



**TMT BAR**

REINFORCING STRENGTH

**Product Guide & Brochure**



# Index

1. FROM THE DIRECTORS' DESK	3
2. WHO ARE WE?	3
3. PRODUCT	4
4. QUALITY	5
5. WHY RS TMT 500 D REBARS ?	7
6. MANUFACTURING PROCESS OF RS TMT 500D & 550D REBARS	10
7. CONTACT US	12





## FROM THE DIRECTORS' DESK

Gujarat, A \*\*\*\*vibrant state with immense Infrastructure development and Entrepreneurship qualities within. As per recent data from the steel Regulatory (website [pib.gov.in](http://pib.gov.in) press release) Approximately 59 private steel producers are engaged in producing cumulative 100 Million tons of flat and Long products in the state of Gujarat. With a successive annual increment by 17%.

### RS - Reinforcing Strength

#### WHO ARE WE?

To augment the capacity, Shri Raghuvir Steel Pvt. Ltd. coming up with the most advanced Steel Melting Shop (SMS) & Hot-Rolling Mill project in the heart of Saurashtra-Rajkot, Led & promoted by young & Enthusiastic entrepreneurs with an experience of almost two decades in the steel sector.



#### MISSION

Shri Raghuvir Steel Pvt Ltd is all set to raise the standard of TMT Bars to international Levels.

We take the responsibility in developing the world recognizing Infrastructure in the nation.

“Make in India, Make for India”



#### VISION

To become the most advanced & proficient TMT brand in India.



The Real Strong Steel  
- Sach me mazboot.

## PRODUCT

RS TMT- 500D & 550D is rolled with an advanced technique to attain the tight dimensional values as per the BIS standards 1786-2008 (considering the latest revision) and passed through the quenching system by GERMAN THERMEX TECHNOLOGY and self-tempered on the automatic cooling bed. we Manufacture, Fe 500D, 550D, CRS grades TMT bars.



1. Thermo Mechanical Treated (TMT) Bars  
Fe 415 & Fe 500 – 8mm to 32mm  
Fe 500D, Fe 550, Fe 550D, – 8mm to 32mm  
Fe 500S – 8mm to 25mm
2. Corrosion Resistant Steel (CRS) TMT Bars
3. Billet

# NOMINAL SIZE AND WEIGHT TABLE

SR.NO.	TMT BAR SIZE	NO. OF PCS (12 Mtr) IN BUNDLE	APPROX WEIGHT OF BUNDLE IN KG. ( $\pm 3\%$ )
1	8 MM	15	67 - 70
2	10 MM	10	69 - 72
3	12 MM	7	70 - 74
4	16 MM	4	71 - 75
5	20 MM	3	84 - 88
6	25 MM	2	87 - 91
7	32 MM	1	72 - 75

## QUALITY



The quality is at par with any brands in the state. We assure that the physical properties like Yield & Tensile strengths, minimum 15% elongation is within the range specified by BIS. The most important quality issue in TMT bars is widely known as the CV (Characteristic value) of bars. This particular test will prove the quality of the bar. RS TMT is one such premium quality bar to maintain CV as designated by BIS.

## A. CHEMICAL PROPERTIES TABLE...

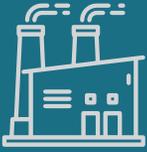
Property	Fe500		Fe500D		Fe550		Fe550D	
	IS1786:2008	RS TMT						
Carbon	0.300	0..270	0.250	0.250	0.3	0.27	0.25	0.25
Sulphur	0.055	0.050	0.040	0.040	0.055	0.05	0.04	0.04
Phosphorus	0.055	0.045	0.040	0.035	0.05	0.045	0.03	0.03
Sulphur + Phosphorus	0.105	0.095	0.075	0.075	0.1	0.09	0.075	0.075

## B. PHYSICAL PROPERTIES TABLE..

Property	Fe500		Fe500D		Fe550		Fe550D	
	IS1786:2008	RS TMT	IS1786:2008	RS TMT	IS1786:2008	RS TMT	IS1786:2008	RS TMT
0.2 percent proof stress/yield stress, Min, N/mm <sup>2</sup>	500	636	500	663	550	677	550	686
TS/YS ratio 1), N/mm <sup>2</sup>	≥ 1.08, but TS not less than 545.0 N/mm <sup>2</sup>	1.16	≥ 1.10, but TS not less than 565.0 N/mm <sup>2</sup>	1.17	≥ 1.06, but TS not less than 585 N/mm <sup>2</sup>	1.18	≥ 1.08, but TS not less than 600.0 N/mm <sup>2</sup>	1.17
Elongation, percent, min. on guage length $5.65 \sqrt{A}$ , where A is the cross-sectional area of the test piece	12	18.6	16	19.3	10	18.5	14.5	17.8
Total elongation at maximum force, percent, Min, on gauge length $4.65\sqrt{A}$ , where A is the cross-sectional area of the test piece	-	-	5	6.2	-	-	5	7.0

# WHY RS TMT 500 D REBARS ?

## Manufacturing Technique:



It is the most important factor that determines the quality of a TMT bar. Thermo-mechanical Treatment, better known as the TMT route is considered as the most advanced manufacturing process. This PLC controlled online process is executed in three consequent stages namely Quenching, Self-tempering and Atmospheric cooling. It ensures a unique combination of strength and ductility in the steel TMT bars.

## Ductile Strength:



Due to Thermex Technology, ductile strength of a TMT bar ensures superior structure. The strength and ductility measure is specified in IS:1786 standard. Well surpassed limitation of the specified standard represents better quality of the TMT bar.

## Rib Structure:



Performance of a concrete structure is relatively dependent on the rib style of the TMT bars and the steel-concrete bond for that particular structure. Two or more angular ribs, equally spread around the surface, are necessary to uphold the concrete bond and the tensile load of the structure at large.

## Weldability:



Low carbon content in TMT bars makes it easy for welding works. Excellent weldability in steel rebar requires no pre or post welding treatment and makes it easier for the construction workers.



### **Bendability:**

Advanced quenching process toughens the surface layer yet the core remains soft, this in turn makes the TMT bar easily bendable. The cutting and bending strength can be determined as per the Bar Bending Schedule (BBS) certification.



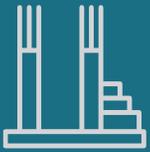
### **Dimension Tolerance:**

Nominal values specified in BIS code determine the grades of dimension tolerance. Closer values of sectional weight ensure higher meterage per unit weight in good quality TMT bars, compared to ordinary rebar.



### **Chemical Composition:**

Certified composition of sulphur, carbon and phosphorus and exclusion of unwanted materials such as cast iron, non-metallic and non-ferrous etc. are the determinants of a good quality TMT bar.



### **Seismic Resistance:**

Seismic resistant structure is dependent on its reinforcement strength. Buildings that are compliant to the recent seismic building code and standards are obviously more capable of withstanding the earthquake damages. TMT bars along with a good concrete bond, fortify the tensile strength of a structure. However grades of TMT bar differ at different seismic zones.

**Higher UTS/YS ratio and percentage determines the seismic property of a TMT bar. Uniform energy dissipation in every cycle is significant because of the higher ductile strength & superior seismic resistance in a good quality TMT Bar, which is crucial to reduce structural damage and human casualties.**

### **Fire Resistance:**



Good quality TMT bars have higher thermal stability and retain more than 80% of their ambient temperature yield strength at 300°C. Thus makes the concrete structure safer in fire hazards.

### **Cost Effectiveness:**

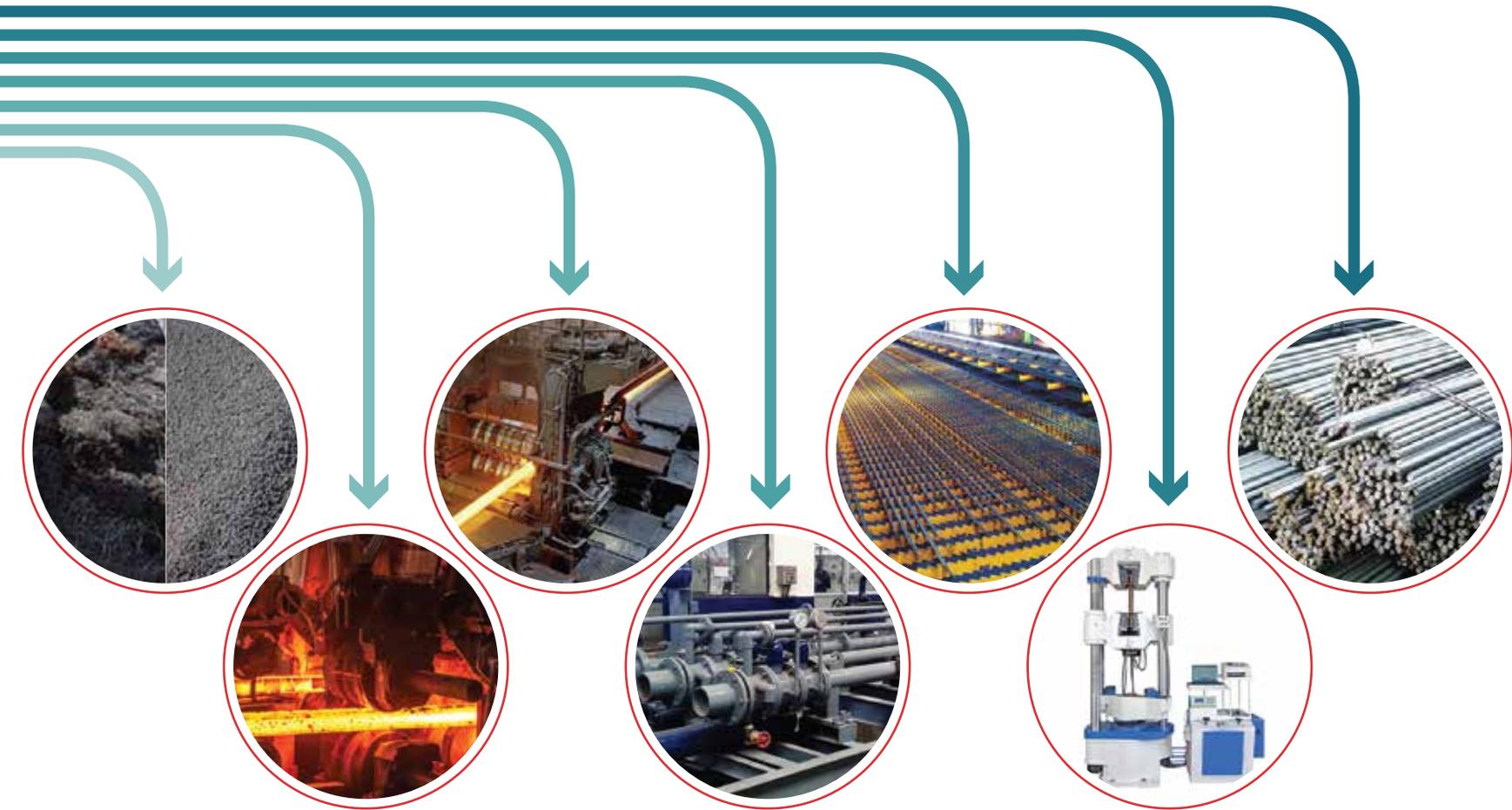


Batch to batch consistency and uniform sectional weight per unit minimizes steel wastage and makes it beneficial for the customers to buy TMT bars in small quantities as well.

**All the factors compiled together in one particular RS TMT 500D Rebar may be considered as the best choice for any sort of concrete construction.**

## MANUFACTURING PROCESS OF RS TMT 500D & 550D REBARS

The quality of RS TMT differs from other similar products the way it is manufactured. The different stages involved in the making of Steel and converted into real quality and real strength TMT bars are being adopted in the RSPL rolling mill.



**1**  
Stage

## The basic Raw material in making of steel

Superior Quality, Tested & Segregated Raw material is melted in Electric furnace followed by addition of alloys as required to attain the desired Quality steel.

**2**  
Stage

## Billet making

The Molten metal here in Continuous Casting machine (Billet Cater) takes the shape of Billets

**3**  
Stage

## Rolling

The Hot Billet is conveyed to rolling mill stands, to pass through minimum 18 passes. To form their desired size & strength, this process is called "HOT CHARGING". Hot charging is green manufacturing process as we omit coal consumption and develop environment friendly steel.

**4**  
Stage

## Quenching

The Hot TMT is here quenched & self tempered in German Technology based Thermex HEC. Equipment to attain the desire grades of TMT.

**5**  
Stage

## Self Tempering on Automatic cooling Bed

The self tempered Bars are then transferred to 66 Mtr Automatic cooling Bed in order to cool naturally and retain the tempered strength in the TMT Bar.

**6**  
Stage

## Quality Parameters

The Quality & Process are monitored on various stages and random samples of final product is taken from time to time to maintain the consistency of the premium quality " RS TMT Bar"

**7**  
Stage

## Bundling & Packing

The TMT bars are then bundled marked with a unique tag for identity of RS TMT bars. This final product is delivered to all the clients through our strong distribution network.



**TMT BAR**  
REINFORCING STRENGTH

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