



JINDAL
PANTHER[™]
TMT REBARS



inspired by the
strength & agility
of the powerful
black felines



message from the chairman

Dear Friends,

India is witnessing continued growth in the infrastructure, which accounts for 11 percent of our national GDP. As a result, there is a steady growth in the construction industry powered by large spending on housing sector. This has fuelled the demand for the reinforced bars in the individual home builder segment. To meet this burgeoning need, Jindal Steel and Power has forayed into retail with the launch of Jindal Panther™ TMT Rebars.

Home is the most cherished investment made by an individual. Our entry into retail is spurred with an aim to provide top quality reinforced bars to housing segment. Jindal Panther™ TMT Rebars are inspired by the strength and agility of the powerful black feline and promise to empower every Indian home by offering strength and purity to its construction.

Our brand values are rooted in excellence, innovation and commitment to world class quality as envisioned by our founder Sh. O.P Jindal. With these guiding principles, we aspire to serve the emerging needs of India.

Naveen Jindal

Chairman – Jindal Steel and Power Limited



**MOST MODERN
REBAR MILL
IN INDIA**

patratu rebar mill

Jindal Steel & Power operates a 1.0 MTPA capacity TMT Rebar mill at Patratu, Jharkhand supplied by Siemens of USA, the world leaders in rebar production technology. This mill produces high strength rebars conforming to BIS 1786:2008 Fe 500D, Fe 550D & 600 grade in normal, EQR & CRS quality.

TMT production at Patratu uses the superior and clean steel billets produced at the company's Raigarh Plant through the BF + DRI → EAF → LRF → Concast route with highly controlled steel chemistry & very low levels of sulphur and phosphorus (less than 0.035%).

The Patratu Mill uses superior HYQST (High Yield Quenching & Self Tempering) TMT technology for production of TMT rebars. HYQST technology produces rebars with high strength, high ductility, high bendability and high weldability surpassing the requirements of Fe 500D, Fe 550D & 600 CRS rebars. Jindal Panther™ TMT Rebars are thus able to withstand shock loading and cyclic loading conditions making them the choice of the designers for buildings in the high seismic areas.

1.0 MTPA
capacity plant

BF + DRI → EAF → LRF

our processes

Jindal Panther™ TMT Rebars are manufactured using the unique iron making, steel making & rolling process, which makes them stronger, safer and more ductile than any other TMT rebars, thus ensuring utmost quality.



The Manufacturing Process

Iron Making

Iron making through BF & DRI route using virgin iron ore lumps and fines mined through environment friendly processes.

Steel Making

State-of-the-art steel making technology using electric arc furnace and concast route producing clean steel billet.



Steel Rolling

World's most advanced Morgan Rolling Mill deploying HYQST technology, to produce TMT of consistently high quality finished with automatic cutting and packing.

1

DIGITAL FURNACE REHEATING

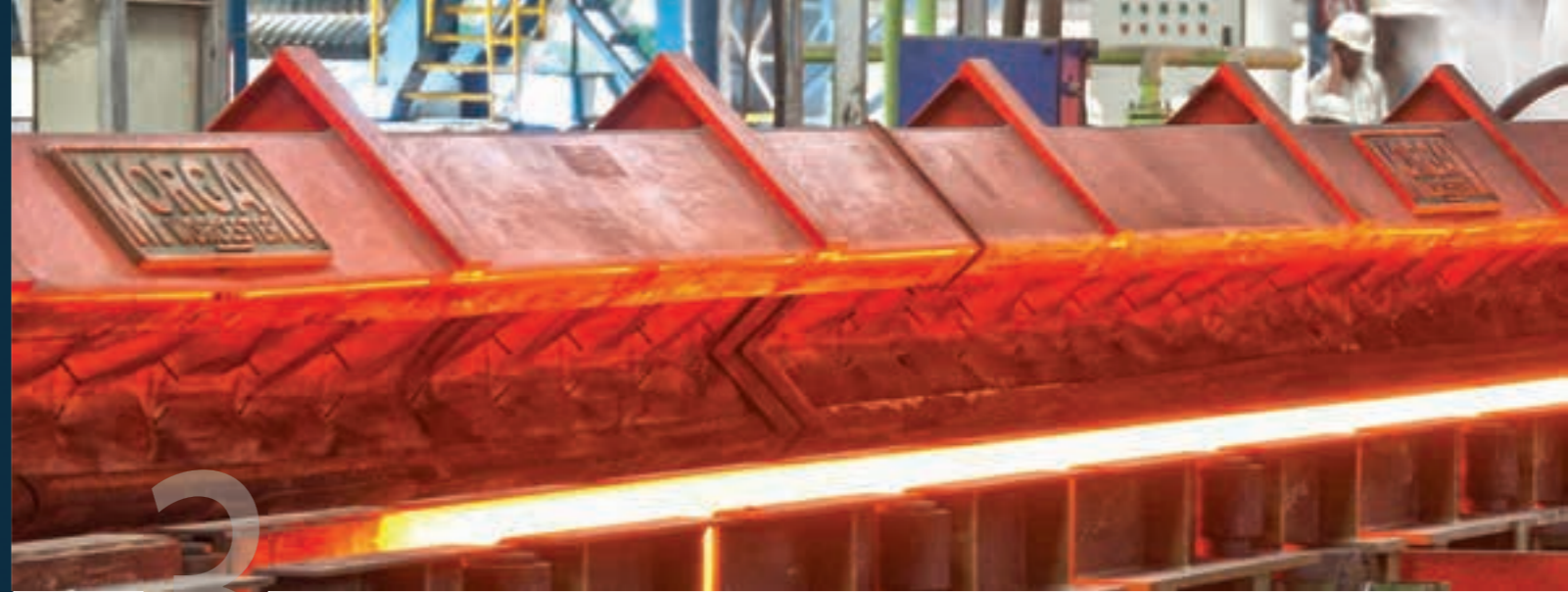
Walking Beam Type Digital Furnace, which not only ensures uniform heating but also ensures less fuel consumption.



2

SECONDARY DESCALER

To ensure scale free rolling using high pressure jets at 230 bar.



3

ROLLING (IN CLOSED BOXES)

- 12m long insulated roller table, which ensures rolling at a gap of 5 sec.
- Transports the processed sections, as a free bar, from Breakdown Mill to Continuous Mill.
- Minimizes temperature loss from head and tail end.
- Insulated cover helps to retain billet section's temperature.

NO TWIST MILL

- Continuous Rolling through alternate V-H Mill, which ensures a greater speed.
- Mill Train arrangement for proper rolling of finished sections.
- Bed assembly comprises of V-H bed assembly.



4

HYQST CONTROLLED QUENCHING & TEMPERING

Thermo-Mechanically Treated (TMT) Rebars involve a combination of plastic deformation of steel in austenitic stage followed by quenching and further self tempering in 90m long cooling bed.



5

AUTOMATIC STRAPPING & BUNDLE

Online controlling of length of final bar bundles as desired by the customers.



6

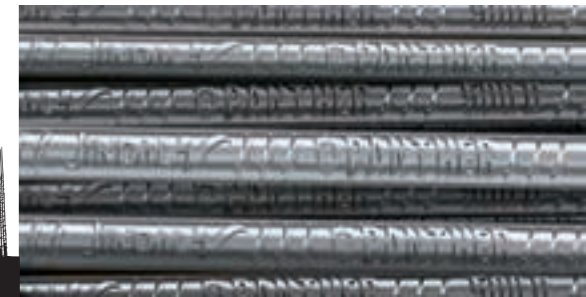
EXCELLENT BONDING WITH CEMENT: UNIFORM AND PARALLEL RIB PATTERN

Jindal Panther™ TMT Rebars have precise, uniform and parallel rib pattern engraved through computer controlled notch making machines, resulting in excellent bond strength with concrete. Parallel ribs on Jindal Panther™ TMT Rebars are produced by a high-speed finishing block called NTM (No Twist Mill) which is an ultra heavy-duty block using Tungsten Carbide rings that impart close dimensional tolerance with superior surface finish.

SUPERIOR WELDABILITY: LOW LEVELS OF CARBON

Low levels of carbon ensure easier and faster welding without preheating. This means stronger and safer weld joints & reduction in wastage during welding at site.

what makes our rebar special



EARTHQUAKE RESISTANT PROPERTIES: HIGH UTS/YS

Jindal Panther™ TMT Rebars have been proven to have higher resistance to cyclic loading conditions and are recommended in the earthquake prone areas due to their superior seismic resistant properties. Jindal Panther™ TMT Rebars meet international specifications for the UTS/YS ratio thereby providing them with high strength and high ductility. High UTS/YS ratio and more percentage elongation signify that the steel is capable to strain harder, in the event of an earthquake.

EXCELLENT BENDABILITY: HYQST TECHNOLOGY

Due to the highly controlled process that ensures a microstructure with a soft (Ferrite and Pearlite) core, Jindal Panther™ TMT Rebars have excellent bendability (in spite of their high strength) facilitating easy bending, making work easier and faster at the construction sites.

CORROSION RESISTANCE

Steel in concrete is usually in a non-corroding, passive condition. However, when corrosive elements like chloride from the sea water, soil salinity or carbon, nitrogen oxide from atmospheric pollution enters concrete, they disrupt the passive layer protecting the steel, causing rust and leading to a loss of bond between the steel and the concrete. The parallel rib pattern in Jindal Panther™ TMT Rebars created in the final finishing stand eliminates the chance of torsion residual stress. This coupled with low carbon content leads to superior corrosion resistant properties as compared to the ordinary rebars.

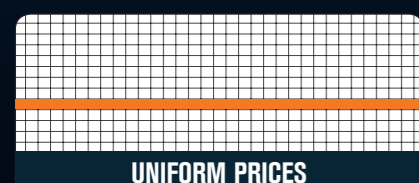
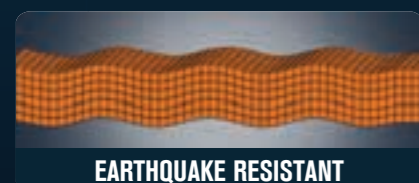
GREATER RESISTANCE TO FIRE

The quenching and the self-tempering treatment at a temperature of approximately 650°C results in a consistent and thick layer of tempered Martensitic-ring on the outer surface of the rebar imparting higher capacity to retain strength at elevated temperatures.

HYQST
technology

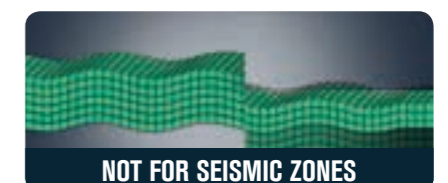


how our rebars are superior



JINDAL PANTHER™	YOU GET
Uses virgin iron ore and deploys state-of-the-art steel making and refining process	Highly clean & homogenous steel quality ✓
Steel is made using BF + DRI → EAF → LRF → Concast route	A highly controlled steel chemistry with very low levels of sulphur & phosphorus ✓
Rebars are manufactured using High Yield Quenching and Self Tempering (HYQST) Technology perfected by Siemens of USA	High strength and ductility due to fine grain multiphased composite structure ✓
Provides precise and uniform parallel rib pattern engraved through computer controlled notch making machines	Excellent bond strength with concrete ✓
Meets UTS/YS (Ultimate Tensile Strength to Yield Strength) ratio and high percentage elongation	Superior earthquake resistant qualities due to high capability of absorbing energy ✓
Surpasses minimum specified level of Bureau of Indian Standard (BIS)	More value for money ✓
Has predefined and transparent pricing	Fixed and uniform rates evidenced through a well displayed price list at our dealers' shops ✓
Is a National Brand	World class quality ✓

OTHERS (Secondary)	YOU GET
Use scrap or ingots for steel melting without any secondary refining process	Uncertain chemical and mechanical properties due to inclusion of tramp elements
Follow the melting process of secondary steel through induction furnace route leading to no control over chemistry	Variations in chemical composition leading to structural instability
Use outdated rolling process & technology	Non-uniform grain size and inconsistent steel quality
Use conventional machines for engraving ribs	'X' rib/non-uniform pattern which has low fatigue life and reduces bond strength with concrete
Use old technology leading to high variation in elongation	Much lower resistance to cyclic loading which is not recommended for the seismic zones
Barely qualifies the minimum requirements of BIS	Less value for money
Costs are linked to raw material movement like scrap & ingot	Daily fluctuations in rates
Are local/regional brands	Average quality



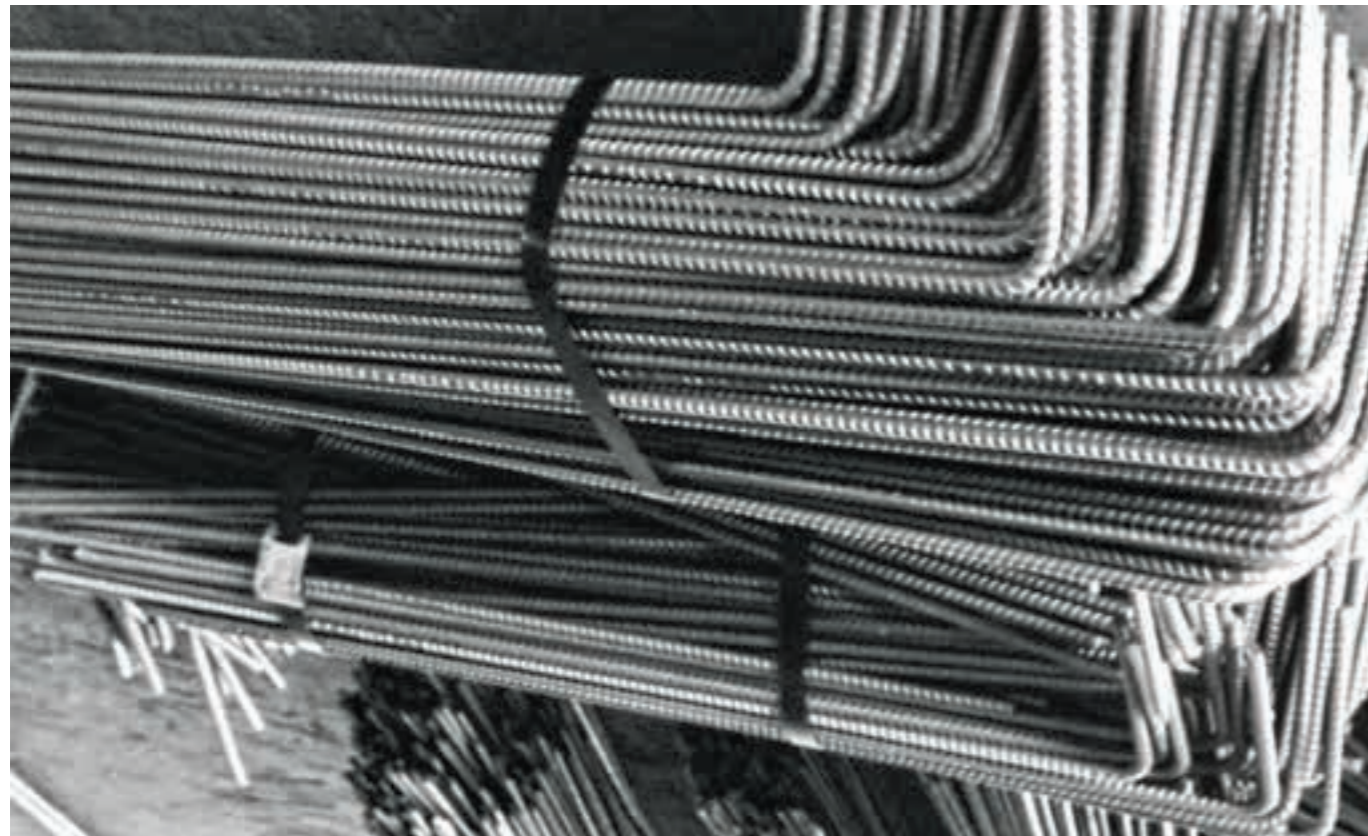
our innovations CUT

& BEND

CUT & BEND REBARS

Almost every structure comes with its own unique requirements of design while Jindal Panther™ TMT Rebars are manufactured according to the standard specifications. The practice of cutting and bending them at site to meet individual requirements can be labour intensive, time consuming, resulting in enormous material wastage.

Recognizing the need for a customized solution, Jindal Steel and Power has introduced ready-to-use Cut and Bend rebars. At its Cut and Bend Mill, that employs the latest Italian technology, rebars are customized to lengths and bends at required angles, in order to meet the project requirements. This fast and efficient service is capable of managing inventories better by reducing material wastage and production costs, apart from ensuring aesthetically superior clean and strong bars, which are made available right at the site.



WELDED WIRE MESH

Another pioneering idea, Welded Wire Mesh, is a new and efficient product which is aimed to expedite the construction. It is a processed steel product that consists of rebars welded together to form a grid pattern.

Use of Welded Wire Mesh reduces construction time considerably as it eliminates activities like cutting, marking & spacing of bar and binding of wires to the bars.

Benefits of Welded Wire Mesh are:

- Ready to use • Saves time and labour • Greater accuracy • No scrap generation • Reduced requirement of storage area

Jindal Panther™ Welded Wire Mesh is available in the following specifications:

- Diameter of bar used: 6mm - 12mm • Aperture: 50mm - 200mm • Width: From 1200mm up to 3200mm (max 2500mm with 4mm, 3000mm with 5mm) • Length: From 2000mm up to 6000 mm

size range

Jindal Panther™ TMT Rebars are available in the following sizes as per: 1786-2008 for Concrete Reinforcement (in mm)

6	8	10	12	16	20	25	28	32	36	40	45*	50*
---	---	----	----	----	----	----	----	----	----	----	-----	-----

The rebars are delivered in standard length of 12m bundles ensuring ease in transportation.

*Available upon prior agreement before ordering.

chemical & mechanical properties of our rebars

REBAR GRADE	BIS FE 500D	Jindal Panther™ 500D Typical Values	BIS FE 500D CRS (AS PER CLAUSE 4.2, NOTE-3)	Jindal Panther™ FE 500D CRS Typical Values	BIS FE 550D	Jindal Panther™ FE 550D Typical Values	BIS 600	Jindal Panther™ 600 Typical Values
% CARBON	0.25	0.20-0.25	0.15	0.11-0.15	0.25	0.22-0.25	0.3	0.25-0.28
% SILICON		0.15-0.25		0.15-0.25		0.15-0.25		0.15-0.25
% MANGANESE		0.90-1.00		0.80-1.00		0.95-1.05		0.75-0.80
% SULPHUR (MAX)	0.04	0.03		0.03	0.04	0.03	0.04	0.03
% PHOSPHORUS (MAX)	0.04	0.03	0.12	0.1	0.04	0.03	0.04	0.03
% SULPHUR+ PHOSPHORUS (MAX)	0.075	0.055		0.125	0.075	0.055	0.075	0.055
% CARBON EQUIVALENT (CE)	0.42	0.31-0.36		0.42	0.42	0.31-0.41	0.42	0.41
% COPPER				0.35-0.40				
% CHROMIUM				0.15-0.20				
YIELD STRESS (N/mm²) MIN	500	525	500	525	550	575	600	610
% ELONGATION (MIN)	16	18	16	18	14.5	16	10	12
TENSILE STRENGTH (N/mm²) MIN	565	600	565	600	600	645	660	675
UTS/YS RATIO	1.13	1.15	1.13	1.15	1.08	1.12	1.1	1.2



unique service offerings

FREE HOME DELIVERY: Jindal Panther™ TMT Rebars are delivered by the dealers at the work site of the customer for free of cost. (*within municipal limits)

MRRP (Manufacturer Recommended Retail Price): Our rebars are sold at a fixed MRRP which is displayed at all the dealer outlets.

WIDE NETWORK: Available across the country through a wide network of dealers and distributors.

MINIMAL WASTAGE: Sold on per piece basis to minimize your wastage and provide maximum value for money.

our standards are high

BIS-1786: 2008 specifications

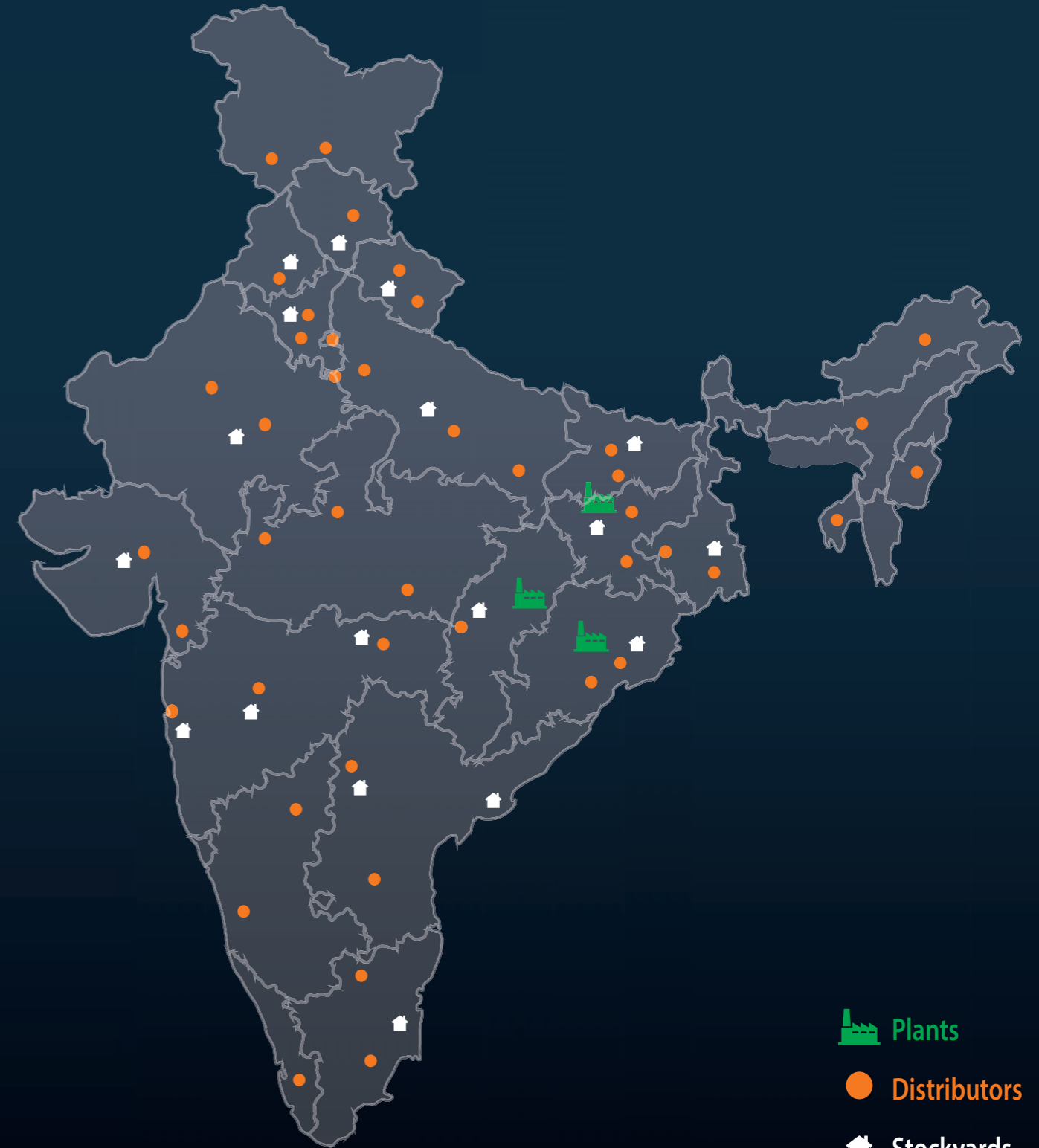
Fe 500/ Fe 500D/ Fe 550/ Fe 550D/ 600 grade/ CRS grades, where Fe 500D grade is highly suitable for seismic prone areas

ISO9001/ ISO 14001/ OHSAS 18001/ TS-16949

Some of the reputed companies & authorities that trust our quality:



our distribution is wide



- Plants
- Distributors
- Stockyards

• 20 Stockyards • 40 Distributors • More than 1000 Dealers



CORPORATE OFFICE: Jindal Centre, 12, Bhikaji Cama Place, New Delhi - 110 066, India
MARKETING OFFICE: Plot No.2, Sector 32, Near Exit-10, Gurgaon - 122 001, Haryana, India

Toll free: 1800 208 2008 | E: sales@jindalpanther.com | www.jindalpanther.com