



Corporate Office: 16/S, Block-A, New Alipore, Kolkata-700 053  
Phone: 033 2398 2239 | Helpline: 93301 28922  
Mail: [contactus@mspsteel.com](mailto:contactus@mspsteel.com), Website: [www.mspsteel.com](http://www.mspsteel.com)

Follow us on     



Scan the QR code to  
visit the website

# THE PROMISE OF A PROTECTED FUTURE.

**MSP**  
TMT BARS





MSP TMT bars  
have forged  
a strong  
relation with  
more than  
**1,00,000**  
homeowners  
providing  
strength and  
protection to their  
"sapno ka ghar".



## INTRODUCTION

MSP Group manufactures the next generation TMT bars with an industry defined vision. These advanced TMT bars are constructed with Turbo Quench Technology, licensed under Herbert Rothe and conform to various international quality standards.

MSP TMT bars are manufactured with the finest raw material and undergo stringent quality checks. These superior TMT bars have not only been used by numerous individual home builders to build their own identity - a future-proof home, but also contributed to various industrial and infrastructural projects shaping the identity of the nation.



## NEW-AGE TECHNOLOGY AND INFRASTRUCTURE

Our state-of-the-art Integrated Steel plant in Raigarh, Chhattisgarh uses the Turbo Quench Technology-led process of steel manufacturing. Each MSP TMT bar produced through this process is rolled from in house manufactured billets and is controlled through online PLCs for extra strength and durability.

## THE THERMO MECHANICAL TREATMENT HAS THREE MAIN STAGES

### Quenching

The bars are passed through Turbo Quench cooling pipes and are rapidly water-quenched for a definite time, depending on the bar size and rolling speed. This hardens the surface, forming an outer layer of Crude Martensite and Austenite Core.



### Tempering

After leaving the quenching line, the core of the rebar remains hot compared to the outer surface. It is not allowed to cool outwards from the core, converting the Crude Martensite to Tempered Martensite.

### Atmospheric Cooling

The bars are then allowed to cool naturally on cooling beds, where the Austenite Core is transformed into ductile Ferrite-Pearlite. The resultant product exhibits high weldability and strength.



## 4X STRENGTH

MSP TMT bars provide excellent strength with high elongation and yield, to give your construction a longer life.



## 4X FLEXIBILITY

The tough outer surface and the ductile core of MSP TMT Bars make them flexible and extra bendable thereby aiding ease of construction, strength and added durability.



## 4X TOLERANCE

These bars with hardness of its outer surface and low carbon content have high elongation, which makes them superior in terms of tolerance and fatigue resistance.



## 4X EARTHQUAKE RESISTANCE

Withstanding earthquakes, resisting fire or rust, defying the effects of time, these TMT bars give all-round protection to your constructions, for a lifetime.

# STATISTICAL EDGE

## MECHANICAL PROPERTIES – IS 1786-2008

	ISI Standard Fe500D	MSP TMT Fe500D
Yield Strength, Min (N/mm square)	500	500
Ultimate Tensile Strength, Min (N/mm square)	565	630
Elongation, Min %	16	18-23

## CHEMICAL COMPOSITION – IS 1786-2008

Carbon, Max %	0.25	0.20
Sulphur, Max %	0.040	0.035
Phosphorous, Max %	0.040	0.035
S&P, Max %	0.075	0.070

## BENDING PROPERTIES

Up to and incl. 20 mm	3D	3D
Over 20 mm	4D	3D

## REBENDING PROPERTIES

Up to and incl. 10 mm	4D	4D
Over 10 mm	6D	5D

## WEIGHT TOLERANCE

Size of bar (mm <sup>2</sup> )	Cross-sectional Area (mm <sup>2</sup> )	IS 1786:2008	
		Lower	Standard
8	50.3	0.367	0.395
10	78.6	0.574	0.617
12	113.1	0.844	0.888
16	201.2	1.501	1.580
20	314.3	2.396	2.470
25	491.1	3.735	3.850
32	804.6	6.121	6.310





# QUALITY CONTROL

MSP uses high-tech computer aided test facilities in its NABL certified laboratory at its integrated steel plant in Raigarh, to carry out all the necessary tests thereby ensuring standardisation of all product batches as per BIS Grade specified quality parameters.

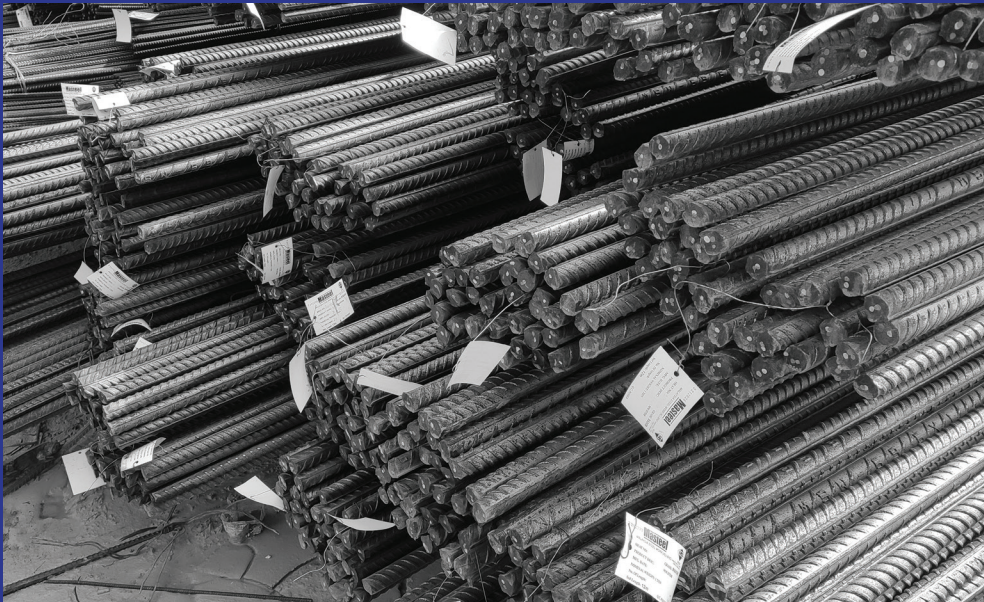
Stages of checking and quality control

Receipt and checking of raw materials: The materials received from our Steel Melting Shops are tested on multiple counts before they are forwarded to the rolling mills.

In-process quality checks: During rolling, the temperature of the bars are recorded stage-wise to ensure rolling at optimum and controlled temperatures.

## Specifications:

- Grades: Fe500D as per IS 1786:2008
- Diameters (mm): 8, 10, 12, 16, 20, 25, 28 and 32
- Available lengths: 12.2mts or 40ft
- Special lengths can also be supplied as per customers' specifications and demands.



## Features:



### Size and Shape

The varied range of size and shapes of the TMT bars, make them suitable for a diverse range of applications.



### Proof Stress

High levels of proof stress ensure minimal chances of deformation in TMT bars.



### Elongation

These TMT bars can be elongated to great lengths, while they retain their original strength.



### Ultimate Strength

These TMT bars are forged carefully and intricately, ensuring superior strength even when they are elongated, bent or shaped to meet specific structural needs.



### Bendability

These TMT bars possess superior bendability and can be bent to great angles to meet various structural needs.



### Weldability

The optimum mix of raw material makes sure that the TMT bar forged, can be welded with ease.

# HOW DOES IT SAVE MONEY?

MSP TMT bars provide cost-effective solutions to all your construction needs. Having higher strength value, possible due to low carbon levels even in bars of larger diameters, the total mass of steel required in any given construction lessens thereby ensuring savings of up to 18% on cost of construction.



Section	Example	Grade of Concrete	Grade of Steel	Qty. in Kgs	% Saving in weight over normal Fe415
Doubly Reinforced Beam (5m long)	300mm x 500mm	15	Normal Fe415	115	
		15	MSP TMT Fe500	99	14
		15	MSP TMT Fe500D	93	19.13
	M lin + 234.5 KNM				
	SF lim = 187.5 KN	20	Normal Fe415	104	
	d/1d = 0.1	20	MSP TMT Fe500	89	14.5
		20	MSP TMT Fe500D	83	20.2
		15	Normal Fe415	260	
Doubly Reinforced Beam (6m long)	300mm x 600mm	20	Normal Fe415	245	
	M lim + 507 KNM	20	MSP TMT Fe500	207	15.5
	SF lim = 337.5 KN	20	MSP TMT Fe500D	198	20
	d/1d = 0.075				



# PROPERTIES

## Bending Properties

MSP TMT Bars have excellent bending properties due to the unique ductility (elongation values) obtained by employing the German Turbo Quench Technology.

## Corrosion Resistance

Controlled water-cooling prevents the formation of coarse carbides, which have been cited as the main cause for the corrosive nature of common TMT bars.

## Cost Effective

Compared to ordinary grade TMT Bars, MSP TMT Bars ensure a cost saving of upto 18% on constructions.

## Better Metallurgical Properties

Using best-in-class raw materials, and an end-to-end controlled manufacturing process with optimal temperature control systems to ensure better metallurgical properties.

## Perfect Roundness

Tensionless rolling through the loop scanner system ensures reduction of the oval shape, which is generally present in traditional rolling mills. The automatic system ensures consistent, uniform properties and a precise round shape.

## Earthquake Resistance

MSP TMT bars have high fatigue resistance to dynamic/seismic loads due to its higher ductility. This makes MSP TMT bars most suitable for use in earthquake-prone areas.

## Fire Resistance

MSP TMT bars have high thermal stability. They are preferred choice for use in high temperature (400°C - 600°C) applications (chimneys etc.).

## Weldability

MSP TMT bars with carbon content less than 0.25% can be used for butt and other weld joints without reduction in strength at the joints.

## Higher Bonding Strength

MSP TMT bars with their uniform and precise rib pattern ensure better bonding strength with concrete. This gives higher strength to the structure and hence a longer life.

## Finer Grain Structure

Size reduction from billet to the bars is done gradually in multiple stages for better and consistent grain structure. Refined and finer grain structure gives better metallurgical properties to the bars for longer life.

## Strain Ageing

Due to the unique scientific manufacturing process and chemical composition, bars show no level of brittleness either during welding or cold deformation of welded joints.

## Precise Gauge Control

Gauge Control System ensures precise and accurate weight of the bars by controlling gauge of the bars automatically between stringent tolerances.



## QUALITY ASSURANCE

MSP TMT bars are manufactured through a comprehensive quality management system conforming to ISO 9001:2015 standards. Every product manufactured at the state-of-the-art Integrated Steel Plant at Raigarh, is environmentally safe and complies with 14001:2015 environment management norms. All MSP TMT bars come with the guarantee of quality certifications from the NABL certified lab at its facility.

## CERTIFICATIONS AND ACCREDITATIONS



## CLIENTELE

MSP TMT bars have been associated with more than 1 lac dream homes and countless government projects thereby contributing to building the nation of tomorrow. Some of our key clients include:

