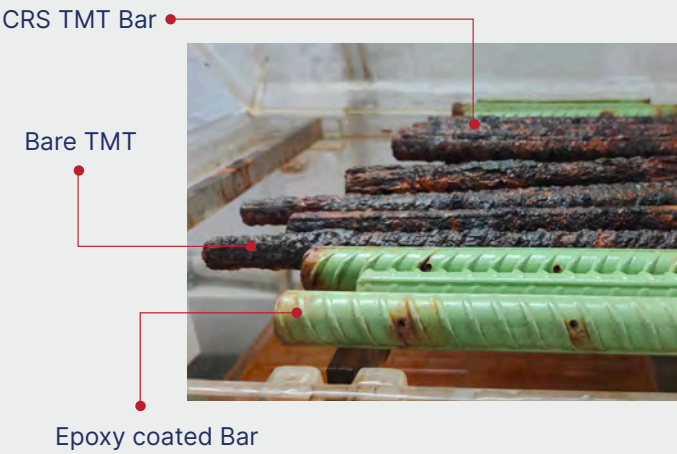
Lab results under simulated conditions

Results of corrosion testing in a laboratory under simulated coastal, salty, humid conditions.



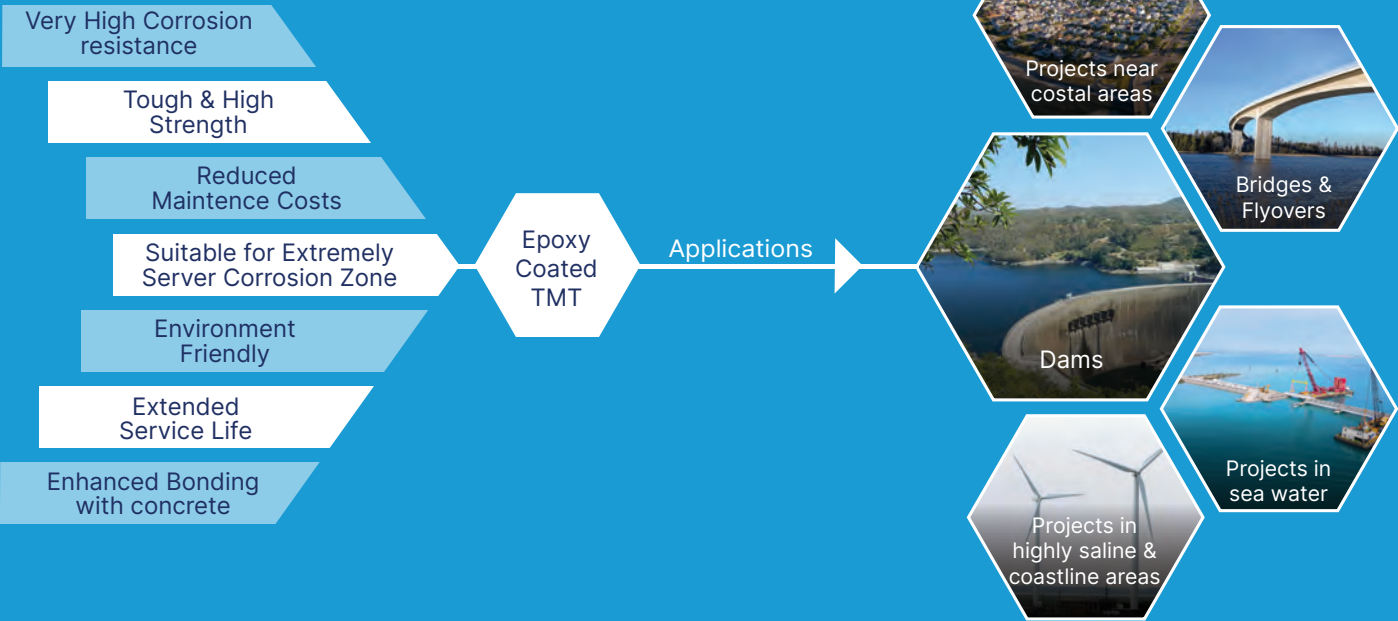
Epoxy Coated TMT Bar Performance Behavior

5% NaCl solution is sprayed for 48 days by creating a humid ambient as per ASTM 775 standard. 6 mm holes are drilled on epoxy coated bars. It is observed no cracking / fatigue / coating disbondment visible nearby the drilled holes in coated bars, while bare bar is completely corroded.



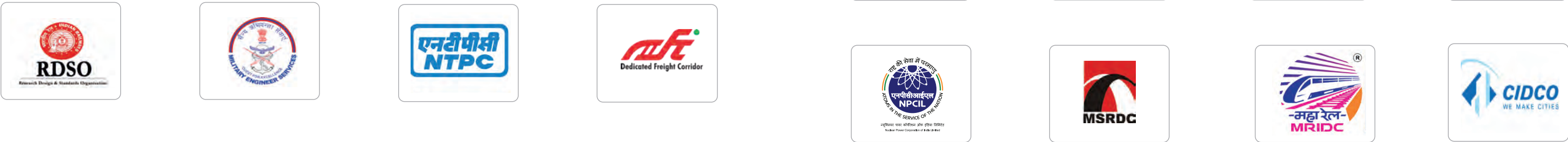
AREAS OF APPLICATION

Epoxy-Coated TMT Bars are used in heavy structures and cantilever structures in corrosive environments. They are particularly beneficial in concrete subjected to corrosive exposure such as deicing salts, marine environments, and they can be used in all infrastructure and real-estate structures to enhance the structure's life



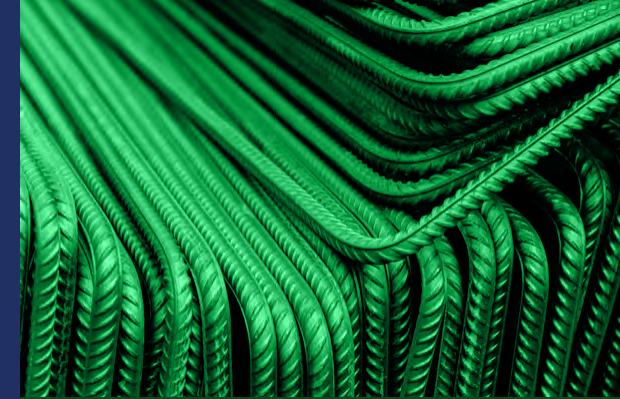
APPROVED BY GOVERNMENT AGENCIES

ET Epoxy-Coated TMT Bars are approved by major government organisations in India.





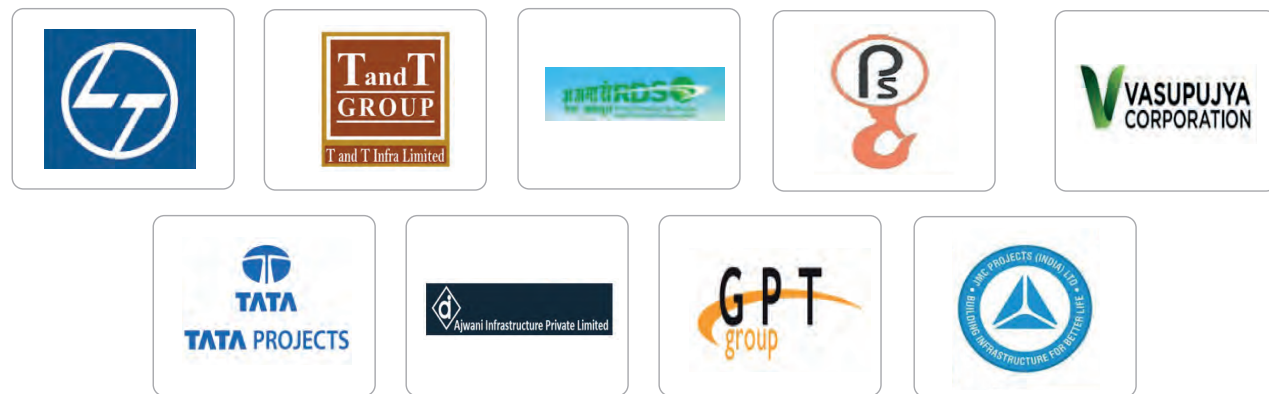
EPOXY COATED CUT & BEND



TRUSTED BY INDIA'S TOP INFRASTRUCTURE & REAL ESTATE COMPANIES

ET is a leading brand of Epoxy-Coated TMT Bars in Western India and has a pan-India market. Our bars stand strong and proud, enhancing the life of structures exponentially.

Clients: **Larson & Toubro, Tata Projects, T & T Infra, Vasupujya, Ajwani Infra Projects, Mumbai Municipal Corporation, National Highway Corp, JMC, Miland Road Techand Premier Infra Services Pvt. Ltd., among others. Our customers are always happy to vouch for us.**



Continuous evolution is the mantra of our success. In keeping with the ever-rising quality expectations of our customers, we endeavour to raise our standards through constant innovations to enhance process efficiency and product quality.

The ELdFOS™ metallurgic process is an ET TMT patented technology. Innovated by our engineering team, this technology is used to carry out dephosphorization in ladle and desulphurization in Ladle Refining Furnace of steel. This process can bring down Sulphur & Phosphorous to 0.02 % each in the steel. The Integrated Iron BF + DRI → IF → LRF →

CCM (EMS) → RM → ECP route to produce high-quality Fe TMT bars is yet another feather in our cap. This route ensures less contamination in terms of tramp elements such as Copper, Zinc, Tin, Chromium, Nickel, Titanium etc. Resulting in superior control over the chemical, mechanical & metallurgical properties of finished products wide range of steel grades as per varying applications.

Our pioneering work for this process won us the Ispat Agradoot Award in 2019 & 2022.



Product description

ET Cut & Bend Epoxy Bars prefabricated & ready to use with epoxy coated & bare TMT (All mentioned grades).

Advantages

- Automatic Italian Schnell machines ensure cutting and bending efficiency, accuracy and uniformity.
- Perfect joints with closed-loop reinforcement for lateral support. Provide shear reinforcement in beams.
- Available in a superior finish in all desired shapes and sizes, our refined and high-quality TMT bars are cut and bent using advanced programmed machines.
- Closed loop reinforcement for lateral support provides shear reinforcement in beams.
- The customer pays only for the theoretical blueprint weight. Saves on freight and on cumbersome handling and wastage in onsite cutting and bending.
- Best suited for critical design structures such as windmills, flyovers, bridges, etc.



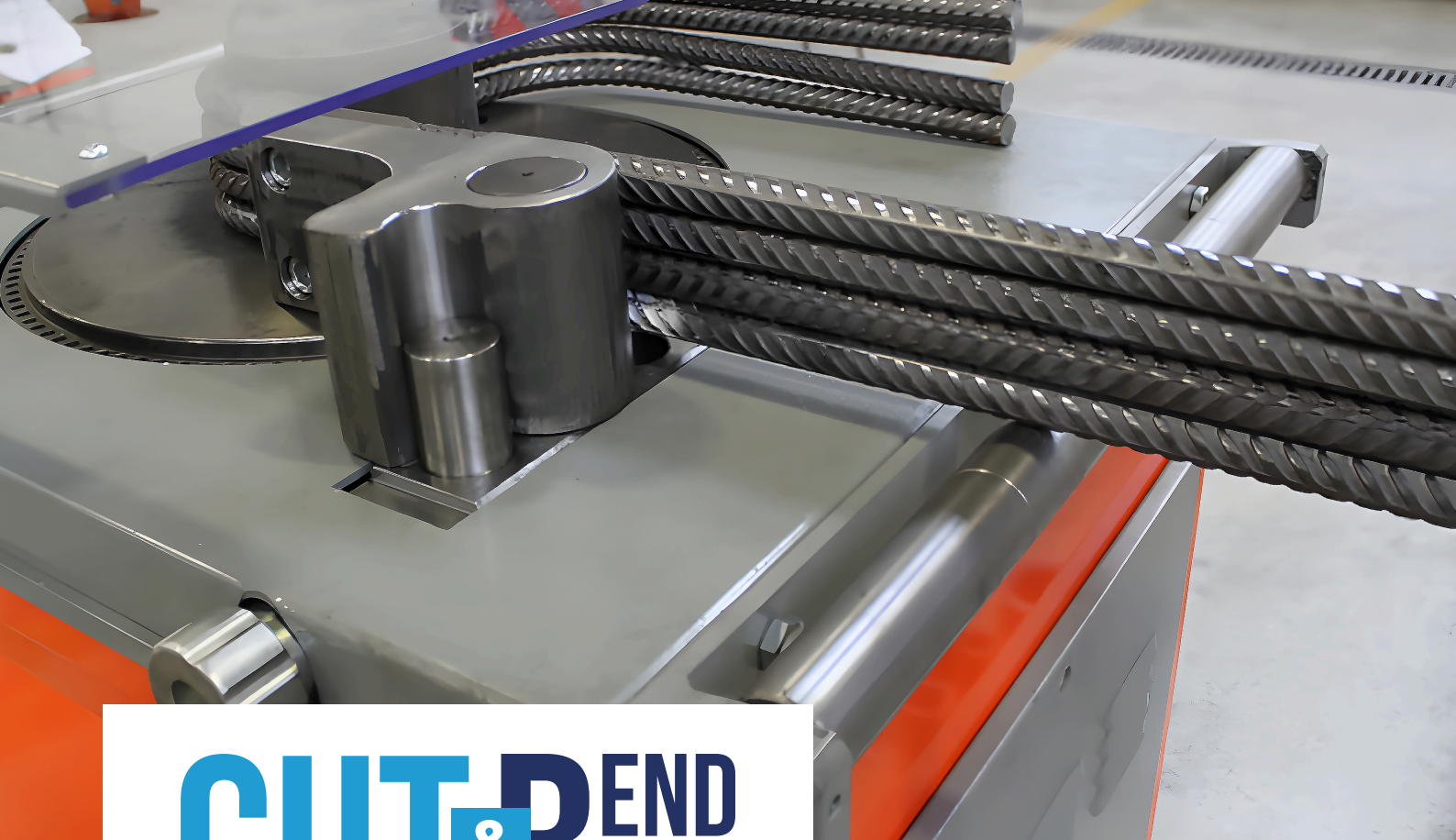


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E-mail: salestmt@electrotherm.com
Tel.: +91 82380 79223

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Dist. Kutch - 370150
Gujarat (BHARAT)



**CUT & BEND
ARS**



ET TMT

BUILD IT RIGHT

+91 82380 79223
salestmt@electrotherm.com

THE RIGHT CHOICE TO BUILD IT RIGHT



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 14 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.

CUT & BEND BARS



READY-TO-USE CUT & BEND BARS

ET TMT Cut & Bend bars is the right choice for long-lasting structures as it is ready-to-use and made in an automated plant assuring efficiency, accuracy and uniformity which leads to a quicker construction process.



ET TMT Cut and Bend technology is the result of our constant research to offer the best option to our customers; the Builders, Architects & Engineers as they work towards constructing superior and safer buildings.



Advantages:

✓ Perfect Joints (Rings)

Perfect Joints are closed loop of reinforcement ET TMT bars that is used to hold the main reinforcement bars together in a structure. In a column, the Perfect Joints provide the lateral support to the main bars against buckling. When used in beams, the Perfect Joints (stirrups) are termed as shear or transverse reinforcement since they withstand the shear force.

✓ Made from World's Finest Machines

Electrotherm (India) Ltd. has the best 100% automatic machines procured from Italian manufacturer Schnell to manufacture all kinds of designs from 8 mm to 50 mm.

✓ Cost-Effective

The cost of processing decreases considerably due to lesser inventories, reduced wastage and saving on labour cost.

✓ Reduce Dependency on Manpower

The technology inspires working that requires minimal manpower as well as ensures faster turnaround time. This increases overall efficiency and improves the quality of Cut & Bend bars required in construction process saving on both manpower and man-hours.

✓ Superior Finishing / Absolute Accuracy

The finishing quality of ET TMT Cut & Bend bars is unmatched in every manner. Ability to cut and bend the bars in all desired angles without much hassle gives our product an upper hand over other C&B bars that undergo the process manually or mechanically.

✓ Simple and Safe

Handling of 12 metre bars is eliminated and neatness is improved, thus decreasing the risk of accidents, making it safer for manpower at the site.

✓ Instant Usability

Another important benefit that can be drawn from ET TMT Cut & Bend bars is that it promotes instant usability. The C&B bars can be put to use instantly as it proves to be profiting on-ground solution for all your construction requirements.

✓ Eliminates the Storage / Stock Problems

Material is ordered and supplied as per the need and is made available to the construction site for assembling thereby eliminating the storage problems.



✓ No wastage: Material and Money/Time

A) Customer pays for the theoretical blueprint weight only and saves on waste, processing and freight.
B) Lead time is considerably shorter as the time required for delivery of material at construction site is lesser, thus the need of storing steel and blocking capital in inventory is reduced.

✓ Timely Delivery

ET TMT Cut & Bend bars are made in 100% automated plant of Electrotherm (India) Ltd. assuring greater efficiency in production and shortest turn around time.



CUT & BEND BARS



HOW WE WORK

CUT & BEND BARS

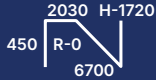


01

Customer Send Drawing as per Requirement (Wind-Mill Foundation, Tower, Bridge , Building Segment)

02 | BAR BENDING SCHEDULE

Electrotherm Send Bar Bending Schedule (BBS) as per Requirement (Wind-Mill Foundation, Tower, Bridge, Building Segment)

BarMark	Dia	Quantity No.	Shape	Weight (Kgs) (TW)	Weight (Kg/MT)
1	12	240		191.81	181.37
2	16	6		113.76	113.76
3	25	80		2827.44	2808.96
4	20	160		1845.58	1845.58
5	20	20		247.99	239.29



03

Cut and Bend Ready Material for Tagging, Stripping Photos as per Requirement (Wind-Mill Foundation, Tower, Bridge , Building Segment)



— EPOXY-COATED —
CUT & BEND
BAR



04

Cut and Bend Dispatch Material Photos as per Requirement (Wind-Mill Foundation, Tower, Bridge, Building Segment)

05

All type Segment work with Cut and Bend Material and plant storage Full Capacity.



06

Fully Automatic Italy Make Machinery in Electrotherm Cut and Bend and Fully Functional (Cutting, Bending, Auto Pcs Counting and Bending with Customer Specification Shape and Mandrel as per Standards IS 2502: 1963 & BS: 8666-2005)



ET TMT

BUILD IT RIGHT

OUR COMMITMENT

In the ever-evolving construction industry, our commitment lies in delivering exceptional value to our customers by offering solutions that accelerate project completion and minimize waste within limited space. One such solution is the off-site cutting and bending of rebars

CHALLENGES FACED BY INDUSTRY

- ✓ Ensures high accuracy in meeting specified tolerances, reducing rework on-site
- ✓ Optimizes the use of human resources for efficient progress on-site
- ✓ Reduces construction time, preventing delays and cost overruns
- ✓ Maximizes the use of limited space on congested sites
- ✓ Provides quick responses and on-time delivery
- ✓ Drastically reduces waste and theft on-site
- ✓ Addresses the shortage of skilled labour

By implementing off-site cutting and bending of rebars, we are revolutionizing the construction process, ensuring faster, more efficient, and cost-effective project completion.

CUT & BEND BARS





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