

JangamTM
STEEL
STEEL FOR GROWTH

WE ARE KNOWN FOR TEXTILE.
NOW WE'LL BE KNOWN FOR STEEL.



THE SANGAM GROUP

It all began in 1985 when the Sangam Group commenced its operations in Bhilwara. And within a span of two decades, we have grown into one of India's leading business conglomerates with the aim of achieving a billion dollar turnover by 2012. Today, the Sangam group is vertically and horizontally integrated to provide customers total textile solutions, which is why we have earned an impressive title: "A Complete Textile House".

Charting a steady growth path, the Sangam group has diversified in to Power, Energy, Infrastructure and recently, the steel industry. With a world-class steel plant in Wardha, Maharastra, we offer the finest quality steel that caters to a host of industries. Our relentless passion for innovation, technology and quality reflects in every ounce of steel we produce, just like our textiles.

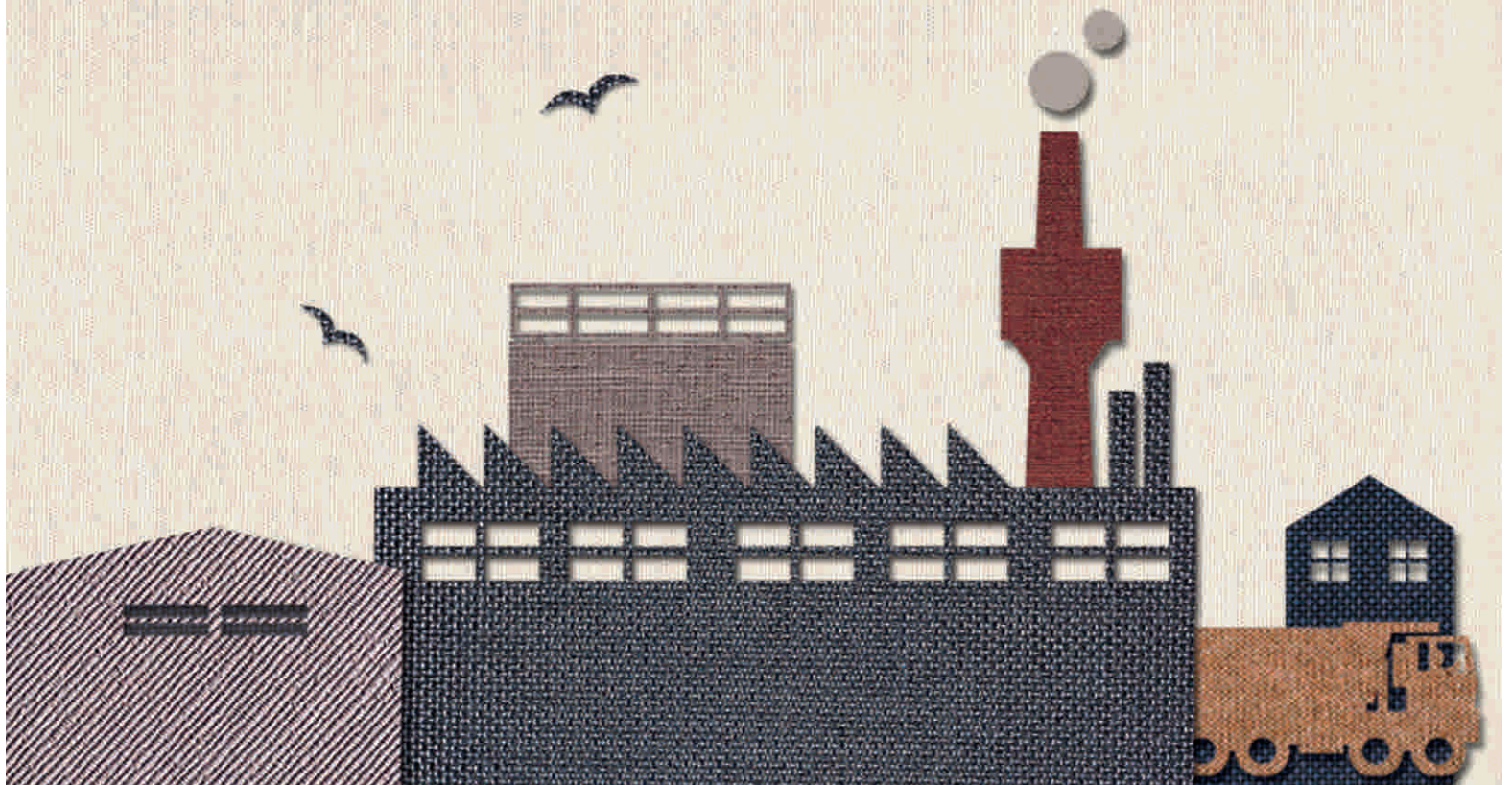
Our committed excellence in delivering products that define quality in textiles reflects in the steel we produce.



SANGAM STEEL. A CONTINUING THREAD OF DISTINCTION.

The Sangam Group has forayed into the steel industry with their latest venture, Sangam Steel. Steel's quality is determined by the way it is made. And our committed excellence in delivering quality products ensures that our Integrated Steel Plant (ISP) with Captive Power Plant (CPP) at Wardha, Maharastra, delivers the highest quality steel.

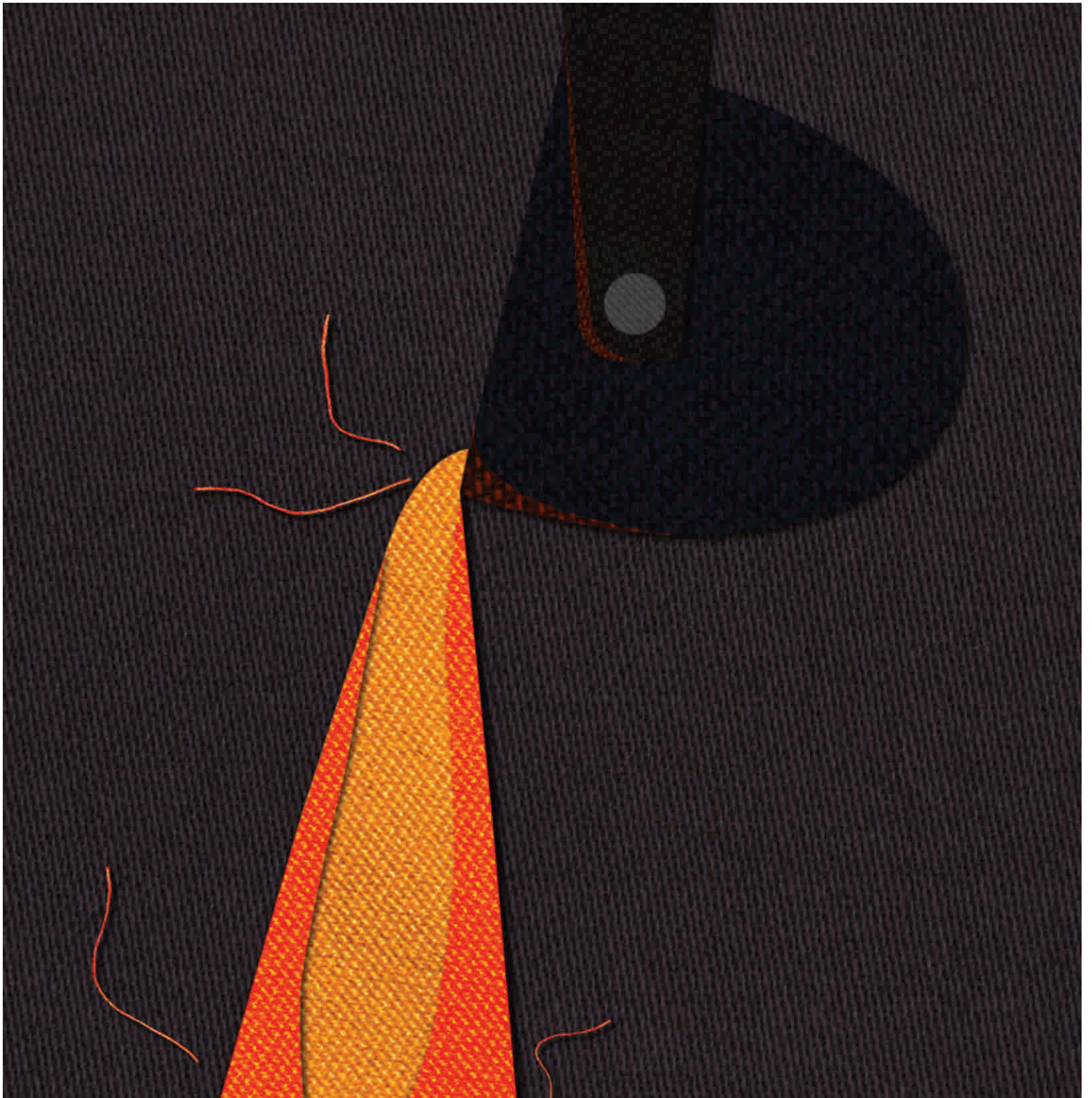
The plant is equipped with state-of-the-art machineries and the latest technology, making the plant one of the best in India. This feature rich plant also ensured the Sangam Group's speedy growth from a relatively new player in the market to the quality steel manufacturers with the capacity to produce 0.5 million ton steel per annum.





AN INTEGRATED STEEL PLANT TAILOR-MADE TO EXCEL.

Sangam Steel has always strived to produce the finest steel in the world. To accomplish this, we have adopted a unique process of making quality Direct Reduced Iron (DRI) – through SKIBIT process. This process uses only high-grade iron ore. Through a Static Klin Reduction process the iron ore is then transformed into high quality sponge iron. This is then briquetted into cylindrical shape for easy melting in steel shops. At Sangam Steel we also house a beneficiation plant with a capacity of 2000 tons per day that produces high quality iron ore. The usage of the most advanced technology helps in keeping emissions low and optimise every process in the plant to be energy efficient thus making our production eco-friendly.



SANGAM STEEL – BLENDING INNOVATION WITH QUALITY.

Induction Furnace & Billets: Sangam Steel pioneered the industry with Two Induction Furnaces of 40 Metric Tons each along with a common 4 strand caster which produces 0.30 million Tons per annum

of High Quality M. S. Billets. The same is rolled in the most advanced Rolling Mill to produce Sangam TMT Bars.

Sangam 500 TMX TMT – a benchmark in quality.

Sangam Steel is amongst the highest production plant of top quality re-enforcement bars (Sangam 500 TMX TMT), ranging from diameter 8mm to 40 mm from indigenous billets (ISI) made with Slit technology and Thermex process. The rolling capacity of this plant is the most efficient due to its 70 Tons per hour pusher type reheating furnace operated on producer gas. It is quenched by Thermex process (well-known quenching system from Germany) on a 90 meter wide cooling bed and automated bundling facilities all under single roof of 70m x 300m area.

Sangam TMT is made as confirms BIS as IS: 1786-2008, Fe-500 & Fe-500 D grades.



CHEMICAL COMPOSITION

Elements	BIS Specification	Sangam 500 TMX	BIS Specification	Sangam 500 TMX
	Fe-500	Fe-500	Fe-500-D	Fe-500-D
	% max	% max	% max	% max
Carbon	0.30	0.25	0.25	0.25
Sulphur	0.055	0.055	0.04	0.04
Phosphorus	0.055	0.055	0.04	0.04
Sulphur+Phosphorus	0.105	0.105	0.075	0.075

MECHANICAL PROPERTIES

Property	ISI FE-500 Standard	Sangam 500 TMX	ISI Fe-500 D Standard	Sangam TMX 500D*
0.2% proof Stress/	500	540	500	540
Yield Stress/ min,n.mm ²	500	540	500	540
Elongation % min	12	18	16	18
Tensile Strength	545	600	565	600

*As obtained in 90% of the heat.


PRODUCT SPECIFICATION

Trade Mark

Grades
Diameter
Standard Length

Sangam TMT

Fe-500 & Fe – 500 D
8 - 40 MM
12 Meter

Certification: •  Process licensed from HSE GMBH, Germany
• ISO: 9001:2008 & ISO: 9001:14001 from JNS-ANZ Australia

SANGAM 500 TMX TMT BARS. STEEL AT ITS BEST.

Earthquake Resistance

Sangam 500 TMX bars have a much higher elongation value than the specifications set by the Bureau of India Standards (BIS) and hence are suitable for use even in the seismic zones 3, 4 & 5.

Fire Resistance

Make constructions safer with Sangam 500 TMX Bars. Their high thermal stability makes them capable to encounter even the higher temperatures of 400⁰- 600⁰ Celsius.



Corrosion Resistance

The formation of coarse carbides is the main cause of the corrosive nature of common bars.

Sangam's technology of controlled water-cooling prevents the formation of coarse carbides on the bars and gives it longer life.

Weld ability & bend properties

During construction, the bars have to be bent and welded into a mesh, which makes it necessary for the bars to be highly ductile. Sangams 500 TMX's excellent bend properties allow just that without losing its strength. This makes the bars really useful when it comes to butt and other weld joints.

Cost Saving

Use of Sangam 500 TMX Bars results in savings of 10 to 18% compared to CTD bars. This is due to the fact that these bars have higher tensile strength and better elongation value than CTD bars.

Higher Strength

Sangam 500 TMX Bars have high strength and are available in all the grades and thus can easily cut the overall costs by optimising consumption.

Better Metallurgical Properties

The metallurgical properties in Sangam 500 TMX bars are controlled at every stage right from selection of iron ore to process Direct Reduced Iron to billet production to re-rolling facilities.



Perfect Roundness

Sangam 500 TMX Bars are known for its perfect roundness. Unlike common bars, Sangam bars are made by tensionless rolling through the loop scanner system during the rolling process. They also use carbide rolls that ensures the perfect roundness of bars uniformly with constant speed of 14 m/s of rolling and ensures reduction of oval shapes that are found in bars made in traditional rolling mills.

Precise Gauge Control

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

Fine Grain Structure

Size reduction from billet to the bars is done gradually in multiple stages (in one single 90° straight line) for better and consistent grain structure. Refined and finer grain structure gives better metallurgical properties to the bars and gives a longer life.

Higher Bonding Strength

Sangam 500 TMX bars with their uniform and precise rib pattern offers better bonding strength.

Formability

Due to very high elongation values and consistent properties throughout the length.

Strain Ageing

Due to unique scientific manufacturing process and chemical composition, Sangam 500 TMX TMT bars show no tendency of brittleness either during welding or in cold conditions.

Bending, Cutting, Packing

Sangam 500 TMX is available in the length of 12m., packed and bended with automatic bending and packing machines and delivers intact sealed bundles with steel strips. Subsequently, these bundles are stored in finish goods yard according to their grades, size, and lot no. for easy dispatches.



SANGAM STEEL. LEADING WITH QUALITY.

With innovation at the core, Sangam Steel constantly reinvents itself with the latest technology to improve quality and customer satisfaction. Right from the ore to the mills, Sangam adheres to extremely stringent norms to ensure that the highest quality steel reaches the end users. The fully equipped labs with some of the most ultra modern testing and constant up gradation and research makes Sangam Steel the best in its class.

Universal Testing Machine

Fully computerised and can provide accurate results for tensile, bend and re-bend tests.

Spectrometer

For extremely accurate testing over 18 elements. Gives instant results with a proven German Technology.

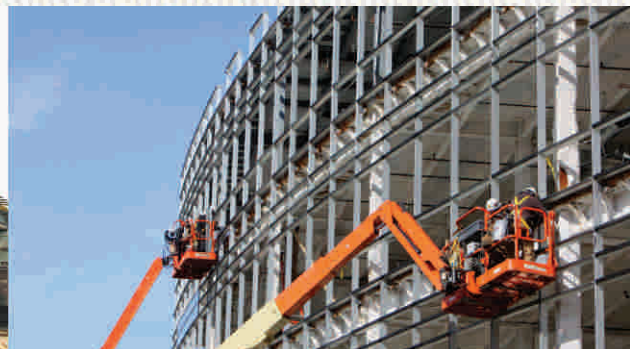
Laboratory Furnace

Facilities of actual working conditions, testing, analysing and simulation.

C & S Determination Unit

Complete glassware assembly with combustion chamber control panel.

Advantages: Accurate chemical analysis possible with zero human interference & manipulation





QUALITY IN DETAILS

The critical laboratory equipments help Sangam in precise aspects of quality. Sangam Steel's systems ensure further finesse when making construction bars. A few of them are:

Gauge control system

Fully automated close tolerance gauge control.

Advantages:

Ensures correct size of bars in rolling & avoid wastages

Zero Tension Rolling Looping system

Ensures tensionless rolling.

Advantages:

- Perfect round bars
- Automatic Multi Snap Shear System
- Variable Speed DC Drive System

Gasifier

Coal based Gasifier, made in the most modern design.

Advantages:

- Eco friendly
- Cost effective
- Facilitates uniform heating across the length of bar



Reheating Furnace

State of the art gasified furnace with highest output capacity.

Advantages:

- Complete automation for fuel gas analysis and temperature control
- Design to roll only billets
- Single piece billet of length 9.0 meters can be heated
- Precise temperature control decides the metallurgical properties

Roughing, Intermediate & Finishing Mill

- Largest & fully automated rolling mill set up
- Slitting & looping, control system
- Gauge control system
- Every roll stand is fitted with pneumatic control

Advantages:

- Gradual reduction in size finer grain structure
- Perfect tensionless rolling resulting in better & consistent properties
- Perfect and precise heights
- Perfect round and cross-section of the bar

Quenching System

Quenching System provided by Thermex, Germany.

Advantages:

- Modify quenching box to dual quenching system in order to achieve better quenching properties
- Every parameter is controlled, reducing quenching time
- Assured quality and stability in shape of the bars

Cooling Bed

Cooling bed of size 5 Mtrs x 90 Mtrs.

Advantages:

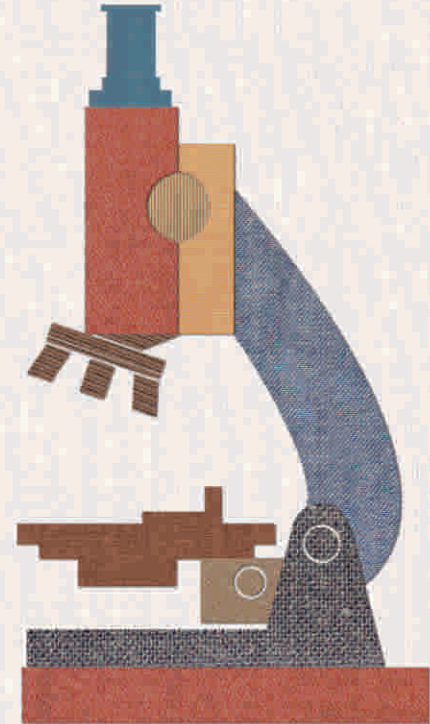
- Ensures proper self tempering & normalising of QST bars

Finish Goods Yard

Area 5500 Sq mtrs. Close-sheded to stock materials and is equipped with EOT cranes.

Advantages:

- Rust-free material for dispatch
- Speeds up delivery period



**OTHER
PRODUCT
RANGE**

- **DRI**
- **MS Billets: 100x100, 110x110, 125x125, 160x160 mm as per IS 2830 -1992**
- **Channels: 74x40 mm & 100x50 mm**
- **Rounds: 16mm, 20 mm, 25mm, 30 mm, 40 mm**
- **Angles: 15x5mm, 55x4 mm, 55x6 mm, 60x6 mm, 45x3 mm, 45x4 mm, 45x5mm, 45x6 mm**
- **Squares : 16mm, 20 mm, 25 mm, 30 mm, 35mm, 40 mm**
- **Hexagon Steel: 16 mm, 18 mm, 20.5mm, 23.5 mm, 25.5mm, 28.5mm, 31.5mm, 37.5mm**



STEEL FOR GROWTH

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