PURE STEEL, STRONG STEEL

SUPERIOR STRENGTH, SUPERIOR DURABILITY

THERMEX®

QST GERMAN TECHNOLOGY

BS TMX
Fe 550

INTEGRATED STEEL PLANT

Who We Are ?

"BS TMX Bar 550", is the most awaiting and highly superior quality product of BS Sponge Private Limited. BS group was established in the year 2000 which is located in village Taraimal, Raigarh (C.G) on state highway of Raigarh Gharg hoda. The name of BS Sponge Group is renowned in Chhattisgarh as well as in neighboring states, which is a well-known name in the market about its quality products and one of the leading Sponge Iron, Billet and TMT Bars manufacturers in the country.

BS Sponge Group has introduced its new product in tmt segment as the key product **"BS TMX Bar 550"** which is made of state-of-the-art technology plant, which offers High strength, High flexibility, Earthquake resistance, Corrosion resistance, Fatigue resistance and Economical. We have advance manufacturing unit which is equipped with latest technology, machinery and tools. The advanced infrastructure facilities are accelerating the product rate and quality. **BS TMX Bar 550** is produced in our modern integrated plant with latest THERMEX QST German Technology. Sponge iron plant, iron ore processing unit, captive power plant, steel melting unit, billet casting unit, Fully Computerized and Automated High Speed Modern Rolling mill available in the same premises.

Quality is Our Identity

With 20 years of experience. The BS Sponge Group has built a legacy of dependability, innovation and business expertise in the high quality steel products manufacturing. Quality is our key strength. We have never compromised in our quality. We are committed to providing superior quality products at a affordable and competitive price to the customers so that we can win their satisfaction and confidence. Forging a stronger future and building trust that grows stronger with time. The modern advanced manufacturing
process ensure that our customers can enjoy all the benefits like as a premium products without feeling the pinch.

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Our Vision & Mission

Our Mission

To manufacture world class quality steel products for the consumers by adoptingmodern technology with energy efficient equipments. Best raw materials and continual improvement plan and become one of the leading tmt bar manufacturersin the globalized economy.

Our Mission

To become a quality steel producer in the country serve the customers at a very competitive price and to have a presence in the global market.

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Unique Features of BS TMX Bar Fe-550

1. **BS TMX Bar 550** is made from 100% billets according to IS:2830:2012, which is manufactured by chemical controlled process and highest quality pure raw materials in a BIS, ISO and ISI Certified Company.

2. **BS TMX Bar 550** are manufactured by latest THARMEX QST German Technology in Fully computerized PLC controlled High Speed modern rolling mill. This increases the flexibility of the bars, higher strength, greater load bearing capacity and low percentage of impurities.

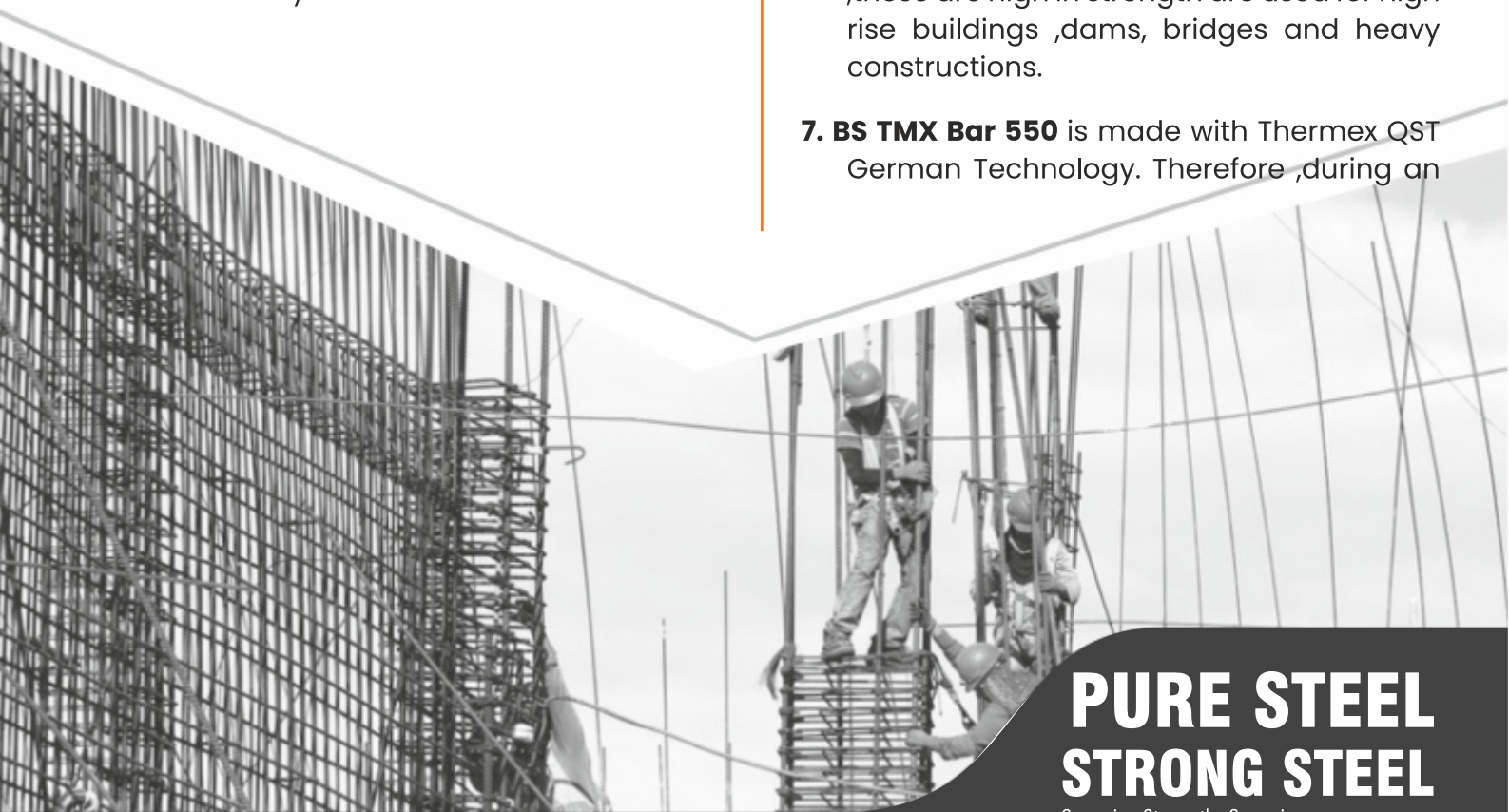
3. Special advance X rib design is made by V notch CNC computerized machine which ensure 100%uniform rib pattern on all TMT bar. 45%more bond strength and 4.5 time more life (minimum) due to unique X rib pattern this deformation make it easy for concrete to grip the steel which gives the structure more stability and durability.

4. There is in house Modern Quality lab with multiple UTM Machine and spectrometers, chemical and physical testing of raw materials, semi finished and finished materials done by international expert metallurgist engineer which results is 100% accuracy. Testing of each and every product on different parameters on continuous basis. Quality assurance right from the raw material stage to the finished product stage.

5. Thin wire is used instead of loha kda in tying its bundle . With this, the customer gets more bars from 0.8 kg to 1.00 kg. Which saves about 500/ton.

6. **BS TMX Bar 550** have low carbon content and advanced elongation properties that ensure excellent yield strength and ductility , This bar is stronger than Fe 500 ,these are high in strength are used for high rise buildings ,dams, bridges and heavy constructions.

7. **BS TMX Bar 550** is made with Thermex QST German Technology. Therefore ,during an



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8. The tensile strength of this bar is minimum 10%or more than, That is, it has more strength as well as more flexibility.

9. By keeping the amount of carbon and the carbon equivalent at a very low level, it has the ability to be better bending, joined with more flexibility.

10 Its weight is kept very balanced. Its weight is kept between the minimum standard level and normal weight. That is, tolerance is produced in close proximity to the standard. That means saving along with safety.

11. Due to more yield strength and more elongation of fe 550 bar than ordinary bar ,the re by saving on construction cost 15% to 20%of steel, that is saving Rs.700/ton.

12. It helps in preventing fire accidents because up to 600 degree centigrade, there is no damage to the strength.

13 It is produced by direct continuous casting and hot charging rolling (DCR) technology. Which saves energy. That is eco friendly and cost effective also.

14. Having a protective oxide layer on the surface of bar which protect from moisture and rust.

15. Cover storage of finished goods to avoid corrosion due to rain and moisture.

16. 66 meter cooling bed gives more strength and proper flexibility to the layer (ferrite-pearlite,and martensite) of bar at the temperature of the at mosphere.

17. BS TMX Bar 550 meets the international standards ASTM, DIN, BS (BS:4449-2-2010), along with IS:1786:2008.0

18. BS TMX Bar 550 has Y / S minimum is 560 N/mm2 or more.

19. The production capacity of mill is very high. Range of Tmt bar available in 8 mm to 32 mm.

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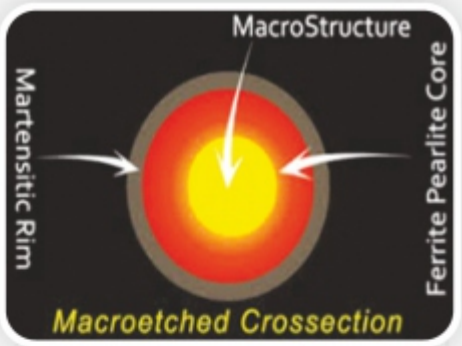
Features of Rolling Mill

Our state-of-the-art Rolling mill technology comprises a roughing mill of two 15 stands, total continues up to finishing stands also equipped with auto tuning channel and auto power press cutting and bending machine. all stands have individual DC motors to maintain total automationaa



Advantages of Thermex Qst German Technology

eXcellent Ductility	: Due to uniform grain.
eXcellent Weldability	: Due to low carbon equivalent.
eXcellent Bendability	: Due to controlled process.
eXcellent Bond Strength	: Due to uniform & precise ribs.
eXcellent Fatigue Resistance	: Due to high UTS/YS ratio.
eXcellent Earthquake Resistance	: Due to higher percentage of elongation.
eXcellent Resistance to Corrosion and Fire	: Due to highly controlled chemistry.

All these benefits stem from its unique Thermex manufacturing process. The Thermex technology developed by HSE Germany is used for over 80% of the TMT bars manufactured in India. The quenching and self-tempering technology results in a TMT steel bar which has a ductile core of ferrite and pearlite, and a hard surface of martensite. This two-toned combination gives the bars/sariyas higher yield strength along with greater elongation and ductility.

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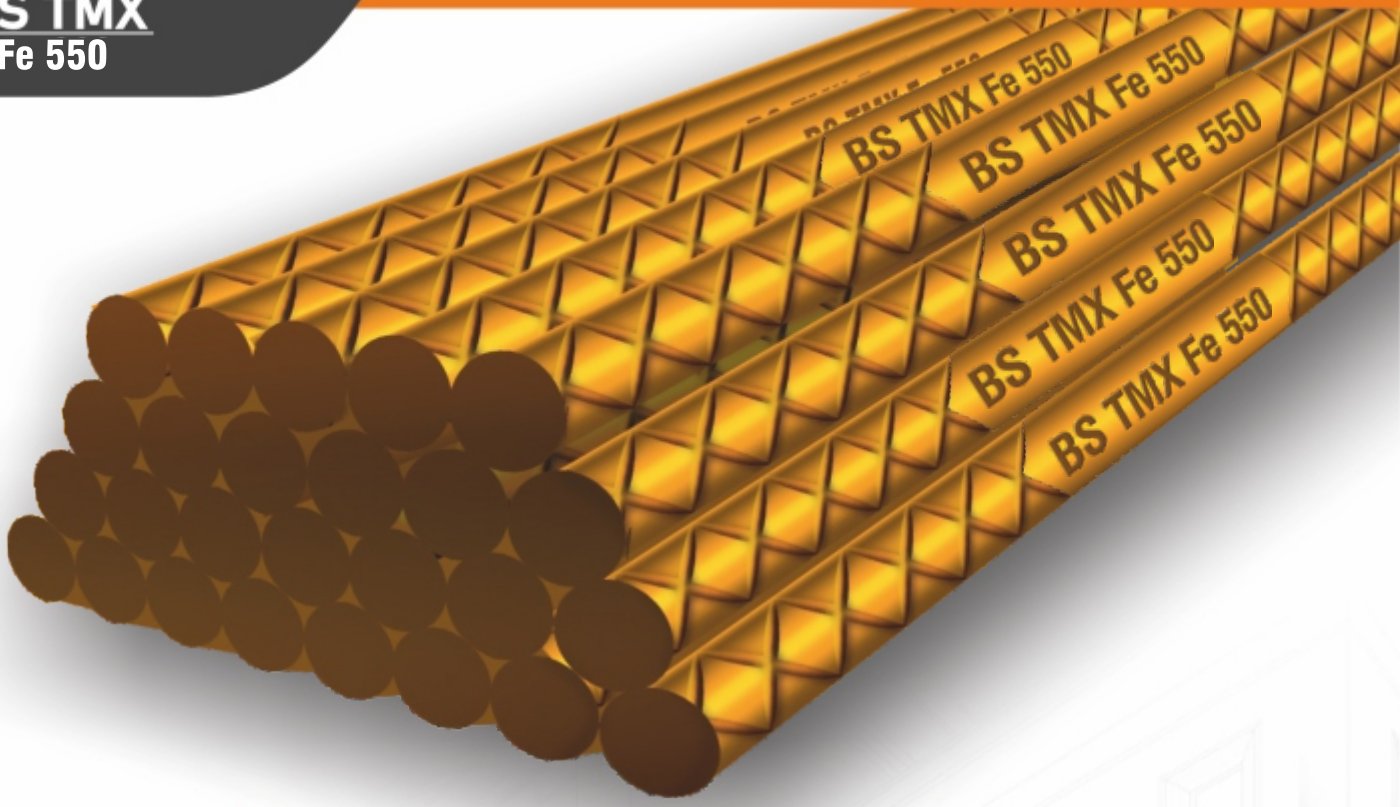

What Makes Thermex TMT Bars so cost-effective?

Well, it all Some down to the manufacturing process of the TMT bar. TMT or Thermo-Mechanically treated steel bars are manufactured using the patented German Thermex QST Technology. This is a quenching &self-tempering process which uses water sprays to cool the outer layer of the bars while the inner part of the bar is cooled at ambient temperature. This two-step cooling process gives Thermex TMT bars a hard outer layer and a more malleable inner core, making TMT bars strong but supple. All the above-mentioned cost benefits stem from its unique manufacturing process.

Fe 550 TMT bars of this grade differ by providing a yield of 560 $N/mm/^2$,and are activity used in construction projects based in marine, coastal ,or underground environments. 550 Can giving 20% cost saving as compared to Fe-500 due to its superior structural strength .Lesser number of 550 TMT bars as required to hold the structure as compared to Fe-500.

Using TMT bar of Fe 550 grade instead of others Fe 415, leads to up 20% saving on material thus leading to saving in the amount spent on buying TMT bars the difference in the strength between Fe 415 and 550 grades is 20%, Fe 600 being 20% stronger then Fe 415. if a structure requires 1 ton of steel which costs Rs. 50000.00 for Fe 415, then fe 600 grade would require ,0.8 ton of steels which would cost Rs.40000.00, leading to saving of Rs.10,000 /ton

20% less steel consumption, reduction in labour cost , reduction in transportation cost, less storage space.

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Why Is Cross Ribbed Tmt Bar Useful For Construction?

The bar has several features that ,when combined, offer maximum strength and durability to RCC structures .this bar with cross ribbed patterns wer introduced to provide better bonding with concrete .the deformed patterns provide a better grip with construction materials. This bar has particular pattern on its outer surface called ribs and lugs or cross ribbed pattern .the specific pattern comes in several variation and is decided according to how the tmt bar will be used and the properties that are most desired. This enhanced grip is crucial for keeping the structure intact during natural calamities such as earthquakes or floods when the stability of structures can reduce the loss of life and property.

Why Are Cross-ribbed TMT Bars Better ?

Ribbed or Deformed TMT bars, on the other hand, offer at least 40% more bond strength due to its unique pattern. These deformations make it easy for concrete to grip the steel, which gives the structure more stability and durability. More friction and better grip ensure that slippage of material doesn't occur. Especially useful in areas of RCC construction that requires high strength reinforcement bars such as multi-storied building or bridges etc Extremely useful in the regions that are seismic prone as the bonding between the steel and concrete ensures structural integrity.

Advantages of Cross Ribbed TMT Bars

- Unique Pattern shape
- Unique Pattern formation
- Better bonding between concrete and steel
- Uniform load distribution
- Cost Reduction in Construction

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Integrated Production Process

Coal

Iron ore

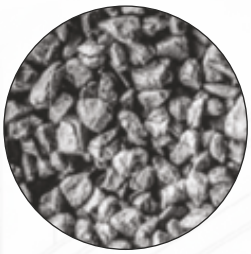
Dolomite

DRI

Power Plant

Pig Iron

Sponge Iron



Pellet

Furnace

CCM

Billet

Hot Charging

Cooling Bed

TMT Bar

Rolling Mill

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Saving in weight and cost of construction

Grade	Fe415	Fe500		BS TMX Bar Fe 550
Design strength	415N/ mm²	500N/ mm²		560N/ mm²
Quantity required	1000MT	0.854MT		0.800MT
% of saving in weight	- 14.6%			20.00%

Mechanical properties of TMT Bar as per IS:1786- 2008

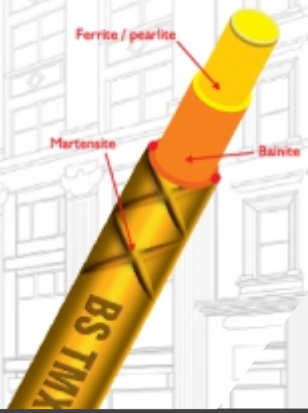
Grade	Fe500	Fe550		BS TMX Bar Fe 550
Yield Stress(n/sq.mm)	500	550		560
Tensile strength(n/sq.mm)	545	585		640
Elongation %	12%	10%		16%

Chemical properties of TMT Bar as per IS: 1786- 200

Grade	Fe500	Fe550		BS TMX Bar Fe 550
Carbon % (Max.)	0.30%	0.30%		0.25%
Sulpher % (Max.)	0.055%	0.055%		0.040%
Phosphorus % (Max.)	0.055%	0.055%		0.050%
Sulpher & Phosphorus (Max.)	0.105%	0.100%		0.090%
CE % (Max.)	0.42%	0.42%		0.42%

Standard Weight

Size in MM	ISI Standard (in kg/m)	Weight Tolerance limit (in kg/m)	BS TMX avg. Wt.	Variation in % ±	No. of TMT in Bundle	Weight of Bundle in kg	Variation in Bundle weight
08 MM	0.395	0.367-0.423	0.375	±7%	11	49.5	±1kg
10 MM	0.617	0.574-0.660	0.58	±7%	7	49.5	±1kg
12 MM	0.888	0.844-0.932	0.85	±5%	5	52	±1kg
16 MM	1.58	1.501-1.659	1.51	±5%	3	56	±1kg
20 MM	2.47	2.396-2.544	2.41	±3%	2	59	±1kg
25 MM	3.85	3.734-3.965	3.75	±3%	1	47	±1kg
28 MM	4.83	4.685-4.975	4.73	±3%	1	58	±1kg
32 MM	6.31	6.120-6.500	6.21	±3%	1	76	±1kg



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bars, then look no further! BS TMX Bar Fe 600 has been in the business of producing and selling steel products for over two decades, and we have a spotless industry reputation of delivering the highest-quality TMT steel bars to our customers. Do call, mail, or visit us to know more.

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भारत का सबसे विश्वसनीय ब्रांड

CM/L No. 5900065414

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