

ICON STEEL

TMT BARS

www.iconsteel.com

ICON 500

30 YEARS OF
GLORIOUS
TRADITION

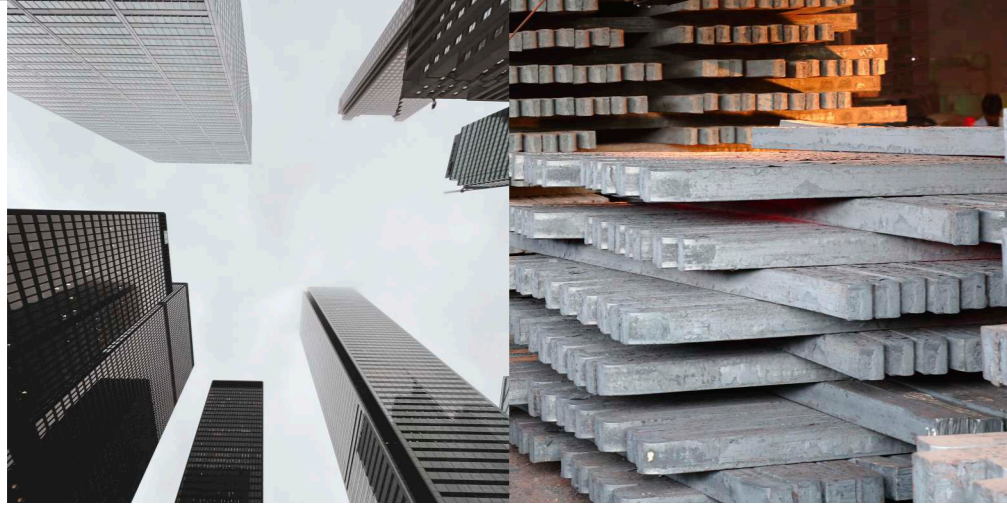
ICON STEEL

TMT BARS

Strongly bears
the new standard

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30 YEARS OF
GLORIOUS
TRADITION



PIONEERING IS LIFELONG, NOT A ONE-TIME EVENT

It is true that manufacturing prowess is all about materials, equipment, process know-how, cost efficiency, and product inspection. To succeed as a brand, however, takes a lot more.

The manufacture of construction steel in the country entered the modern phase around thirty years ago. The QST process was adopted from western Europe and its advantages over the earlier cold twisted deformed (CTD) process became evident.

At Icon Steel, our heritage in the manufacturing sector goes back to the introduction of the quenching and self tempering (QST) process in the country. Our team led the way in implementing the patented German cooling technology as a pioneer of Thermo-mechanically Treated

steel (TMT) in western India. The many years of experience in working with the Thermex® technology from HSE, Germany are a competitive edge for Icon Steels even today. Another key differentiator is that Icon Steels took the route of integrated manufacturing that gives it higher control over the final product quality. The billet and TMT plant with a continuous line from ingots to bar enables leadership in manufacturing with a unique capacity for innovation.

At the beginning of a new decade, Icon Steel is poised to set new standards, formulate new products, and serve its customers in more value-added ways.



TMT STRENGTH FOR THE PURPOSE OF **BUILDING SAFETY**

Expanded steadily to become
Maharashtra's largest TMT Steel manufacturer

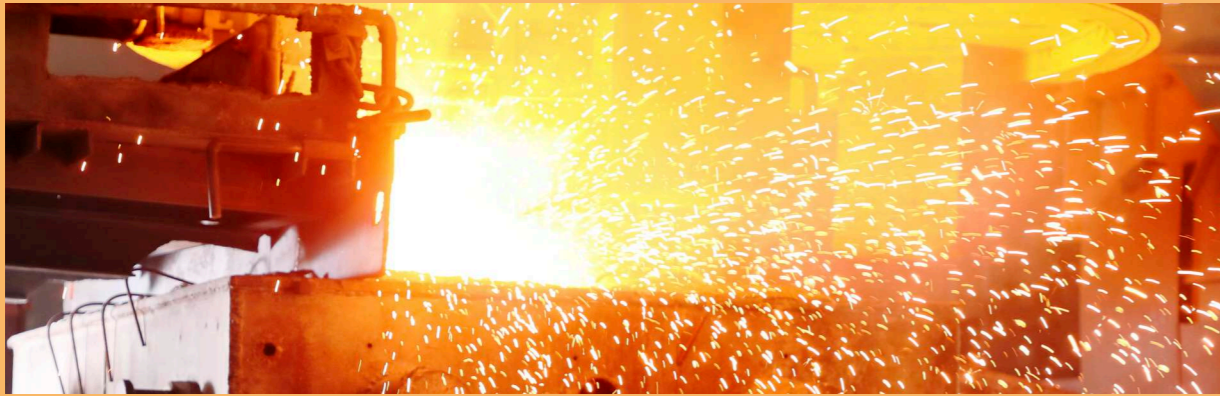
Over 1400 retail points across Maharashtra,
Rajasthan, M.P., A.P., and Karnataka

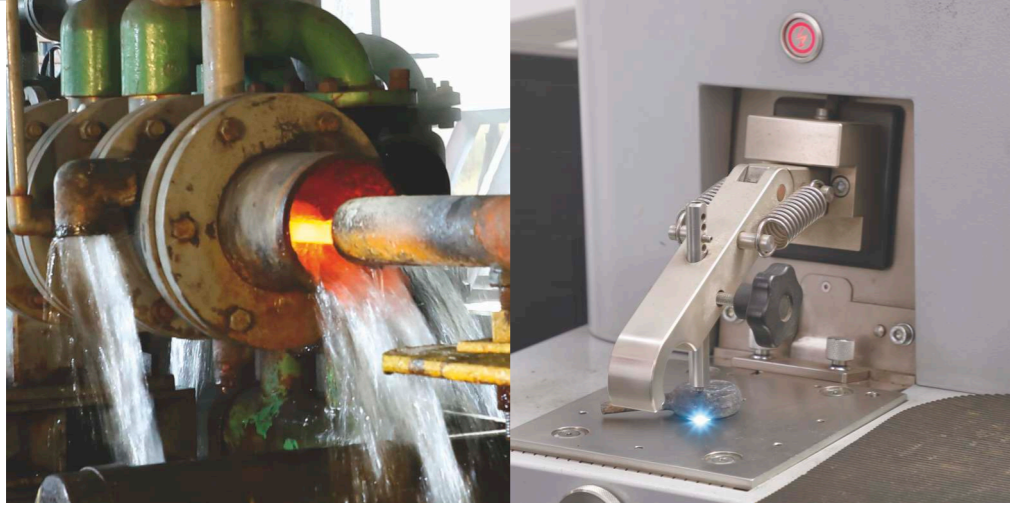
SGS certification (Germany) for product
quality and process compliance

Fully integrated manufacturing from billet to bar,
for effectively managing the quality

Conformity with IS:1786, IS:13920 and
BS:4449:2000 standards

Pioneer in implementing the Thermex HSE quenching
technology from Germany for TMT Steel in the region





A DISTINCTIVE COMBINATION OF EXPERIENCE AND INNOVATION

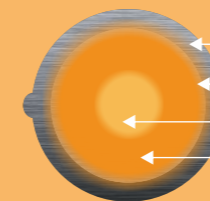
It takes a lot of intensive hands-on experience to attain mastery over the QST process.

The bars from the rolling mill at 900 deg. C temperature are put through a controlled quenching where the amount and temperature of cooling water are pre-set, and within just a few seconds, they cool rapidly to about 450 deg. C. When the quenched bars are tempered through two stages, the result is a dual phase bar, which has a hardened exterior and a ductile core.

At Icon Steel, our years of experience with integrated manufacturing and process control help us in achieving the precise microstructure in the TMT bar with the desired mechanical properties for various construction applications.

MANUFACTURING WITH THE REQUIRED PRECISION

TMT Steel manufacture is all about managing high temperatures and precise timing. To achieve a targeted chemical composition and microstructure in the bar, the quenching time and uniformity of the water cooling play a major role. Its outer part becomes martensite which then gets tempered as the heat from the core travels to the surface.



- ← Martensite temperature 350 c
- ← Tempered Martensite
- ← Ferrite-Pearlite
- ← Annular zone of mixed Bainite

MECHANICAL PROPERTIES

YIELD STRENGTH	520 - 565
TENSILE STRENGTH	630 - 730
STRESS RATIO	1.15 - 1.25
ELONGATION %	16 - 25





IDEAS, INTERACTION, INITIATIVE

To respond early to changes in users' requirements, to work with contractors to serve them more closely, and to gain the trust of construction specialists, it's critical that we follow and listen to the experts, the planners, the technical advisors and leading practitioners.

It requires us to know how project managers are planning their site activity, how they schedule their procurement, how structural engineers are developing estimates, and how they want the deliveries to be made.

By meeting their information and support needs in better ways, our brand earns further esteem from them. When it comes to the point of availability - our dealer associates - Icon Steels continues its tradition of modern signage and retail messaging. It builds on the years of a positive relationship and is a volume leader in Maharashtra, with over a thousand dealers across Maharashtra, Madhya Pradesh, Rajasthan, Andhra Pradesh and Karnataka.

Icon Steels has organised various kinds of dealer meets, informal events, orientation sessions and has an ongoing exchange of information and inputs with business associates.

The initiatives like Site Support Technician Team and instructional audio-visuals have been welcomed by builders and site supervisors. At Icon, we follow up on our ideas and interactions with solid initiatives.

On site, you can obtain best results by:

Use TMT Bars of the same grade and quality across the structure.

Use concrete cover blocks of the same strength at regular intervals.

Position and fix the bars tightly and properly.

Avoid material wastage by planning out a bar bending schedule before starting to cut or bend any TMT bar.

While joining, provide adequate lap length between bars.





AN IDEAL MICROSTRUCTURE TO BALANCE STRENGTH AND DUCTILITY

Our TMT bar is the result of precision manufacturing. It has a composite microstructure - tempered martensite in the outer layer, a transition zone of pearlite-bainite, and a fine-grained ferrite-pearlite at the core.

Metallurgical expertise is applied to ensure that the Icon TMT Bar is weldable, as well as hardenable. As the input material has a carbon content between 0.13% and 0.24%, martensite formation takes place hardening the bar.

The microstructure depends upon the steel's composition, the duration of cooling, success of the quenching process, and the bar's diameter.

When the hot rolled bar is rapidly quenched with water, the outer layer of martensite-austenite mixture is formed. It is moved to the air-cooling stage where, from the hotter core, heat flows towards the surface tempering the outer layer. It is this self-tempering from the residual heat in the core which gives the bar its ductility along with high yield strength.

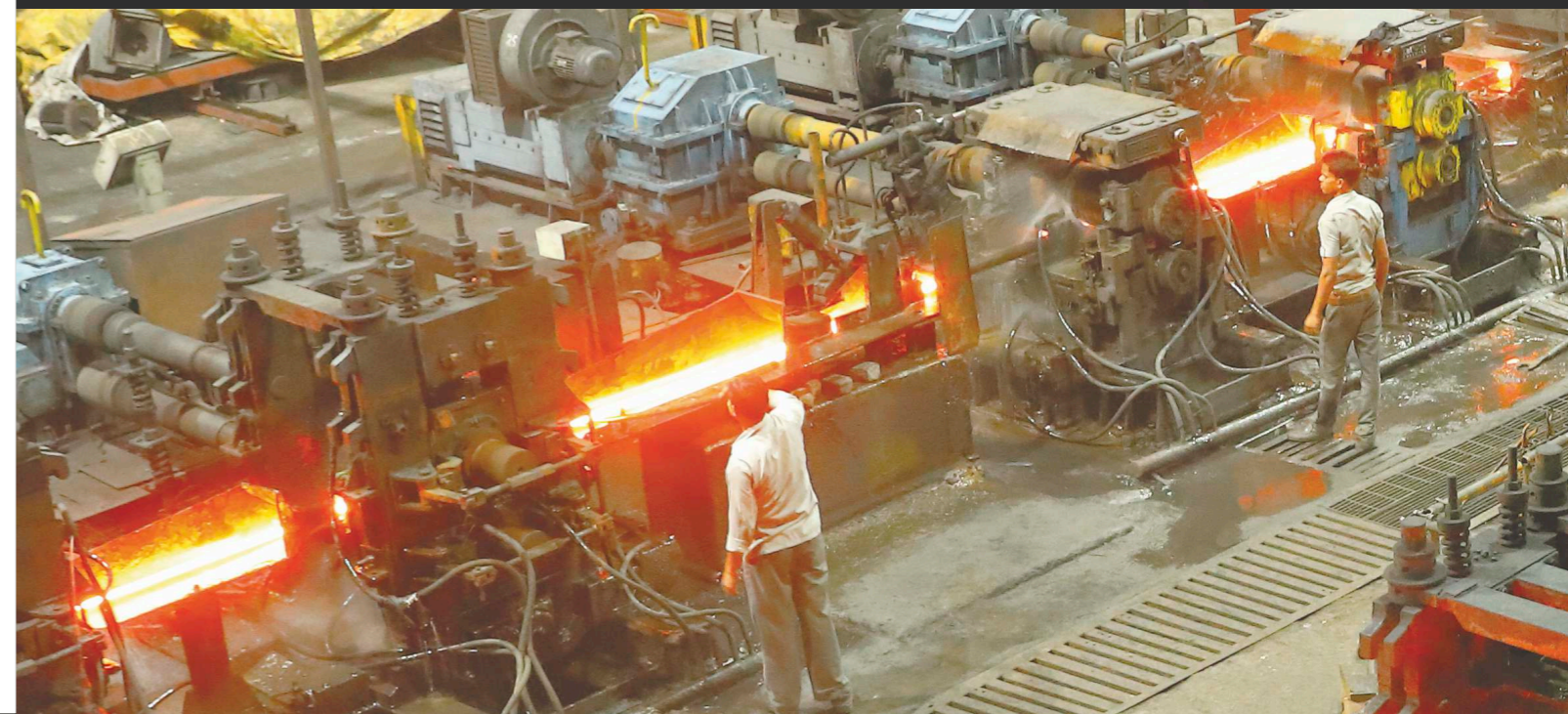
On further cooling, the core becomes a ductile (D) ferrite and pearlite structure. Due to this, our bars can be bent and re-bent without cracks, and straightened without reducing its tensile strength (S).



Icon Steel, in an initiative to augment customer confidence, has opted for international SGS certification which assures that our products are manufactured in compliance with statutory obligations. Their inspections verify and certify our products are made as per listed specifications.



The certification vouches that the equipment in use conforms with technical standards and that the products are handled correctly during transportation.





MANUFACTURING PRACTICES TRANSLATE INTO CUSTOMER ADVANTAGES

Our consistency in manufacturing practices assures our customers - whether individual or institutional - of a robust and lasting product.

Icon Steel's products bear the IS:1786 and IS:13920 mark of the standards bureau.

This assures you entirely about its chemical as well as physical parameters. They comply with many international specifications, and are in conformity with BS 4449:2000. Additionally, manufacturing is compliant with international SGS certification.

Specialised Quality training as part of our Quality System

For consistency batch after batch, month after month. Our manufacturing is electronically controlled and we have installed an array of quality assurance and testing equipment in our labs.

Our TMT bars are designed to have a wider contact and a stronger grip.

The bond between our TMT bar and the concrete is critical as they together bear the load together. The breadth of the ribs on the Icon bars equip them for an excellent grip with the surrounding concrete. They are notched with precision on in-house specialised CNC machines, and the uniform and prominent ribs give them superior bonding strength. In turn, the civil structure is made stronger and longer lasting even while 15-20% reduction in use of steel is achieved by use of tempered TMT bars.

Icon TMT bars - precise chemical composition; fine-grained microstructure; combination of high strength and high ductility.

Safety for use across regions, including seismic hazard zones.

Uniform and prominent ribs notched with precision on CNC machines; good bonding with concrete.

Can be bent and straightened without cracking or loss of tensile strength.





1,10,000 cubic meter space
large lake where water is stored



Japanese Miyawaki dense forestation



R O Water plant for Thermex Quenching system