

MORE

STRONG
FLEXIBLE
RELIABLE



The New Definition of Strength
AGNI 550 D RODS



SPONGE IRON | BILLETS | TMT RODS

IS: 1786



CM/L 6257572

IS: 2830



CM/L 6404862

IS: 14650

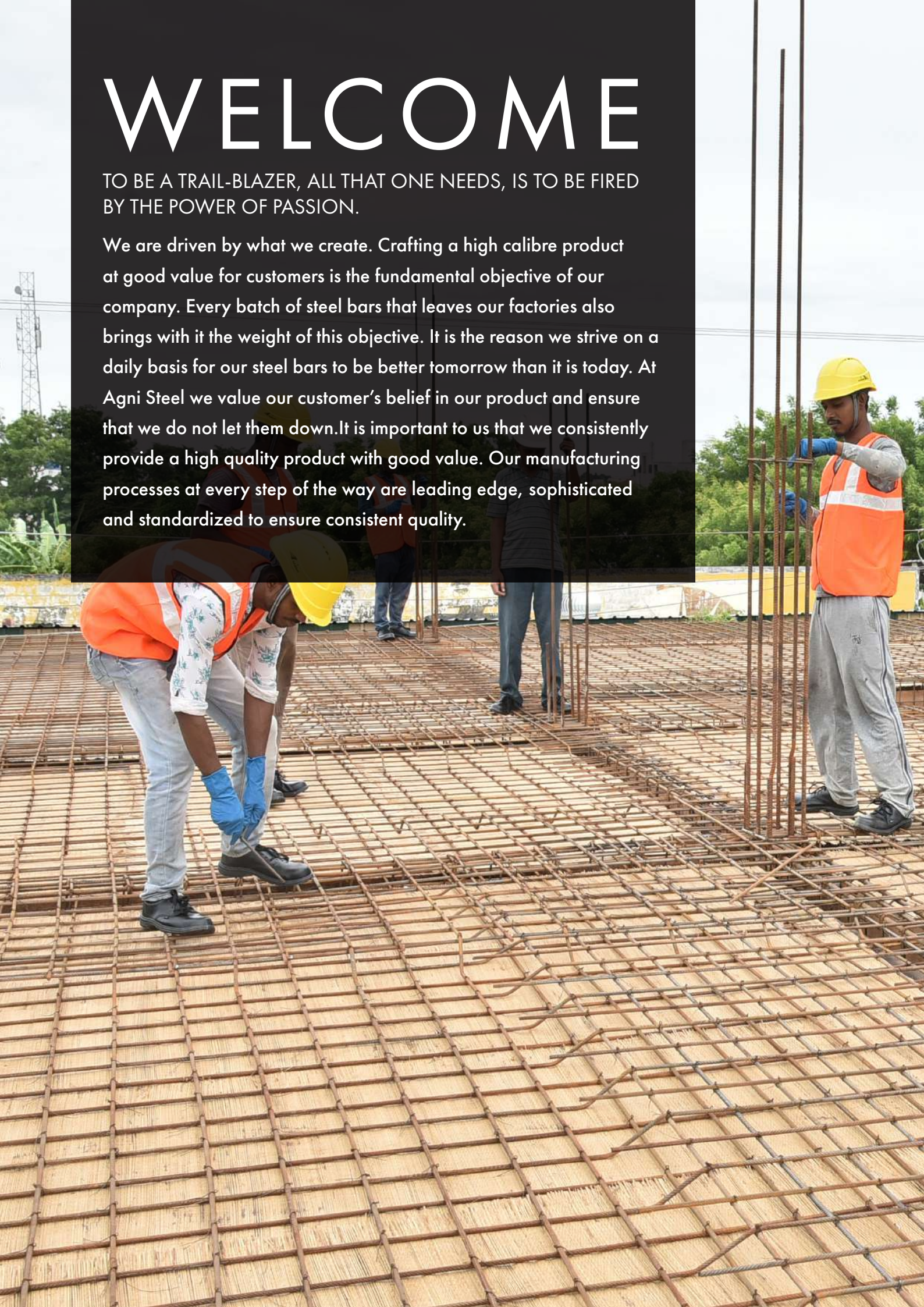


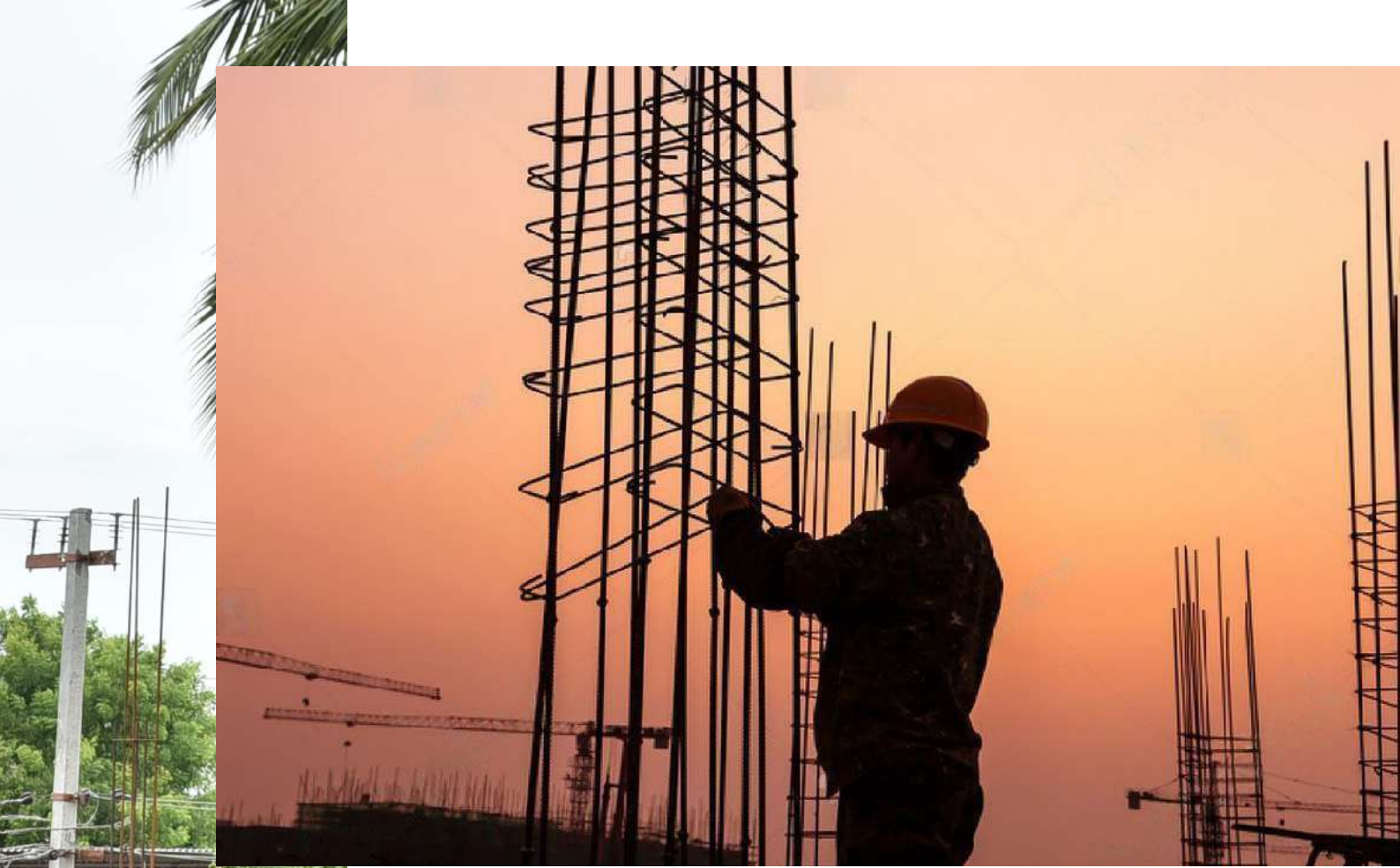
CM/L 6472475

WELCOME

TO BE A TRAIL-BLAZER, ALL THAT ONE NEEDS, IS TO BE FIRED BY THE POWER OF PASSION.

We are driven by what we create. Crafting a high calibre product at good value for customers is the fundamental objective of our company. Every batch of steel bars that leaves our factories also brings with it the weight of this objective. It is the reason we strive on a daily basis for our steel bars to be better tomorrow than it is today. At Agni Steel we value our customer's belief in our product and ensure that we do not let them down. It is important to us that we consistently provide a high quality product with good value. Our manufacturing processes at every step of the way are leading edge, sophisticated and standardized to ensure consistent quality.





ABOUT US

THE BURNING DESIRE TO EXCEL HAS ALWAYS BLAZED OUT
PATHS TOWARDS NEWER HORIZONS AND GREATER HEIGHTS

We commenced production in 1992. As a well- established name in the manufacturing of ISI certified TMT Steel rods, our devotion to impeccable quality and customer delight has been, and will always remain as our differentiating factor. Backed by our vertically integrated infrastructure, our expertise as a renowned manufacture of Steel rods has been strengthened through years of experience in this field. It is this reason why we continue to pursue glorious heights, manufacturing steel rods and delivering quality.

At every phase of the manufacturing process, we reaffirm our commitment to the highest quality. The fact that we furnish a Test Certificate for every batch that goes out of our factory, is an ample proof. Combining a host of benefits like high bendability and weldability, resistance to fire, and rust & corrosion, our rods are the cost-effective option for constructions. We believe, over 3 decade of experience, a fast growing dealer network and our fiery passion will keep illuminating our efforts as we make inroads into new territories in the years to come.



SPONGE IRON

OUR PROCESSES START AND END WITH
ONE CORE RAW MATERIAL

At AGNI, the strength of our products starts not only from the modern manufacturing process followed at every level, but also from the selection of high grade raw materials.

Iron ore sourced from reputed mines and imported coal are segregated grade-wise after undergoing stringent quality tests. Based on the best grade, the hematite iron ore and coal are added in the right proportion in the Rotary Kiln where proper temperature is maintained for undergoing Direct Reduction of oxygen in Iron ore (DRI). With the process of elimination of impurities, high-quality sponge iron is produced. The sponge iron so produced is high in iron & metallization, low sulphur & phosphorus, minimal dust generation, good consistency and flowability and are stored in covered bunkers to maintain its quality.



SPONGE

IRON PLANT

From the very beginning of the manufacturing process, we believe in maintaining a distinguished standard of quality. Our finished product can only be as good as our raw materials which is why we use only high grade iron ore and coal for production. Further, manufacturing processes are sophisticated and conducted with precision to produce high quality Sponge Iron



HIGH GRADE COAL

Produced with high grade coal imported from South Africa.



HIGH CAPACITY

A production capacity of 100 TPD (Tons Per Day) of Sponge Iron.



AUTOMATED PLANT

State of the art, fully Automated Plant for production of in-house Sponge Iron.



Molding Innovation into REALITY

FINEST BILLETS

CUTTING-EDGE TECHNOLOGY HAS ALWAYS
ENABLED US TO CUT AN EDGE OVER THE REST

Our Steel Melting Shop (SMS) is equipped with medium frequency Induction Furnaces and latest technology 'Concast India' machine with rigid dummy bars.

In our SMS, molten metal is tested periodically by spectrographic analysis for the desired chemistry and temperature to ensure the required quality is maintained before casting into Billets. Alloying elements are added to the molten metal to eliminate impurities and to achieve the desired strength. The molten metal is ladle-transferred to the Continuous Casting Machine wherein the temperature of the molten metal is reduced gradually in steps to form billets with homogeneous requisite of chemical-physical properties and strong internal structure. During the process, Billets are periodically tested to ensure surface and sub-surface properties are maintained and taken to rolling mill for further processing.

BILLET

Manufacturing Unit

High quality Sponge Iron we produce in our own factories goes towards the manufacture of billets. Melting the Sponge Iron in a carefully regulated furnace helps maintain a consistent composition. Prior to converting them to billets, the molten metal is screened for its properties. The manufactured billet is further screened for the right chemical proportions. Only billets that match our specific standards are sent for processing to the rolling mill.



HIGH GRADE SPONGE

High grade sponge is used to manufacture our billets.



UNIFORM COMPOSITION

Our Billets are casted using a CCM [continuous casting machine] which ensures a uniform composition.



ISI CERTIFIED

Our billets hold IS:2830 and IS:14650 Indian Standards certificate.



ROLLING MILL

KEEPING PACE WITH CHANGE AND EVOLVING WITH CHANGING TECHNOLOGY, CONTINUES TO PROPEL OUR PROGRESSIVE ENDEAVOURS...

We have our own state-of-the-art Rolling Mill that facilitate the production of world-class Steel rods from Billets manufactured in-house. The state-of-the-art Rolling Mill is equipped with three 17" inch Roughing stand, four 12" inch intermediate stand, two 12" inch Finishing stand, four Continuous stand, Flying shear with modern cooling bed for the production of world class TMT Steel rods from quality Billets. The Billets are rolled into TMT Steel rods of varying diameter.

Each meter length of the rod is sealed with the "AGNI" mark, an evidence of the fine quality. The high-end technology employed at the Rolling Mill is intended to ensure that the rods conform to the severe chemical and physical tests prescribed by the Bureau of Indian Standards (BIS).

ROLLING

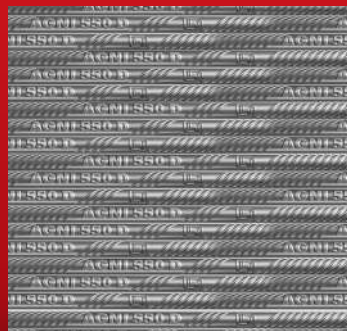
MILL

The billets we produce in-house are processed in our leading edge, fully automated Rolling Mill. Agni Steels' TMT bars undergo a comprehensive TMT treatment. In this process, the steel tmt bars receive a short, intensive cooling as they pass through the specially designed water cooling system after the last Rolling Mill Stand. Our steel bars are processed to bond better with concrete cement mixtures and maintain high strength, while weld.



TEMPCORE TECHNOLOGY

The TEMPCORE technology provides the bar with a strong outer core of tempered martensitic steel with a softer inner core of ferrite-pearlite.



PRE-STRESSED STRANDS

Pre-stressed strands ensure a bar to maintain roundness and weight throughout its length.



STRONGER BOND

Our TMT rods have precise longitudinal and a inclined transverse ribs ensuring a stronger hold with concrete.



ISI CERTIFIED

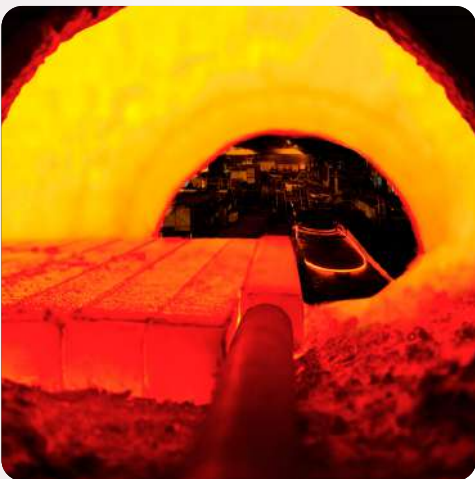
Our TMT Rods hold IS:1786 Indian Standards certificate.

THE PROCESS OF MANUFACTURING AT AGNI



BILLET FORMATION

Copper mold utilized to cast continuously through strands. The material copper is selected for its high heat transfer co-efficient. The liquid steel is poured into the copper mold, where in partial strand, solidification is attained. The partially solidified strand is withdrawn using a dummy-bar system initially. The initially formed billet has as-solidified cast grain structure. The liquid steel gains strength through the liquid to solid transformation, which leads to periodic ordering of crystal structure, attaining unique strength and ductility, attributable to the periodic structure and metallic bonding nature of electron in an atom.



REHEATING

The solidified continuously cast grain structure billet, is reheated to 1100°C in the reheating furnace. During reheating, chemical segregation present in the cast billet is minimized through diffusion. High heat content provided in the reheating furnace enhances diffusion. As, diffusion is a temperature activated process In addition to chemical homogeneity, the slip systems present in the metal is activated at high heat content aiding plastic deformation metal. This process named hot working, results in the conversion of square billet to Ø 8mm– 32mm rebar.



QUENCHING AND TEMPERING

The austenitic rebar exiting from hot rolling mill, is quenched in the Specially designed water cooling system (TMT) Boxes arranged sequentially. Here in, the sudden controlled quenching automated through programmable logical control system feed the required quantity of water to each zone. This sudden quenching, micro structurally results in martensite in the rim. Since the core of the rebar is not as quenched, the diffusion of heat content from the core to the rim, allows the formation of ferrite and pearlite in the core region and rim as tempered martensite finally.

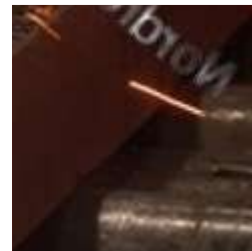
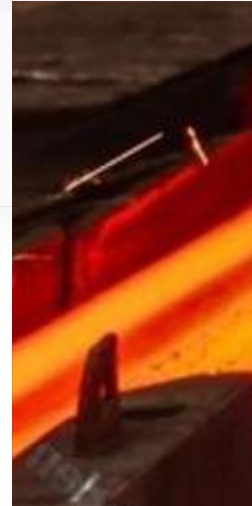
OUR TECHNOLOGY

In A Rapidly Transforming Scenario,
One Thing Remains The Same – Our
Thirst For Staying In Touch With New
Technology

AGNI STEELS High QUALITY TMT

AGNI's high quality Thermo Mechanically Treated (TMT) rods are manufactured using the most contemporary technology available and supervised by metallurgists and engineers. The salient features of the Rolling Mill include an extensive billet yard for cast-wise stacking of billets, reheating furnace, roughing mill, intermediate mill, and prefinishing mill, & Finishing mill, continuous shear to cut rods, besides most TMT facilities.

Our TMT steel rods are made using the 'Quenching & Tempering' (Q&T) technology. A contemporary technology, it allows the production of rods to be on par with international standards. Hot rolled from steel billets subjected to PLC-controlled online thermo-mechanical treatment, the rods are made to pass through heat treatment over three successive stages.



AGNI 550D

A series of scrupulous tests are executed on the products to meet the high quality standards that we, at AGNI, diligently pursue.

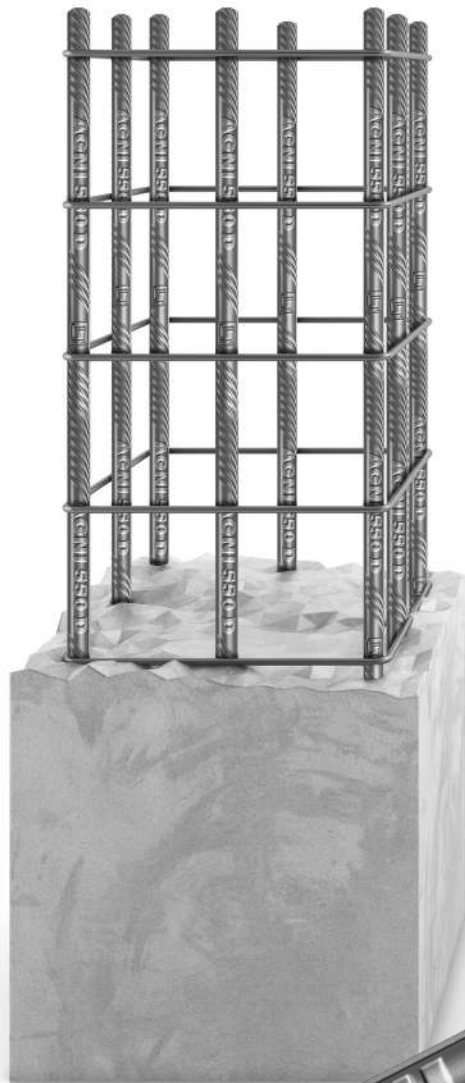
With a very controlled manufacturing process, we produce this superior quality of TMT bars. The Fe 550D bars are extremely fatigue resistant and display enhanced physical features due to the specific chemical composition. The intensified properties of strength and ductility reinforce the strong bonding of the rods with concrete during constructions.

- Lowered levels of carbon, phosphorus and sulphur making the structures resistant to seismic activity.
- Enhanced physical properties of strength and ductility achieved with a controlled production.
- Application needs fewer bars for reinforcements, reducing time, money, and labor.
- Higher amounts of alloying materials increase the resistance to rust and corrosion.
- Fe 550D stands for the grade of TMT bars that are made from superior quality raw materials, heavily reliant on Iron (Fe) and the "D" denotes the enhanced ductility of the product. These variant of TMT bars are manufactured in a very controlled environment to achieve the desired properties. From the usage of very superior raw-materials, specific temperatures, calculated processes, etc, everything is monitored to achieve this grade of TMT Steel that is aimed to build futuristic constructions
- The features and properties of these modern day product are retained when they are periodically monitored in a controlled environment. At our integrated Steel plant, our iron ore is selected from the best sources, imported from South Africa to ensure low levels of sulphur and phosphorus. The standards of Phosphorous and sulphur which causes fatigue in steel, is maintained at the lowest level of 0.075 Max (phosphorus + sulphur combined) with each (sulphur and phosphorous) not individually exceeding 0.040.



WHY AGNI 550D

At Agni Steels, we are constantly upgrading our products as per the research in the industry to meet the demands of the market and also the developments around the country. Our latest production is comprised of a product we can boast about, with its exceedingly superior features and applications



POWERFUL BONDING

The raw-materials of the 550D bars are chosen to enhance the features of the bars and the increased levels of the alloying elements strengthen the bonding with concrete. The strength of the TMT bars helps to build stronger structures that form extremely powerful bonds with the building materials thereby protecting life and property.

EARTHQUAKE RESISTANCE

The enhanced ductility achieved in the D variety of this Fe 550 TMT bars is detrimental in providing the elongation of the bars under an earthquake threat. The bars are able to withstand the shocks and tremors of the calamity with its increased level of bar elongation. The strength of these bars is also exceptionally high which allows the structure to withstand disasters.

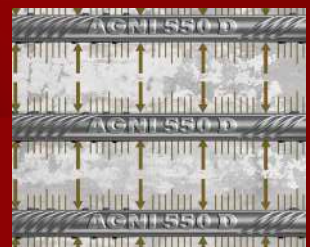


EASY BENDABILITY

The Fe 550D TMT bars are manufactured in the controlled environment to achieve its superior ductility that allows the bars to be extremely ductile and flexible. This flexibility of the bars allows the engineers and builders



to construct structures of their choice and also aim for futuristic and artistic designs. The flexibility of the variant makes the bars, easy to bend on pressure while maintaining.



QUALITY CONTROL

We Are Obsessed With Measurements; Measuring Up To Stringent Standards And Consistent Satisfaction

"At AGNI, we believe that quality is not an end-product; it is a continuous process, which is why, it is the watchword in all our operations. Committed to manufacture and sell quality steel products that conform to relevant standards and as per customer's requirements, our goal is to continually endeavour in enhancing the customer-centric activities."

Chemical Composition

Elements:	IS 1786 – Fe 550	AGNI Fe 550D
Carbon	0.25 (Max)	0.23 (Max)
Sulphur	0.04 (Max)	0.03 (Max)
Phosphorus	0.04 (Max)	0.03 (Max)
Carbon Equivalent	0.61 (Max)	0.42 (Max)
Micro Alloys Optional	0.30 (Max)	0.30 (Max)
Sulphur + Phosphorus	0.075 (Max)	0.065 (Max)
Manganese	NA	0.55 - 0.80

Agni TMT Steels Bars are Available in the following sizes :
6, 8, 10, 12, 16, 20, 25, 32, & 40 mm.

Dia (mm)	Normal Weight (kg/metre)	Tolerance (kg/metre)
6	0.222	0.204 - 0.238
8	0.395	0.363 - 0.423
10	0.617	0.567 - 0.660
12	0.888	0.834 - 0.932
16	1.580	1.485 - 1.658
20	2.470	2.371 - 2.541
25	3.850	3.696 - 3.971
32	6.310	6.121 - 6.500
40	9.865	9.572 - 10.165

Our technically qualified engineers run continual checks of the chemical composition as per the IS: 1786 testing methods.



PRODUCT SPECIFICATIONS

At Agni, we provide steel rods to the custom specification of our esteemed clients. We welcome your enquiries for our high strength steel rods.



MECHANICAL PROPERTIES	UNIT	IS:1786 FE 550 D	AGNI TMT FE 550 D
YIELD STRESS	N/mm ²	550 (Min)	570 (Min)
TENSILE	N/mm ²	600 (Min)	650 (Min)
ELONGATION	% (Min)	14.50% (Min)	18% (Min)

MECHANICAL PROPERTIES	UNIT	AGNI TMT CRS 550 D
YIELD STRESS	N/mm ²	580 (Min)
TENSILE	N/mm ²	650 (Min)
ELONGATION	% (Min)	17% (Min)

* For Corrosion resistant steels alloying elements shall meet the range as per BIS standard

MECHANICAL PROPERTIES	UNIT	AGNI TMT EQRS 550 D
YIELD STRESS	N/mm ²	570 (Min)
TENSILE	N/mm ²	650 (Min)
ELONGATION	% (Min)	19% (Min)

MECHANICAL PROPERTIES

YIELD or 0.2% PROOF	570 N/mm ² (Min)
ULTIMATE TENSILE	650 N/mm ² (Min)
ELONGATION	18% (Min)
BEND TEST (Mandrel size)	
Bars upto 20 mm	4 Φ (Max)
ABOVE 20 mm	5 Φ (Max)

CERTIFICATIONS

To Be Recognized As Who We Are, From What We Do, Remains Among Our Greatest Achievements

Our efforts to exceed expectations and ensure excellence are reflected in the certifications conferred on us. It is our continuous pursuit to excel, that enables us to set higher standards as well as to achieve them. We are the 1st Indian company in the Private Sector to have been bestowed with a rare honor - the 'ISI' certification (IS 14650 for Cast Billets). This certificate was awarded to us in 2004 by the BIS. Along with the IS 14650, we have also been certified with the coveted IS 2830 for the Cast Billets that go into the manufacture of our IS 1786-certified TMT steel rods. Our products also comply with International standard codes of practice, the quality parameters for Fe 550, conform to American, British & European standards that are equivalent to IS 1786 - 2008. An efficient and experienced team of Quality Control Engineers manning our hi-tech laboratory ensures that no effort is spared in the achievement of these standards.



COMMUNITY ENRICHMENT

Service to the community has long been at the



Agni Steel strongly considers that sustainable civic improvement is crucial for solidarity between the community and the organisations. We strive to make a constructive impact to the underprivileged neighborhoods by supporting a wide range of socio-economic, educational and health initiatives. We empower communities through farming development, skill development of youth, promoting entrepreneurship.





MINIMIZING WASTES

It is not only important to manage waste properly but to also take steps to efficiently reduce the amount of waste produced in the manufacturing plant. Using quality raw-materials will ensure that the final products are free of any defects, minimizing the number of waste products. Studied process management will ensure calculated usage of materials, gases, temperatures in the processes ensuring lowered wastage. Automation of machinery and processes can also aid in minimizing wastes through human error.

RECYCLE AND REUSE

Water is one of the important components used in the processes at a Steel manufacturing plant. From providing water for cooling processes, for cleaning purposes, to maintaining temperatures, etc water is an indispensable material used in the manufacturing process. We, at Agni Steels, reuse the water for different processes to ensure no wastage and promoting conserving this important resource. Also, the disposal of waste water is carried out with guidelines to avoid any water pollution that is hazardous to life and property



OUR COMMITMENT

We are deeply dedicated to the environment we operate in. We realize how crucial it is to restore the balance of our ecosystem that is constantly under threat. In whatever little way that we can, we make sure our responsibility in this regard is fully fulfilled. Through a windmill for the generation of green power, innumerable trees in the factory premises and vast area of plantations, emphasize our commitment to the environment. Our recognition comes from the quality of products that we make; but our greatest sense of satisfaction comes from nurturing Mother Nature and making sure that we leave behind a world of green for generations to come.

OUR NETWORK





Our presence over the South of India has been greatly strengthened by more than 700+ dealers. Just like our sturdy rods, we share an unbreakable bond with our dealer network. Together, we have cut across barriers of locations and logistics to penetrate the territory down South. A well-established market has contributed towards easy accessibility of our rods for our customers as well as an increase market share for us.

As we continue to explore new markets, our goal is to make our brand the number one choice in Steel rods across geographical boundaries. With our dealer network forming our backbone, we are confident of scaling new heights continually and consistently



AGNI

 **Agni Steels Private Limited,**
562 Kavandanur Road, Ingur - 638 058.
Perundurai (Tk), Erode Dist.
Tamil Nadu, India

 www.agnisteels.com
info@agnisteels.com

