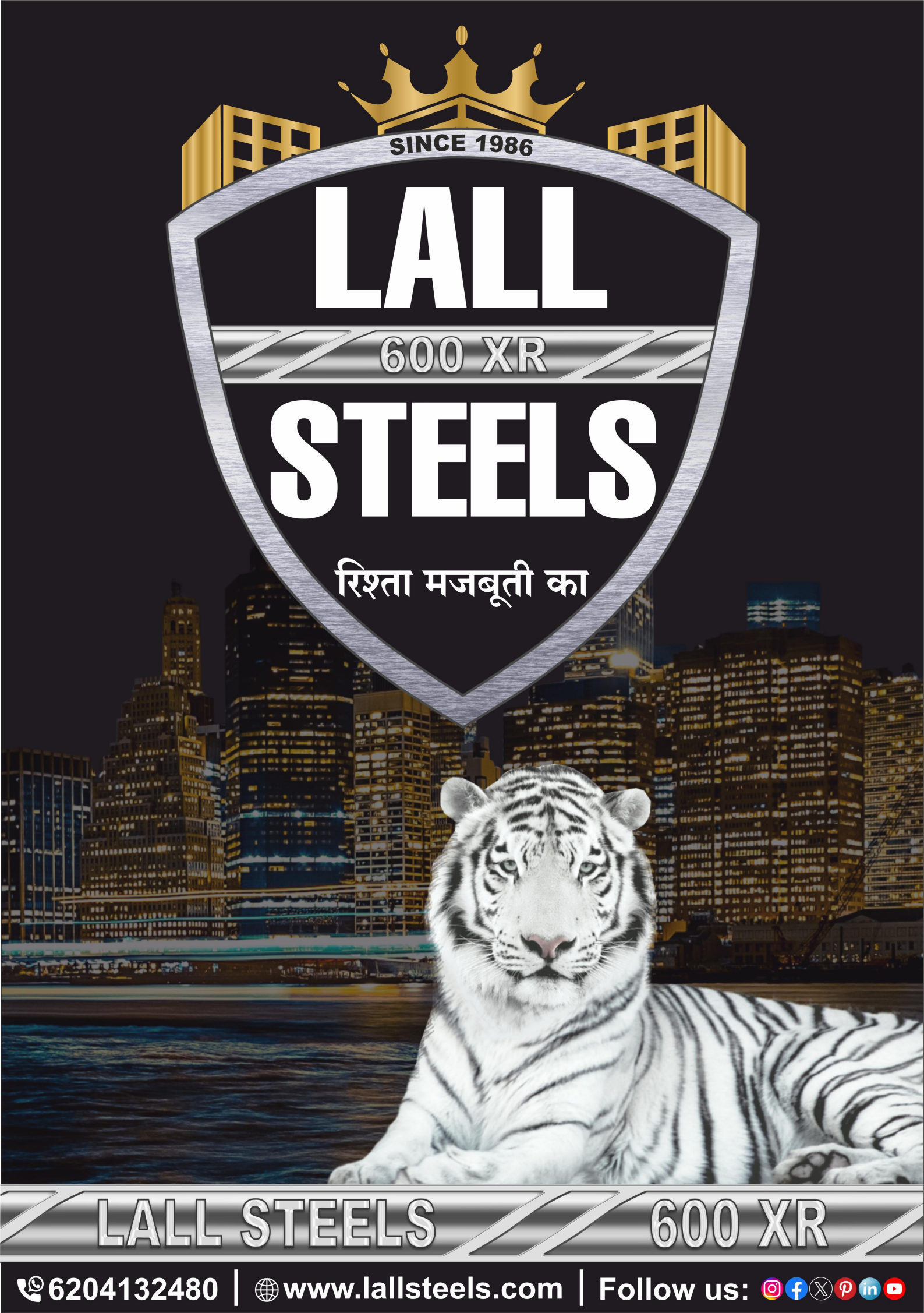
SINCE 1986
LALL
600 XR
STEELS
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600 XR
6204132480
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LALL STEELS
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LALL STEELS

ABOUT LALL STEELS

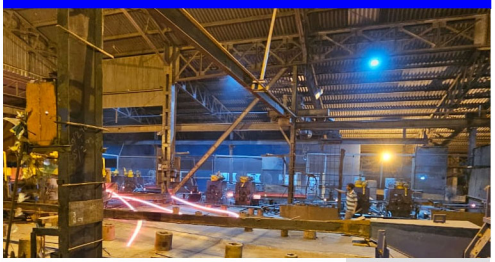
Lall Steels Private Limited traces back its origin to 1986 and was founded by the great visionary Shri Gobardhan Lal. The promoters have extensive experience in steel manufacturing, construction sector, property investments, medical services and have strong reputation in these arena. Lall Steels offers world class products that aim to provide the best in terms of quality to its customers. The company is pioneer in steel manufacturing in Eastern India.

Employees of Lall Steels have immense experience in their respective work field and are very loyal towards the company. Our every employee defines our vision, commitment and ethics. We strive to provide safe and quality output in a pleasant working environment while simultaneously protecting our planet. The company believes in continuous innovation and providing tailored products and solutions. We hope to continue building on a significant and responsive mechanism to address the issues related to resource acquisition and allocation which makes the manufactured products truly world class.

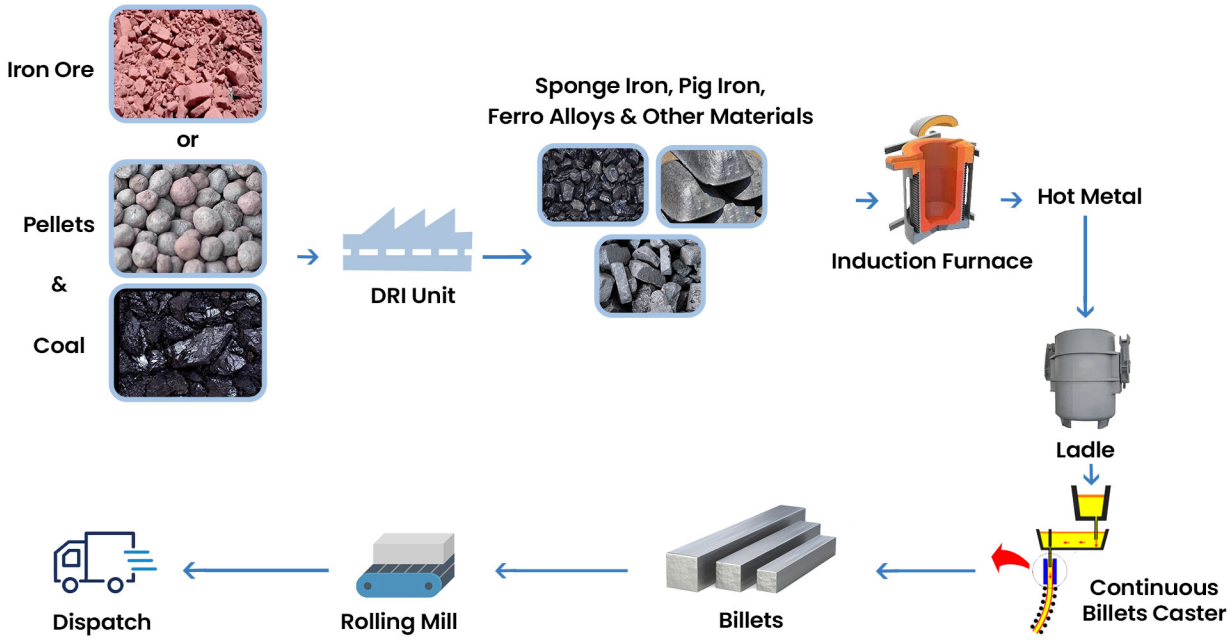
Induction Furnace & Caster

Vishwakarma Temple at Lall Steels

TMT Rolling Mill



PRODUCTION PROCESS



Production Process Flow Diagram

LALL STEELS AT A GLANCE

Mission:

To manufacture and deliver world class steel products at reasonable price for utmost customer satisfaction focusing on quality, innovation and excellence

Vision:

We aspire to be among the most reliable customer centric steel manufacturing company

Certifications:

Lall Steels 600 XR has been assessed and certified in accordance with ISI Specifications

Core Values:

Our great values define who we are and is the reason behind our success so far. Our core values are:

1. **No Compromise with Product Quality:** We consistently put immense efforts and implement latest technologies to ensure that there's no compromise with quality ever and our products are always world class
2. **Honesty and Transparency:** Our organisation is always completely transparent and honest in all transactions, standards and policies with all our partners, customers and employees which makes us one of the most sought after companies
3. **Relationship:** We always strive to build the best relationship with our partners and employees through collaboration, trust and mutual respect

Message from The Management:

DIRECTORS' DESK (JAI PRAKASH LAL & VIJAY KUMAR LAL):

"A True Leader Never Settles and Always Strive to Set the Benchmark Standard Higher". In due course of time; significant number of steel industries have been set up in India. This has also significantly diluted the quality of steel available in the market. But we never compromise on the product quality and that's the sole reason why we have been successfully Building India Since 1986.

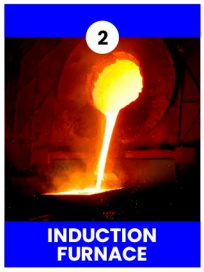
CEO (AJAY KUMAR LAL):

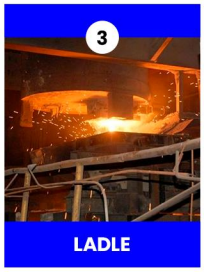
Before being approved for sale, every product is subjected to stringent quality check making them truly world class.

SALES & MARKETING DIRECTOR (Anurag Lall):

"You should never strive to sell a product/service to your customers which you can't sell to yourself." The thought itself speaks about our customer centric focus & approach and that's what our company and its brand communicate.

MANUFACTURING & TESTING

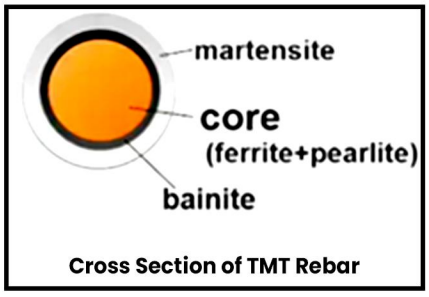




Steel Billet Manufacturing Process via Induction Furnace and Caster:

Billets are semi-finished casting products which are manufactured through induction furnace and continuous billet caster wherein the raw materials used are sponge iron, pig iron, ferro alloys and other necessary materials. Lall Steels produces very high quality billets which are highly ductile

Step Wise TMT Rebar Manufacturing Process:



Cross Section of TMT Rebar

Step 1 (Quenching): Thermo Mechanically Treated (TMT) Steel Rebars go through an automated controlled process of quenching leading to enhanced strength. During quenching process, the hot rolled rebar is rapidly cooled by an automatic water spray system inside the TMT box. While rolling, the rebar temperature is recorded at the time of mill entry till the final stand, ensuring that the rolling happens at very optimum and controlled temperatures

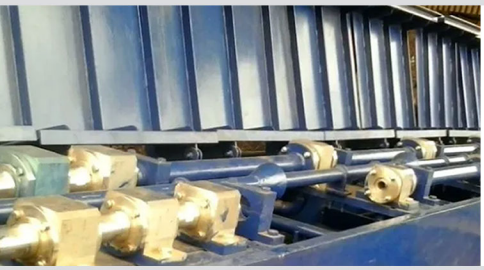
Step 2 (Tempering): While leaving the TMT Box (quenching system), due to temperature difference between inner and outer cores, inner heat transfers to outer surface, forming a strong tempered outer martensite rim

Step 3 (Cooling): The tempered rebar is passed through the automated moving cooling bed, during which austenitic core is transformed to the ferrite+pearlite structure. In this atmospheric cooling process, the inner core portion remains soft having good ductility. Thus the finally manufactured TMT rebars consist of strong outer martensite and a ductile inner core made of ferrite+pearlite

Product Testing at Lall Steels:

Sample from every lot of billets and rebars is tested rigorously (both chemical and physical) in our world class testing machines; which are officially calibrated and certified as per ISI norms regularly in order to ensure that the end product always has zero defect. We also get the products certified through 3rd party laboratories regularly

LALL STEELS 600 XR

Parameters	Results
  Manufactured with high quality raw materials which have high iron and low carbon content. Raw materials tested in world class laboratories to ensure the same	TMT rebars have very high strength
 Billets manufactured through steel melting via world class induction furnaces, ladles and billet casters	World class billets make very high quality TMT rebars
 Billets at very high temperatures are directly charged to rolling mill post casting. Hence, no coal is used for reheating	Very low carbon footprint and consistency in length, width and section weight of TMT rebars
 Manufactured in automatic rolling mill with tension control loopers for consistent section weight	Consistent weights leading to easy calculation and accounting for pilferage at construction sites
 Hot rolled rebars are passed through world class German technology TMT box	World class TMT rebars
 Water used in the rolling mill is filtered through world class RO water purifier	TMT rebars with enhanced shine and smoothness which is corrosion resistant
 Mill rolls are engraved through high technology CNC machine	Enhanced thick consistent rib pattern for better bondability with concrete

ORDINARY TMT BAR

Parameters	Results
 Manufactured with low quality raw materials which have low iron and high carbon content. No lab testing of raw materials done	TMT bars with very low strength
 Ingots manufactured through steel melting by low quality induction furnaces	Low quality ingots leading to low quality TMT bars
 Ingots are reheated in coal furnace and then fed to rolling mill	Very high carbon foot-print and inconsistency in length, width and section weight of TMT bars
 Manufactured in semi-automatic/manual mills	Inconsistent section weights leading to miscalculation of construction costs & wastage
 Manufactured via low quality TMT box	Low grade TMT bars
 No RO purifier used	TMT bars with rough finish and very low shine which corrodes faster
 Mill rolls are engraved manually	Thin inconsistent rib pattern leading to lower bondability with concrete

QC FLOW CHART

Quality Checkpoints

1. Chemical analysis of Sponge Iron & Pig Iron
2. Chemical analysis of Ferro Alloys & Other Materials
3. Chemical test of liquid metal
4. Temperature check, Chemical analysis and Visual inspection of billets
5. Temperature monitoring while entering rolling mill division
6. Machine cutting and Bundling
7. Section weight analysis
8. Final Physical and Chemical analysis of TMT rebar

Sponge Iron, Pig Iron, Ferro Alloys & Other Materials

Induction Furnace

↓

Ladle

↓

Billet Caster

↓

Rolling Mill

↓

Lall Steels 600 XR

COMPARISON CHART

(BIS Specifications vs Lall Steels)

Mechanical Properties	IS 1786 (MIN.)		LALL STEELS (MIN.)	
	Fe 500	Fe 600	Fe 500	600 XR
0.2 Percent Yield Stress - YS (N/ mm²)	500	600	540	635
Elongation Percent	12	10	24	20
Tensile Strength (N/mm²)	545	660	632	725

Chemical Properties	IS 1786 (MAX.)		LALL STEELS (MAX.)	
	Fe 500	Fe 600	Fe 500	600 XR
% Carbon(C)	0.300	0.300	0.180	0.190
% Sulphur(S)	0.055	0.040	0.037	0.034
% Phosphorous(P)	0.055	0.040	0.038	0.035
% Sulphur & Phosphorous	0.105	0.075	0.072	0.065

WEIGHT TOLERANCE

DIAMETER (MM)	CROSS SECTIONAL AREA (MM²)	IS 1786	Lall Steels 600 XR
8	50.3	0.393 - 0.397	0.394
10	78.6	0.614 - 0.620	0.615
12	113.1	0.884 - 0.892	0.886
16	201.2	1.572 - 1.588	1.580
20	314.3	2.458 - 2.482	2.465
25	491.1	3.831 - 3.869	3.841
28	615.8	4.806 - 4.854	4.820
32	804.6	6.278 - 6.342	6.300

SIGNIFICANCE OF XR

XR – Signifies Extra Enhanced Characteristics (X) of Rebar (R) compared to ordinary TMT bars. Our TMT rebars exceed the quality standard norms of IS 1786 ensuring world class quality and increased lifespan of the construction projects which ultimately helps in higher savings for customers. Few characteristics are as below:

LALL STEELS 600 XR LALL STEELS LALL STEELS 600 XR

XS (Extra Strength): Lall Steels 600 XR is made with latest TMT technology leading to considerably high strength compared to ordinary TMT bars

XR (Extra Ribs): We emphasize on more number of ribs per unit length compared to ordinary TMT bars in the market which considerably enhances the bondability with concrete

XT (Extra Tensile): Due to very high purity of raw materials being used while manufacturing of Lall Steels 600 XR, the tensile strength gets considerably enhanced leading to better construction strength compared to ordinary TMT bars

XCR (Extra Corrosion Resistance): Our TMT rebars are highly corrosion resistant due to proper alloying, usage of highly pure raw materials and RO filtered water

XFR (Extra Fire Resistance): Lall Steels 600 XR provides more protection from fire due to the advance TMT technologies being used for manufacturing. Wherein ordinary TMT bars start losing their mechanical strength around 250°C; Lall Steels could withstand temperatures up to 600°C when encased within concrete

XF (Extra Flexibility): Our TMT rebars provide better flexibility for enhanced durability of construction

XER (Extra Earthquake Resistance): Our TMT rebars make construction projects highly resistant to earthquake

XB (Extra Bondability): With very high bonding strength, Lall Steels 600 XR provide enhanced micro level structural integrity, making them top choice for construction projects

XW (Extra Weldability): Lall Steels 600 XR exhibit better weldability due to enhanced purity of steel and low carbon content (<0.25%)

XCE (Extra Cost Effective): Less usage required compared to ordinary TMT bars; resulting in considerable amount of savings

XB (Extra Bendability): Lall Steels 600 XR is known for it better bendability. The rebar can be bent to the exact angle desired by the design around mandrels unlike ordinary bars

OUR PRODUCTS

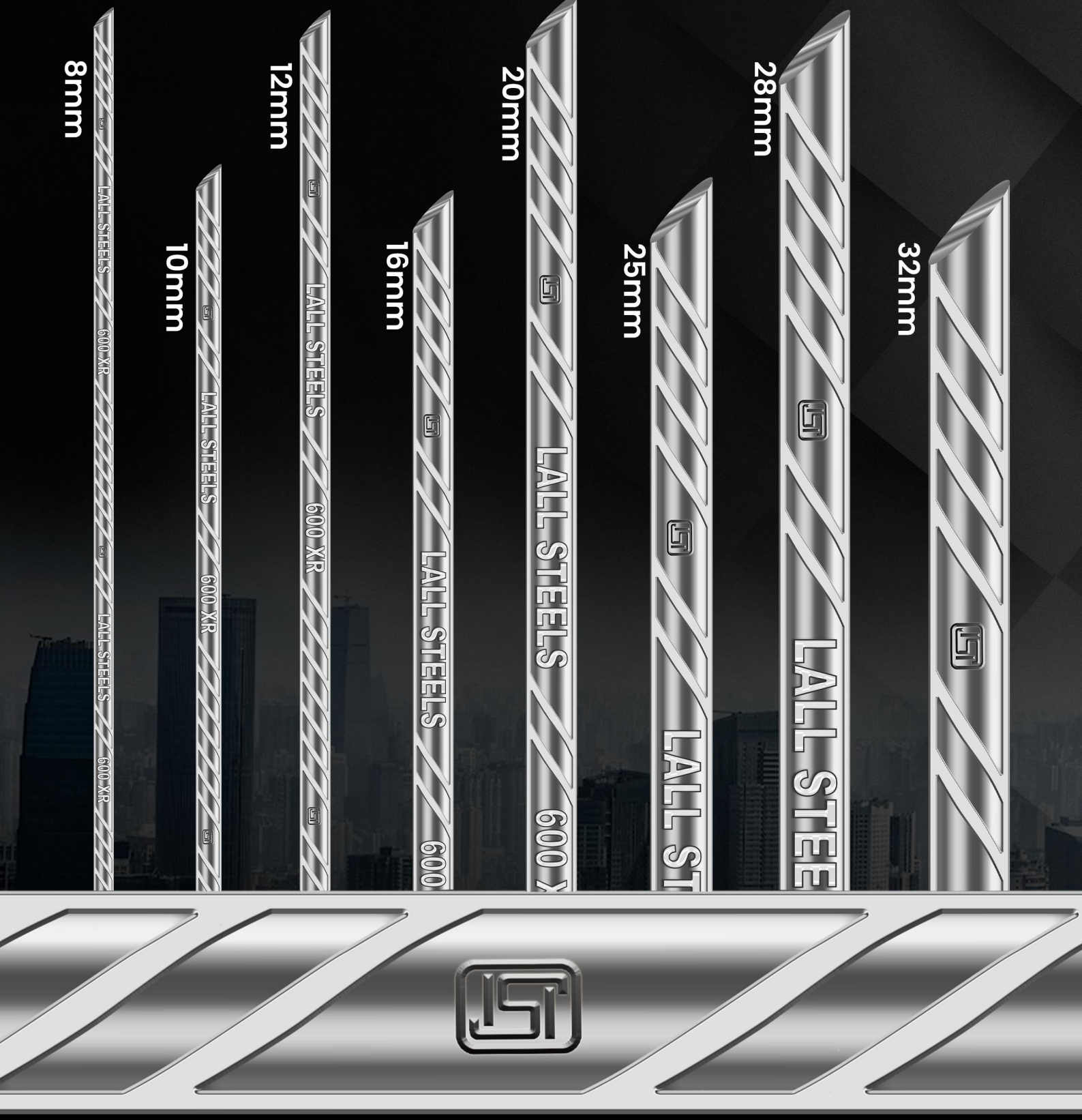
Billet

Lall Steels 600 XR

Rod In Coil

Wire

LALL STEELS 600 XR



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