



**PODDAR**  
TMT BARS

हमारी पहेचान - मजबूत निर्माण



**S PODDAR INTERNATIONAL INDIA (PVT) LTD.**  
An ISO 9001:2015 Certified Company



Sanjay PODDAR (S PODDAR international group) does not need introduction across the globe in the field of steel trading , HOTELS, WAREHOUSES and now it has spreads its web towards the manufacturing sector by establishing the fully automatic with electronic and computer controlled steel manufacturing plant in the Kutch district of Gujarat, where long product TMT bar are being manufacture under the brand name of PODDAR TMT and aiming to provide the best quality material in the steel market, PODDAR TMT is name to serve with service and product and it believe in the idea of govt of India "make in India " and strive to strengthen the economy by being self-reliant in steel market and has reached all the corner of the state through its strong dealer network in every town of the state.

### AIM AND GOAL

In the years ahead our focus would be to sustain growth and we will do our utmost to further establish a profit-maximization philosophy through cost reduction and bold restructuring of uncompetitive and non-core sectors.

We also firmly intend to progress forward with our management strategy which primarily includes completing the ongoing expansion plans of enhancing our production facilities in the states of Gujarat and neighbouring states.

### HERBERT ROTHE TECHNOLOGY:

PODDAR TMT bar are manufacture through Herbert Rothe German technology which is patented in USA/Europe and japan

Strength of the bars are carefully controlled by optimizing the water pressure for their pearlitic core and tough surface of tempered martensite, thereby providing an optimum strength, ductility and toughness. TMT bars are widely used in general purpose concrete reinforcement structures, bridges and flyovers, dams, thermal and hydel power plants, industrial structures, high-rise buildings, underground platforms in metro railway and rapid transport system.

TMT Bars are thermo-mechanically-treated through leading world Turbo Quench based technology for high yield strength. The process involves rapid quenching of the hot bars through a series of water jets after they roll out of the last mill stand. The bars are cooled, allowing the core and surface temperatures to equalize. The bar core cools down slowly to turn into a ferrite-pearlite aggregate. S PODDAR international (India) Pvt. Ltd. unit has been authorized by Herbert Rothe to manufacture TMT Turbo Quenc.

#### Patents

- EP-Patent No. 0 144 029
- US-Patent No. 4,629,165
- Japan-Patent No. 1

### PRODUCT SOCIAL RESPONSIBILITIES

PODDAR TMT has been constantly fulfilling various social responsibilities to do its best towards the growth of the nation through the best possible means. The direct rolling technology is eco-frithCompany is focussed on continuous development and improvement through innovation, investment in new technologies, and building capabilities of its employees and partners. Synonymous with utmost quality and trust, PODDAR TMT bars are ISO 9001 certified and are produced by fully automatic, computerized machines.

PODDAR TMT bar has redefined the level of construction by manufacturing a comprehensive range of TMT fe 500 / 500D fe 500 crs /fe 500 CRS D Bars. These Thermo Mechanical Treatment Bars are designed by our talented engineers and are acknowledged for their earthquake resistant design & high tensile strength. Offered PODDAR TMT Bars are purified in accordance with international quality standards and contains Phosphorus & Sulphur, so that construction is not affected by any weather conditions.

Although Phosphorus & Sulphur are known to make rabar susceptible to breaking, as these are unwanted foreign matter. PODDAR TMT Bars follows the BIS detailing and reduce the foreign matter to 0.075%. Moreover, PODDAR TMT Bars are appreciated for their corrosion resistance, rugged design and are available in various sizes, according to the customers' requirement. Furthermore, PODDAR TMT Bars are preferred for their reliability, durability and can be obtained at pocket friendly prices.

### RAW MATERIAL

In order to ensure regular supply of essential raw material in the required quantities ,large scale building material plant ,operators make substantial investment in respect of material procurement , thus for the production of material like best quality TMT bar ,M.S billet is require and it is created directly via continuous casting or extrusion or indirectly via hot rolling .

Billets are further processed via profile rolling and drawing, centrifugal casting is also used to produce short circular tubes as billets , usually to achieve a precise metallurgical structure . further these M.S billets are processed to manufacture the PODDAR tmt (thermo mechanically treated bar) are high strength reinforcement bars having a tough outer core and a soft inner core The soft inner core giving the TMT bar great tensile strength and elongation point.

This design is unique to the TMT bars and gives superior ductility to the bars. Also, this unique manufacturing technique and the absence of Cold stress make this bar corrosion-resistant and boost its weld ability.



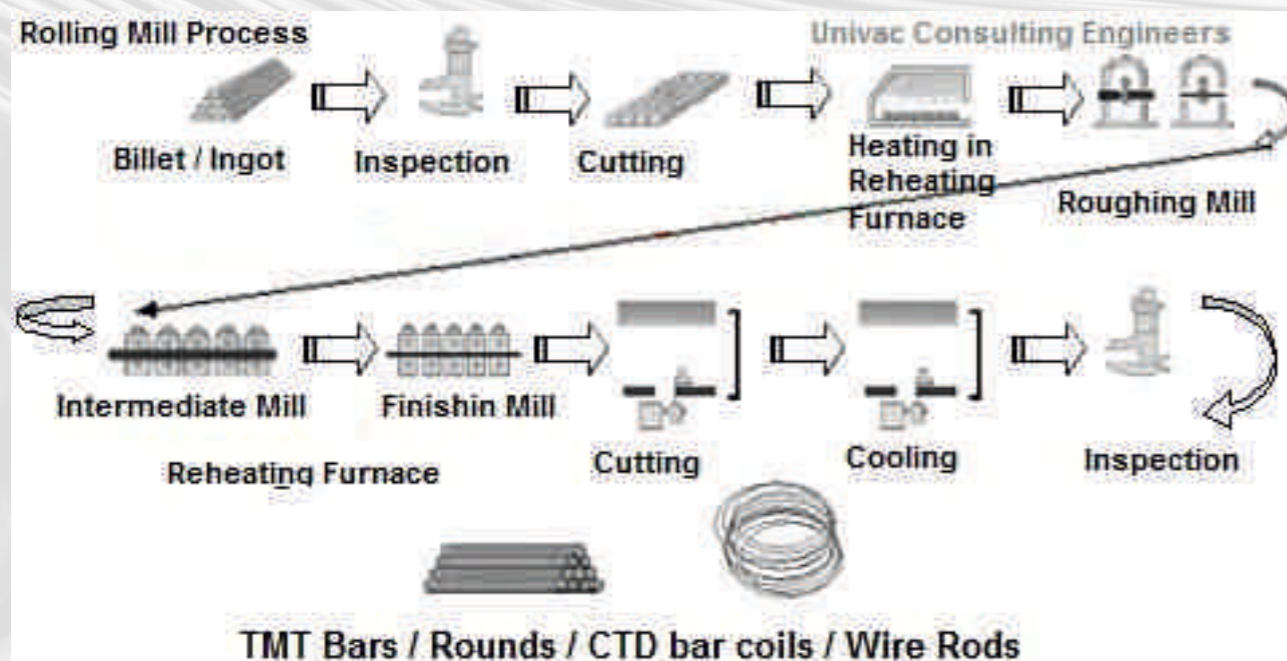
## MANUFACTURING PROCESS

High Yielding Strength Deformed Bars (HYSD bars) are manufactured using post heat treatment process; steel bars are either heat rolled or cold twisted for shaping. As result of such manufacturing process it leads to increased residual stress, bendability, and weld ability.

- During the cooling process of TMT Bars turns into ferrite-pearlite structure for which it is highly ductile.
- In HYSD Bars residual stress is high and tensile strength is low that causes deformation. In TMT Bars residual stress is low and tensile strength is high for which it do not undergo any deformation.
- TMT Bars can bend and re-bend as per construction requirement. In HYSD torsional stress occurs during bending that causes surface defects.
- TMT Bars consume up to 17% to 20% less amount of steel than HYSD Bars.
- Lighter in weight, Transportation cost is low.
- Due to low intake of carbon, sulphur & phosphorus TMT Bars are highly resistant to corrosion.
- TMT Bars are Earthquake Resistant.
- As per IS Standards Fe 500d Grade TMT Bar has the best combination of strength & ductility and that is Fe 500d Grade TMT Bar is most recommended for all type of construction purposes.



## TMT Bar's Manufacturer Process



### PRODUCT BENEFITS SUPERIOR STRENGTH

The different grades of PODDAR TMT BARS are stronger than the conventional



### CORROSION RESISTANT

PODDAR TMT Bars help pre corrosion and enhance the life of the structures



### IMPROVED ELONGATION

Greater strength with higher elongation is one of the unique



### INCREASED DUCTILITY

The increased elasticity gives the bars a fantastic bending ability during construction.



### HIGH LOAD RESISTANT

The high fatigue-resistant property of PODDAR TMT BARS helps in the dynamic loading on account of the high strength of the surface layer.



### SUPERIOR WELD-ABILITY

PODDAR TMT Bars, because they have low carbon equivalent content, can be used for butt / lap and other weld joints without reduction in strength at the weld joint



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### BENEFIT OF USING PODDAR TMT BARS

SIZE	SECTION WEIGHT GRMS /MTR	TOLLERENCE IN WEIGHT AS PER ISI	TOLLERENCE IN WEIGHT PODDAR TMT
8	395	+/- 7%	- 3%
10	617	+/- 7%	- 3%
12	888	+/- 7%	- 3%
16	1580	+/- 7%	- 3%
20	2470	+/- 7%	- 3%
25	3850	+/- 7%	- 3%
32	6310	+/- 7%	- 3%



### ADVANTAGES OF PODDAR CRS BAR

- High yield strength coupled with superior ductility and bendability
- Longer life due to superior corrosion resistant
- East to material handling and transportation
- No extra operations required during fabrication
- Easy to weld
- Can be sent and re-bent using very small mandrel



ELEMENTS	MIN %	MAX %
CARBON	0.15	0.18
MAGANES	0.45	0.60
SULPHUR	0.030	0.045
PHOSPHORUS	0.030	0.055
CHROMIUM	0.15	0.25
COPPER	0.30	0.35
SILICON	0.15	0.25

Yield / 0.2% Proof Strength (min)	500 N/mm2
Ultimate Tensile Strength	Minimum 8% above measured yield / proof strength, however not less than 545 N/mm
Elongation	12.0% min
Bend Test	Satisfies bend test around a mandrel (thro 180°)
Re Bend Test	Satisfies Rebend test around a mandrel of 5d for dia up to and including 10mm and 7d for over 10mm dia through 45o bend and 22.5° reverse bend.

### Fe 500 Grade

TMT Bars were introduced as an one step up technological marvel over conventional fe 415 grade product. The superior tensile strength in Fe 500 TMT bars resulted in approximately 17% lesser consumption in steel in construction.

#### MECHANICAL PROPERTIES

0.2% Proof Stress / YS (N/mm <sup>2</sup> ) Max.	Tensile Strength (N/mm <sup>2</sup> ) Min	Elongation %
500	545.0	12

#### CHEMICAL PROPERTIES

C (%)	S (%)	P (%)	S & P (%)
0.30	0.055	0.055	0.110



### Fe 500 D Grade

TMT Bars were introduced to further increase the technical excellence of TMT bars and propensity of consumption of steel in construction projects drastically got reduced due to much higher tensile strength and load bearing capabilities of this technologically superior grade of TMT bars.

#### MECHANICAL PROPERTIES

0.2% Proof Stress / YS (N/mm <sup>2</sup> ) Max.	Tensile Strength (N/mm <sup>2</sup> ) Min	Elongation %
500	565.0	16.0

#### CHEMICAL PROPERTIES

C (%)	S (%)	P (%)	S & P (%)
0.25	0.040	0.040	0.080



### PODDAR CRS TMT BAR

PODAR CRS TMT Bar is produced by adding alloying elements like Cr, Cu, Ni, Mo and P, either individually or in combination, to improve allied product properties. In the Electric Furnace, corrosion resistant elements like phosphorus, copper/chromium are added to the molten steel, while carbon and sulphur is reduced further through refining and DE slagging.

The micro alloyed molten steel are then casted into billets and rolled in a controlled quenching and tempering process to impart the desired corrosion resistant properties to the end product.



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