

BUILT-IN STRENGTH. BUILT FOR LIFE.



MARKETING OFFICE:  
402, Ashirvad Paras, Near Prahladnagar, Auda Garden,  
Satellite, Ahmedabad, Gujarat 380015, India  
Tel: +91 7940040339



[www.diamondgroup.co.in](http://www.diamondgroup.co.in)



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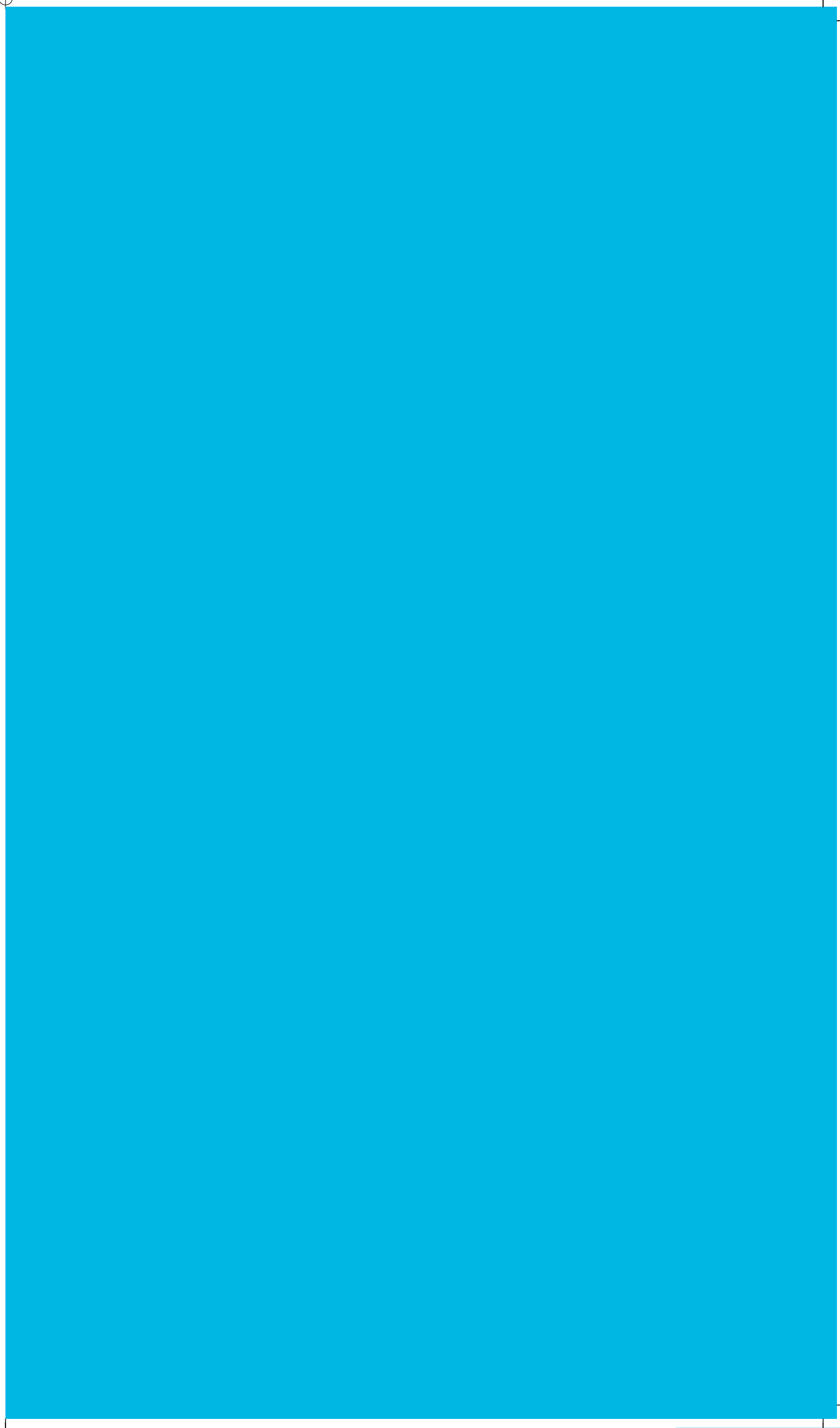


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Advanced computerized CNC Rib cutting machines are used resulting in the uniformity of ribs which in turn ensures uniform shape and size, due to which the bars have much better bonding with the surrounding concrete.

#### Bond Strength

Processed under fully modernized and latest 5G ACC steel rolls, replacing conventional steel rolls, ensures excellent dimensional tolerance and surface finishing.

#### Excellent Surface Finish

Manufactured with the world renowned TEMPCORE technology, resulting in least temperature loss.

#### Corrosion Resistance

Low carbon composition of Diamond TMT bars provide higher quality of but welding and lap welding using ordinary normal coated electrodes of Premium quality output is achieved with leading edge machinery, using Temproc (CRM-Belgium) technology of quenching and self-tempering process. Our streamlined design of the plant created through research helps us roll the bars with efficiency resulting in least temperature loss.

#### Accuracy in Making Grades

The Diamond TMT bars are made from MS billets, manufactured on fully automatic machinery at high speed to achieve a premium quality product. Excellent quality and finish are delivered with our manufacturing systems. Our state-of-the-art steel making facilities lead to stringent quality controls. 100% of our TMT bars are produced under the compliance to the BIS Specifications.

#### Superior Product Quality

Excellent bending and re-bending properties of our product enables it to bend around small diameter norms without cracking. The tough outer surface and the soft inner core result in the excellent bend-ability. Our bars can be bend and re-bend around much smaller mandrels as the capacity specified by IS: 1786.

#### Weld-ability

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#### Seismic Resistance Properties

Our TMT process ensures high ductility and malleability, enabling our TMT rods to withstand repeated reversed loading and inelastic strains and stand strong during earthquakes.

#### Bonding & Rebending

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Our technology standards are at par with the international steel industry. Diamond TMT's vision & philosophy is to achieve sustainable growth, provide outstanding quality, service and value to our customers. Our philosophy is to maintain the international standards by applying best business practices as well as contribute to the development of infrastructure that ensures public safety. We are a socially responsible company abiding by global standards 8 mm to 40 mm TMT bars with the annual capacity of 1,44,000 MT.

Delivering Trust & Strength  
Diamond Standards

## 2. Vision and Philosophy

## 6. Characteristics:

### Chemical Properties:

	DIAMOND TMT		DIAMOND TMT 500		DIAMOND TMT 500+ D		DIAMOND TMT 550		
	Fe-415		Fe-500		Fe-500 D		Fe-550		
Chemistry	Unit	IS 1786: 2008 (max)	Diamond TMT Bars (max)	IS 1786 2008 (max)	Diamond TMT Bars (max)	IS 1786: 2008 (max)	Diamond TMT Bars (max)	IS 1786: 2008 (max)	Diamond TMT Bars (max)
Carbon	%	0.300	0.280	0.300	0.250	0.250	0.250	0.300	0.250
Sulphur	%	0.060	0.055	0.055	0.045	0.040	0.035	0.055	0.040
Phosphorous	%	0.060	0.055	0.055	0.045	0.040	0.035	0.050	0.040
S&P	%	0.120	0.110	0.110	0.090	0.080	0.070	0.105	0.080

\*Lower sulphur and phosphorus properties compared to the IS 1786 standards reveal our product is more durable than the standards specified.

### Mechanical Properties:

	DIAMOND TMT		DIAMOND TMT 500		DIAMOND TMT 500+ D		DIAMOND TMT 550		
	Fe-415		Fe-500		Fe-500 D		Fe-550		
Mechanical Properties	Unit	IS 1786: 2008 (max)	Diamond TMT Bars (max)	IS 1786 2008 (max)	Diamond TMT Bars (max)	IS 1786 2008 (max)	Diamond TMT Bars (max)	IS 1786: 2008 (max)	Diamond TMT Bars (max)
Yield Stress	N/mm <sup>2</sup>	415 min	450 min	500 min	510 min	500 min	520 min	550 min	560 min
Tensile Strength	N/mm <sup>2</sup>	485	520	545	590	565	600	585	640
Elongation	%	14.5 min	18 min	12 min	16 min	16 min	18 min	10 min	14 min

\*High elongation and tensile strength are directly proportional with high yield stress.

### Negative Tolerance statistics:

Size (mm)	IS 1786 : 2008		DIAMOND TMT Bars	
	Mass Gram/Mtr	Tolerance Limit Gram / Mtr	Avg.wt. of Gram /Mtr	Savings
8	395	367 - 422	367 - 377	7%
10	617	574 - 660	574 - 584	7%
12	888	844 - 932	844 - 854	5%
16	1580	1501 - 1659	1501 - 1516	5%
20	2470	2396 - 2544	2396 - 2420	3%
25	3850	3735 - 3965	3735 - 3772	3%
28	4830	4686 - 4974	4686 - 4733	3%
32	6310	6121 - 6499	6121 - 6182	3%
36	7990	7751 - 8229	7751 - 7828	3%
40	9850	9555 - 10145	9555- 9650	3%

Product Range: various sizes and grades. Diamond TMT Bars are available in sizes ranging from 8mm to 40mm in grades fe-415 fe500, fe-500D & fe-550

\*Slight variations may occur

## 1983

### History of expertise

Diamond Group was established by Mr. Ajay Ramesh Chandra Jain in 1983 with a Steel Rolling Mill in Saurashtra, Gujarat. Over the next 30 years, the group has diversified into ship breaking, construction, import / export, and infrastructure development projects. Diamond group's latest venture into the steel industry, Diamond TMT & Procon Private Limited is a logical outcome of this vast experience and technical know-how of three decades in the steel industry.



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# 4.

production & Processes

## Diamond TMT Bars Production

Header

### 1. Testing Raw Materials

Billets are the raw material used to manufacture Diamond TMT bars. They are tested for the highest quality testing facilities equipped with Spectrometer as well as wet lab and is absolutely full-proof testing process.



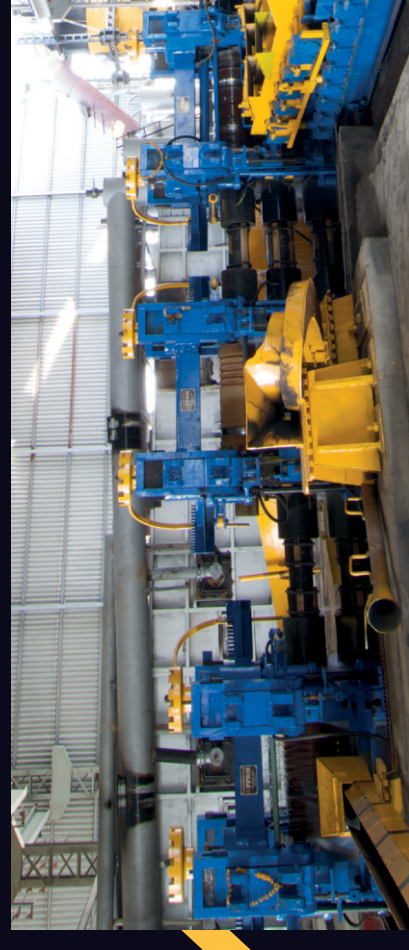
### 2. Reheating Furnace

Re-heating Furnace is equipped with pre-heating, heating and stocking zones. This system helps in smooth rolling at a uniform temperature thus delivering a quality product. Our plant is equipped to handle reheating of 25 metric tons per hour.



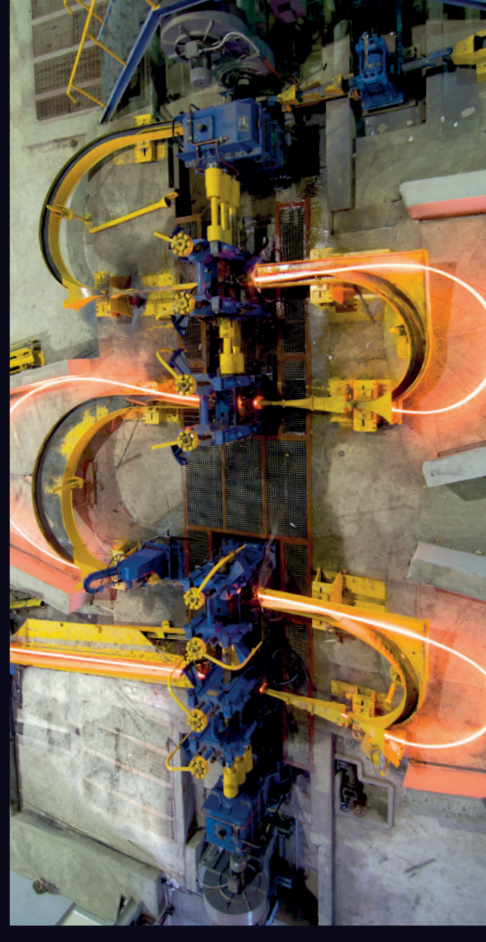
### 3. Roughing Mill

18" Roughing Mill having the capacity to rolling billets of 130 x 130mm. The roughing mill is driven with a high-powered AC motor.



### 4. Intermediate Mill

14" Intermediate Mill of four stands are Controlled by Scada controlling system to run DC motors thus obtains perfect rolling temperature and maintains aligned length and quality.



### 5. Finishing Mill

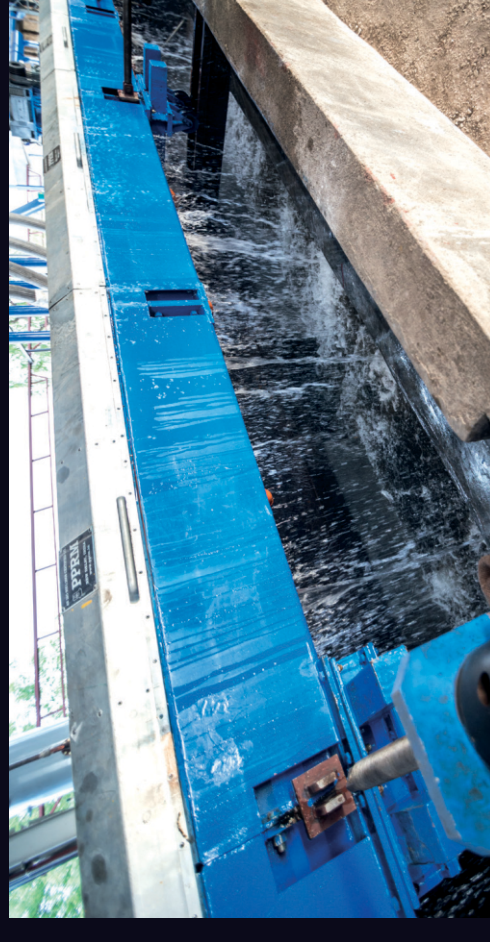
10" Finishing mill of Six-Continuous Stands are Operated by Scada controlled system to run high power individual dc motors for each stand, that helps to produce a proper shaped Tmt bar at speed of 20 meters per second.



### 6. Quenching and Self Tempering



Diamond TMT is produced by the world's most advanced technologies TEMPCORE (CRM) – Belgium (approved by the European Building Standards). Diamond TMT bars go thru an advanced, fully automatized, high-speed thermo mechanical 'Quenching and Tempering' process in 3 stages. **1. Quenching:** As the hot iron rods leave the mill, they are rapidly cooled down by an automatic quenching box with water spraying system. This quickly hardens the surface of the rod to a depth optimized for formation of martenstic rim while the core in the center remains hot and austenitic.



**2. Self Tempering:** The heat that remained in the core slowly flows to the surface causing outer layer to form a structure known as 'Tempered Martensite'. **3. Atmospheric Cooling:** In the last stage, the rods are transferred to an auto-mechanized cooling bed where the austenitic core is transformed into ductile ferrite-pearlite core, resulting in the final structure consisting of an optimum combination of tough outer layer (tempered Martensite) with a ductile (Ferrite Pearlite) core, a superior TMT bar with higher strength & flexibility.

## Process & Quality Control

# 7.

Header

### Automatic Dock System

The bars are docked through a **78 meters** long twin channel and atmospheric automatic cooling bed. This ensures no reheating and thus no changes in physical properties of each bar. The grade, finishing and quality remains consistent.



# 8.

### Automatic Bar Transfer

The bars are transferred and stored in a closed 50,000 sq feet shed for rust free dispatch.



# 9.

### Quality Control Lab

We have highly qualified Q.C inspectors and chemists who check and testify the superior grade, quality, chemical and physical properties of TMT bars in our labs equipped with Spectrometer 120 kN Universal Testing Machine of FIE, Hardness tester machine, Wet lab and other related equipments. Strict Quality checks on regular intervals insure every TMT bar to be flawless.



## What makes Diamond TMT superior:



Diamond TMT Bar's superior strength & mechanical properties come from using the world's latest TMT technology, a fully computerized (Scada controlling system) quenching & tempering process during hot rolling. Hence they score high on ductility. This unique combination of strength and ductility allows engineers and designers to reduce bulk without sacrificing structural safety and build strength. Secondly all the materials and processes are fully procured and managed in-house. This total command on the chain of production process & raw materials makes it possible to control the quality of our products, and also deliver high value for our customer's money.

# 5.

Quality benchmarks

## Why ask for Diamond TMT brand only?

<b>BETTER BOND STRENGTH</b> designed to bond well with concrete	<b>STRAIN AGEING</b> longer structural life	<b>EARTHQUAKE RESISTANCE</b> higher ductility enhanced safety & protection
<b>SUPERIOR DUCTILITY</b> uniform elongation & tensile strength	<b>FIRE RESISTANCE</b> upto 600°C	<b>CORROSION RESISTANCE</b> does not corrode with cement
<b>COST EFFECTIVE</b> saving upto 15%	<b>BENDABILITY</b> excellent flexibility and formability	<b>WELDABLE</b> easy welding & strong bonding

# 3.

Product benefits