



Virla Rajasthan

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FROM THE DIRECTOR'S DESK



RAMESH SAHU
CHAIRMAN

“Redefining the world of construction with a strong desire, as well as the ability to explore and utilize high-tech advancements, our vision is vast and vibrant. It is the Virla Group that has always possessed the vision, determination, and resources needed to create the finest and most different. As the visionary chairman of the Virla Group, Ramesh Kumar Sahu realized that Rajasthan needed domestic steel production. We are committed to providing high-tech metallic strength for constructions in Rajasthan, the land of kings, to meet the domestic demand for steel full of strength and splendour. Rajasthan, India's largest and oldest civilization. It offers a lot of potential for infrastructure development and entrepreneurship. According to recent Steel Regulatory data (website: pib.gov.in press release), roughly 30 million tons of steel is utilized in Rajasthan each year, with just 20% of Cumulative Long Products created in the state. As Rajasthanis, we see this as our responsibility to close the intra-state TMT production gap.”

DIRECTORS



MAHESH PAREEK
MANAGING DIRECTOR



INDERMAL SAHU
EXECUTIVE DIRECTOR



TAKHAT RAJ SAHU
MANAGING DIRECTOR



RANJEET SAHU
EXECUTIVE DIRECTOR



BHANWARLAL SAHU
EXECUTIVE DIRECTOR



NARESH SAHU
EXECUTIVE DIRECTOR

WHO ARE WE?

To increase capacity, M/s Virla Gold Ispat LLP has built the most sophisticated Steel Rolling Mill in the heart of Rajasthan. Led and pushed by experienced and enthusiastic technical and commercial entrepreneurs with nearly three decades of combined steel industry expertise, our team has established a one-of-a-kind factory to meet our mission of delivering both quality and quantity TMT bars at the same time. This Q&Q is our unique selling point.



PERFORMANCE IS OUR KEY ELEMENT



THERMEX®
H&K GERMAN TECHNOLOGY

RAJASTHAN'S ONLY STRAIGHT LINE SINGLE PASS 18 STAND — ROLLING MILL —

Virla Gold Ispat LLP, Rajasthan's only straight line single pass 18 stand Rolling Mill, give us the recognition for producing high-quality TMT.

RE-HEATING FURNACE - Our large and long Energy-Efficient Reheating furnace can heat 150 mm section by 6 meter long billets, allowing for 120 tones of Billet heating at a time.

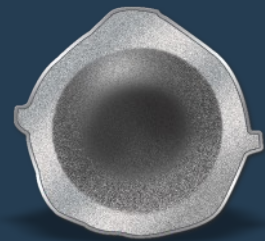
ROLLING STANDS - Our stands are outfitted with the most recent parts and bearings, as well as a robotic bearings and gears lubrication system, which provides a smooth production cycle while also providing us with uniform temperature, pressure, and speed, ensuring the correct extraction of hot bars.

DUCTILE STRENGTH - The term 'ductility' in TMT bars, one can understand it as the property by which they can bend up to their maximum tensile strength without breaking. Ductility lets the rod adapt to stress and deformation when put under tensile load within the construction unit.

As ductility is considered the nervous system of a TMT bar, keeping this in mind, VIRLA GOLD TMX has chosen none other than the best and the most advanced quenching system which is The H&K German Thermex Technology. As H&K is committed to deliver uniform ductility and quench on every TMT throughout.

OUR PRODUCT

We manufacture Fe500, Fe500D, Fe550, Fe550D, 600 & CRS grades TMT bars in 8mm,10mm,12mm,16mm, 20mm, 25mm, 32mm sizes and 12 Mtr as well as in customizable length.



VIRLA GOLD TMT BARS



ORDINARY BARS



THE TECHNOLOGICAL ADVANTAGE

RIB STRUCTURE

The performance of a concrete structure is largely determined by the rib style of the TMT bars and the steel-concrete bond used in that structure.

Two or more angular ribs, evenly distributed around the surface, are required to support the concrete bond and the overall tensile load of the structure.

At VIRLA GOLD TMX 550, along with our proficient engineers we have developed an extensive Grip Anatomy termed as **MAXX GRIP**. Maxx Grip ensures the maximum grip between the concrete and the steel.

COOLING BED

After the steel material has been rolled, the cooling bed is positioned in the rolling mill. It supports and allows the hot rolled bars from the mill's last stand to cool.

The cooling bed cools the bars while also cross-transferring them to the discharge end. The temperature of the full length of the bar is to be cooled simultaneously in a cooling bed. If not, it causes tensions in the bar.

We have installed the most Automatic Cooling bed with Automatic Layover System to ensure the uniform cooling of the Bars as well as The Rack Type Cooling Systems Preserves the Outer periphery & RIB Structure of the TMT Bars.

BENDING, STACKING AND DISPATCH SYSTEM

Because of their length, TMT bars are a bit more difficult to handle and load. It is critical to build a proper system for handling large productions in order to minimize mishandling and dispatch issues.

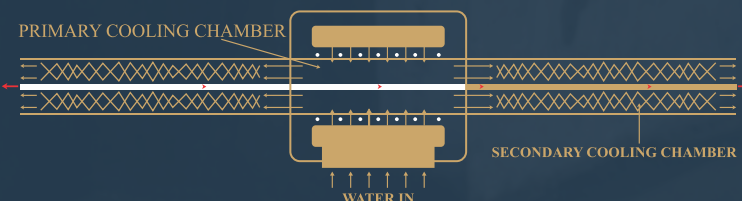


Bending, Stacking and Dispatch System

OUR TECHNOLOGY

VIRLA GOLD TMX 550 - 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 and Auto Bending and Stacking System.

HEAT TREATMENT PROCESS



MANUFACTURING TECHNIQUE

It is the most essential factor in determining TMT bar quality. The TMT method, or Thermo Mechanically Treated, is considered the most modern production procedure. This PLC-controlled online procedure is carried out in three stages: quenching, self tempering, and automatic cooling. It ensures that the steel TMT bars have a unique combination of strength and ductility.

QUENCHING

The hot rolled bar leaves the final mill stand and is rapidly quenched by a special water spray system. This converts the surface layer of the bar to a hardened structure called Martensite while the core remains austenitic.

SELF TEMPERING

The bar leaves the quenching box with the core temperature being higher than that at the surface. This allows the heat to flow to the surface from the core, thereby tempering the surface, resulting in a structure called Martensite. The core remains austenitic at this stage.

ATMOSPHERIC COOLING

Cooling takes place on the walking cooling bed, where the austenitic core is transferred to a ductile Ferrite-Pearlite core leaving a strong outer layer of tempered Martensite and a ductile core of Ferrite-Pearlite.

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. VIRLA GOLD 500D is one such premium quality bar to maintain CV as designated by BIS.

Our 5S INSPECTION SYSTEM

To deliver a uniform TMT bar throughout, any company should maintain a BIS and ISO advisable quality and inspection system, along with their necessary laboratory instruments. At Virla, we have developed a 3 Stage quality inspection system, which starts from

- 1. Raw Material Inspection :** Every consignment is thoroughly chemically and physically inspected before transferring into yards. We are equipped with advanced spectrometer to check the chemical properties of the billets.
- 2. Rolling Section:** To ensure the flawless and uninterrupted production cycle, we regularly monitor the running temperature of the billets. Our stands and rolls are also regularly QC on periodic cycle to avoid inferior quality production.
- 3. TMT Inspection:** As our primary Motto is to deliver quality TMT bars, our every batch is tested in between the process as well as final product to ensure uniform quality.



OUR STEEL QUALITY REMAINS UNMATCHED

OUR PRODUCT BENEFITS



Fire Resistance: Good quality TMT bars have higher thermal stability and retain more than 80% of their ambient temperature yield strength at 300A. 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.



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.



SPECIFICATION TABLE

CHEMICAL PROPERTIES TABLE

Constituent	Fe500	Fe500D	Fe550	Fe550D	600
Carbon	0.30	0.25	0.30	0.25	0.25
Sulphur	0.055	0.04	0.055	0.04	0.04
Phosphorus	0.055	0.04	0.050	0.04	0.04
Sulphur + Phosphorus	0.105	0.075	0.100	0.075	0.075

PHYSICAL PROPERTIES TABLE

Property	Fe500	Fe500D	Fe550	Fe550D	Fe600
0.2 percent proof stress/yield stress, Min, N/mm2	500	500	550	550	600
TS/YS ratio 1), N/mm2	≥1.08, but TS not less than 545.0 N/mm2	≥1.10, but TS not less than 565.0 N/mm2	≥1.06, but TS not less than 585 N/mm2	≥1.08, but TS not less than 600.0 N/mm2	≥1.10, but TS not less than 660 N/mm2
Elongation, percent, min. on gauge length $5.65 \sqrt{A}$, where A is the cross-sectional area of the test piece	12	16	10	14.5	10
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 (see 3.9)2)	-	5	-	5	-

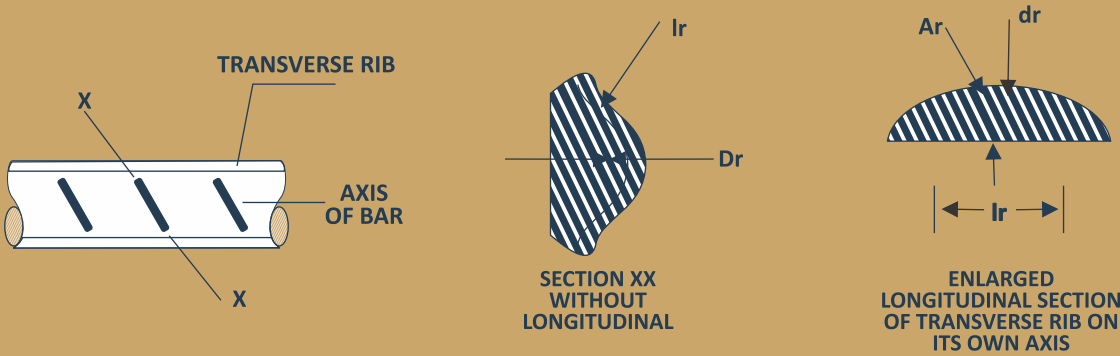
NOMINAL SIZE AND WEIGHT TABLE



SR.No.	TMT BAR SIZE	NO. OF BUNDALS	APPROX WEIGHT OF BUNDAL IN KG.
1	8 MM	18	85-86
2	10 MM	12	88-89
3	12MM	8	85-86
4	16 MM	5	94-95
5	20 MM	3	88-89
6	25 MM	2	92-93
7	32 MM	1	75-76

BEND REBEND CHART

THE DIAMETER OF MANDREL TO BE USED FOR BENDING TMT BARS AS PER IS 1786:2008							
SR.No.	Nominal Sizes (in mm)	Fe 415	Fe 415 D	Fe 500	Fe 500 D	Fe 550	Fe 550D
		Nominal Size of Mandrel to be used (in mm)					
1	Up to and including 10 mm	50	40	50	40	70	60
2	Over 10 mm	70	60	70	60	80	70
3	Up to and including 20 mm	60	40	80	60	100	80
4	Over 20 mm	80	60	100	80	120	100



OUR MISSION

Virla Gold Ispat LLP 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.

“Made in India, Made for India”

VISSION

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



THERMEX®



LET'S MAKE INDIA STRONGER