

WORLD-CLASS

PLATES

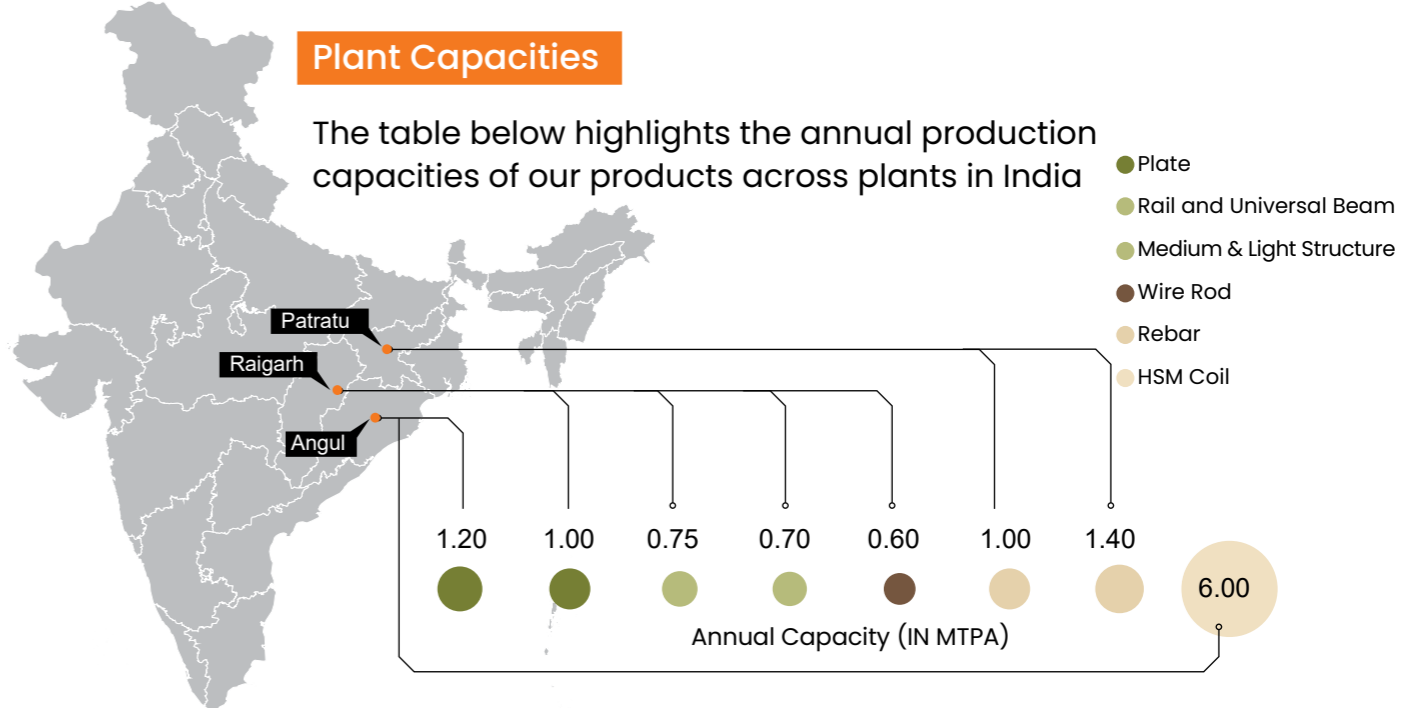
ENGINEERED FOR EXCELLENCE

JINDAL 
STEEL



About Jindal Steel

Jindal Steel is one of India's foremost integrated steel producers, renowned for its scale, efficiency, and commitment to excellence. Operating on a robust mine-to-metal model, the company leverages captive resources, advanced manufacturing capabilities, and a global distribution network to deliver high-performance steel solutions. With an investment footprint exceeding USD 12 billion, Jindal Steel runs state-of-the-art facilities in Angul, Raigarh, and Patratu, and maintains strategic operations across India and Africa. Its diversified and future-ready product portfolio underpins core sectors such as infrastructure, construction, and manufacturing, powering progress through strength and sustainability.



Downstream Facilities

Line	Production Capacity (Million Ton Per Annum)	Thickness Range (mm)	Width Range (mm)
Pickling 1	0.60	1.0 – 6.0	700 – 1700
Pickling 2	0.60	1.0 – 6.0	700 – 1700
HRSPM	0.50	1.0 – 6.0	700 – 1700
CR Mill 1	0.20	0.12 – 3.0	900 – 1500
CR Mill 2	0.40	0.18 – 2.5	800 – 1650
GGL 1	0.20	0.12 – 1.4	800 – 1350
GGL 2	0.40	0.12 – 1.4	800 – 1350
CCL 1	0.18	0.12 – 1.4	800 – 1350

Angul Integrated Steel Plant

Jindal Steel's 6 MTPA integrated steel plant at Angul is the biggest steel plant in Odisha with following production facilities in the complex:

India's largest Blast Furnace volume of 4544 m ³	Blast Furnace 5499 m ³ (4.6 MTPA)	5 MTPA Sinter plant	India's largest 1.88 MTPA DRI plant producing steel on fully indigenous raw material
1.0 MTPA Coke Oven Plant	World's largest Coal Gasification Plant (CGP) for steel making producing syngas from domestic high ash thermal coal	6 MTPA Steel Melting Shop	of India's largest two 250 MT BOF
1.2 MTPA Plate Mill producing plates up to 5 meter wide	810 MW Captive Power Plant	6 MTPA HSM Coil Plant	6 MTPA CRM Plant



Raigarh Integrated Steel Plant

Jindal Steel's 3.6 MTPA integrated steel plant at Raigarh, Chhattisgarh with following production facilities:

2 Blast furnaces with capacity of 0.42 MTPA & 1.25 MTPA	2.5 MTPA Sinter Plant	3.6 MTPA steel melting shop	1.0 MTPA plate cum coil mill producing plates up to 3.5 meter wide and coils up to 3.0 meter wide
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Angul Plate Mill Unique Features

- 1** High quality steel-integration from raw material to final product
- 2** Wide product range-all supply conditions covering all dimensional range
- 3** Close dimensional accuracy
- 4** Consistent properties across cross section
- 5** Excellent table top flatness for stringent applications & processing
- 6** No buckling & warping issues during plate processing
- 7** Superior hardness
- 8** High corrosion, abrasion & wear resistance products
- 9** Better weldability & improved toughness
- 10** Wide application - from general engg. to defence with critical application
- 11** Compliance with international standards -ASTM DIN, ABS, API, JIS, LRS, DNV etc.

Product Range

Dimension (in mm)	As Rolled	Furnace Normalised	Quenched & Tempered
Thickness	6 - 250	6 - 200	6 - 200
Width	1500-4800	1500-4800	1500-4800
Length	6000-19000	6000-19000	6000-19000

* Maximum Slab Weight - 30 MT

Technology Details

Equipment	Make
5 Meter Wide Plate Mill	Primetals Technologies Limited
Reheating Furnace	Fives Stein France -280 MT/Hr.
Roll Shop	TENOVA Pomini Italy
Online Ultrasonic Testing Machine	GE Inspection Technologies Germany
Robotic Universal Testing Machine	Zwick Roell, Germany
Impact Testing Machine & Hardness Testers	Zwick Roell, Germany
Ultrasonic Testing Machine	GE Technology
Normalizing Furnace, Quenching & Tempering Machine	LOI Therm Process, Germany & DONGBO Thermal & Technology Co., Ltd. - China
Plate Leveller	SPCO Japan

Benefits Of Leading Technology

Technology	Benefits
Automatic gauge control	Accurate dimensions
Work roll bending and shifting equipment	Increases profile and flatness control range
Smart crown facility	Better flatness
Plan view rolling	Proper cross section and shape to ensure plate rectangularity
Thermo-mechanical controlled rolling & MULTIPIC (Multi purpose interrupted cooling) process	For producing high-tensile steel plates with high and good weldability for all major structural applications
Double side trim shear	For trimming plates with tighter tolerances
Slitting shear	Center slitting
Dividing shear	Sampling & cut to length plates
Heat treatment facility	For normalizing, austenitizing, quenching and tempering
On-line ultrasonic flaw detection system	Automatic inspection and evaluation of the body of the plates

Metallurgy of Plate Rolling

Depending on the application, rolling techniques like as-rolled, normalized rolled, thermo mechanical controlled process are adopted. These plates can further be processed in heat treatment (normalizing and quenching & tempering) for improving the mechanical properties suiting the end applications.

As Rolled

As rolled is a rolling procedure in which the final deformation is carried out in the austenitic region. General grades of steel plates are processed using this technique.

Normalized Rolled

Normalized rolling is a rolling procedure in which the final deformation is carried out above the Ar3 i.e. in the austenitic region equivalent to the normalizing temperature range. The normalized rolled plates offer properties with improved mechanical properties like ductility, impact toughness etc. The mechanical properties are further retained even after normalizing of these plates

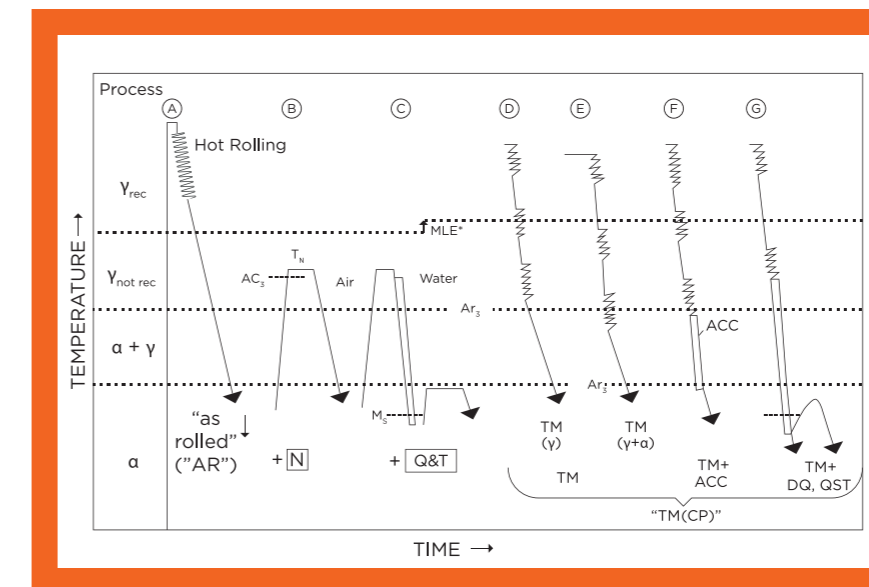


Fig.1 Rolling Techniques and Heat Treatment Process

Thermo-Mechanical Control Process

Thermo Mechanical Control Process (TMCP) is a new generation rolling process for producing fine grain steel by rolling the steel plates in recrystallization and non-recrystallization region of austenite and for some applications in the dual phase region of austenite & ferrite and then using high rate (accelerated) cooling. A wide range of TMCP plates can be processed by controlling the rolling and the cooling strategies like air cooling & accelerated cooling. The steel slabs are first homogenized in the reheating furnace for dissolution of micro-alloys and to form a homogenized coarse austenite with a defined drop out temperature.

The rolling is split into two phases, one in the recrystallized austenite and another in the non-recrystallized austenite. In between the two phases the intermediate plate stock is allowed to oscillate in the roller table prior to achieve the recrystallization stop temperature. The final deformation & rolling sequences are given in the non-recrystallized phase for achieving favorable properties. The thermo-mechanical rolling is followed with accelerated cooling or air cooling depending on the service property requirements. TMCP plate helps in achieving high strength, high toughness with lower carbon equivalent

property requirements. TMCP plate helps in achieving high strength, high toughness with lower carbon equivalent.

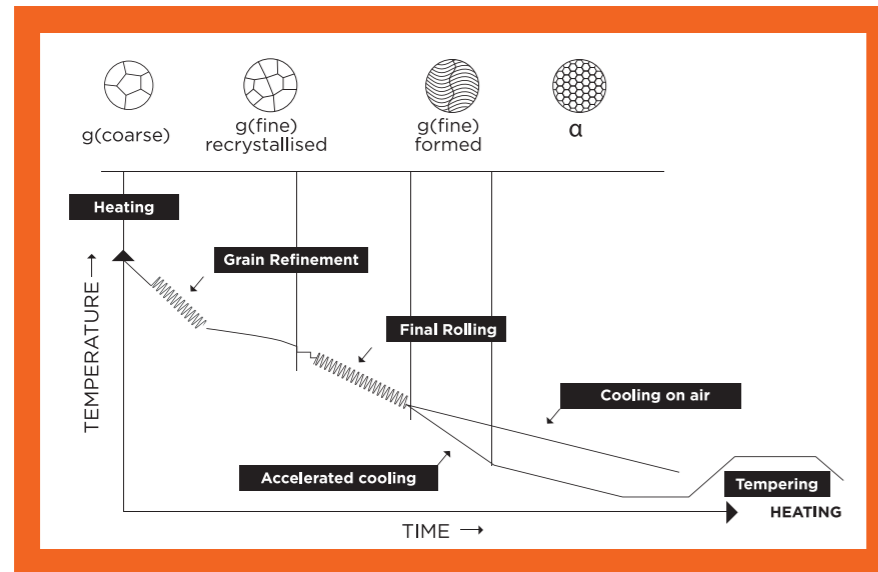


Fig. 2 Thermo-Mechanical Rolling

Thermo-Mechanical Controlled Rolling With Direct Quenching & Self Tempering

A combination of thermo-mechanical controlled rolling and a very high rate of cooling is known as direct quenching. Direct quenching is an online cooling technique (MULPIC) that helps in achieving very high cooling rates to substitute quenched and tempered steel plates.

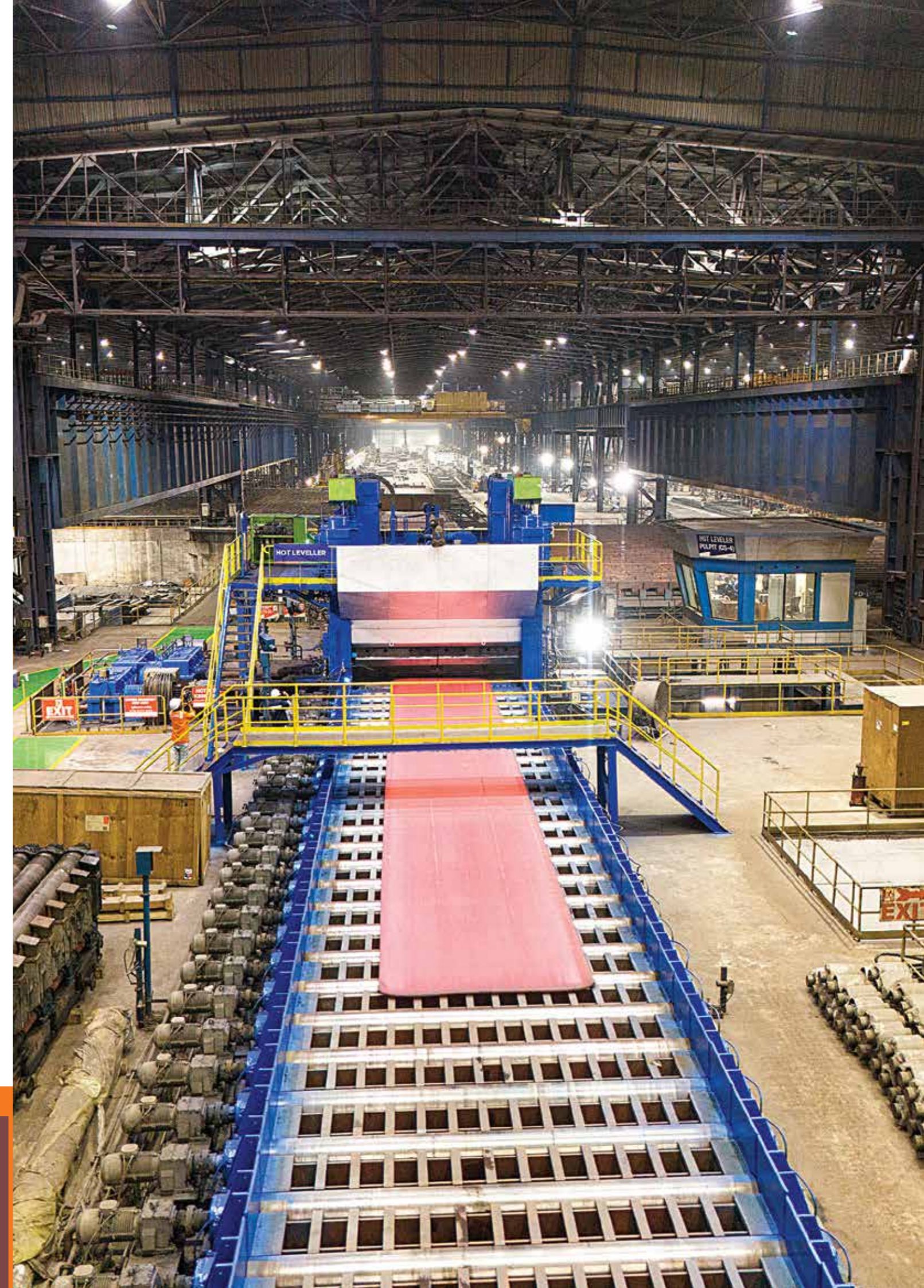
Depending on critical applications, the unit also has advanced mathematical models for performing quenching as well as self-tempering. The self-tempering helps in improving ductility and impact toughness.

Furnace Normalized

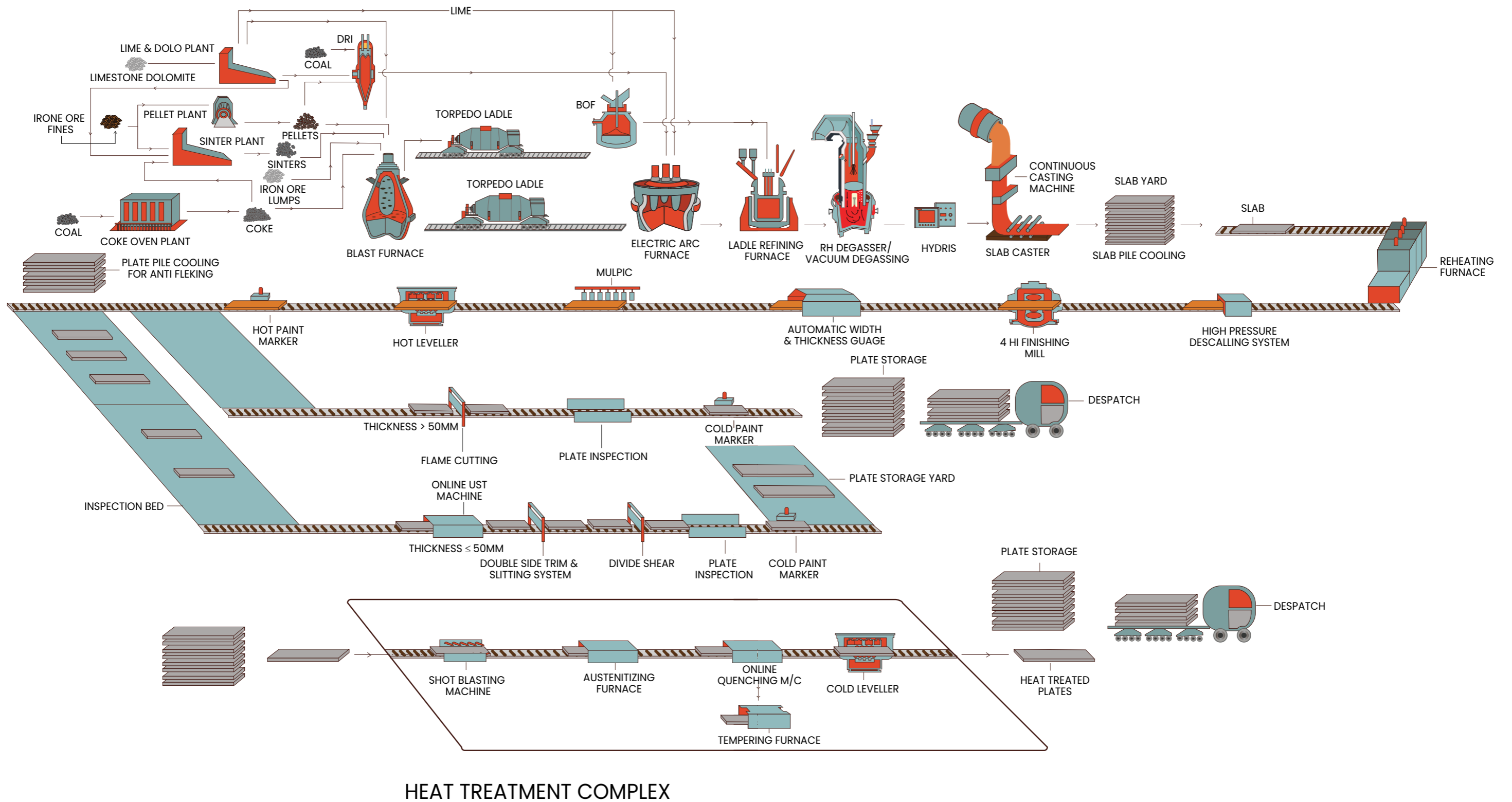
Furnace Normalizing is a heat treatment procedure adopted to improve the mechanical properties of rolled steel plates. The principle of furnace normalizing is heating the steel plates above A_{r3} temperature (approx. 910°C), soaking at that temperature and then allowing it to cool in still air. This process helps in reducing the internal stresses, microstructural bonding, in refining the grains to produce fine grain and homogeneous micro structures. The normalized plates offer improved ductility, fine grained microstructures, and excellent impact toughness.

Quenching (Hardening) & Tempering

Quenching is a heat treatment process of heating the steel plates above A_{r3} (approx. 910°C), soaking for a stipulated duration at a very high rate of cooling. The Quenched steel plates are very hard, low on ductility & toughness. The steel plates are further heat treated in a furnace in a wide range of temperature viz. 0°C to 700°C to produce steel plates with desired properties. The tempering is done to improve the ductility, impact toughness and achieving desired hardness.

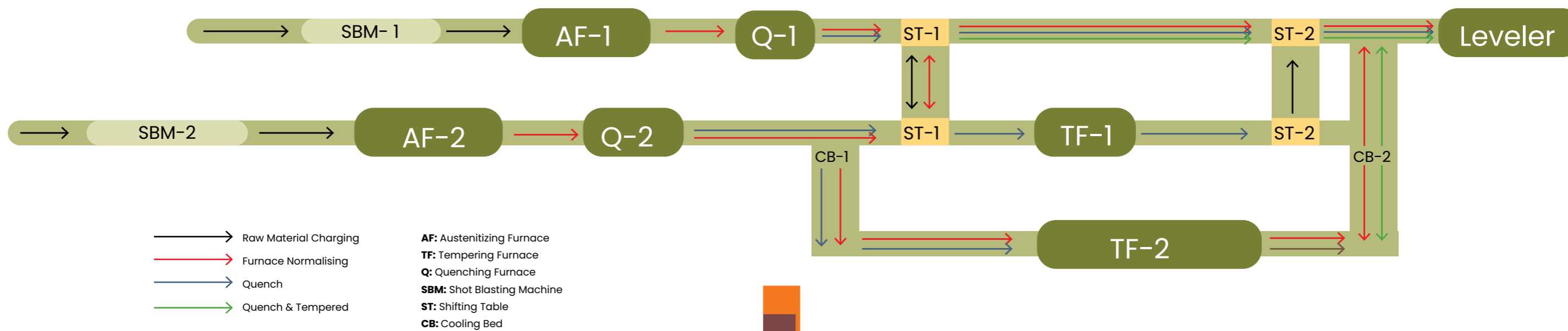


Process flow chart- Angul





Angul Heat Treatment Complex



Facilities of World Class Angul Plate Mill

Digital Reheating Furnace

The double row walking beam type digital furnace with a capacity of 280MT/hr, reduces the excess scale formation. The furnace is split into different control zones for uniform heat transfer through homogeneous heating & elimination of hot spots.

Rolling Mill

The 4-Hi reversible rolling mill along with cross rolling facilities has a roll separating force of 10,000 tonnes. This helps in high shape factor rolling and reduces the internal discontinuities.

Thermo-Mechanical Controlled Rolling & Accelerated Cooling

Thermo-mechanical control process is a rolling process for producing fine grain steel applications in the dual phase region of austenite & ferrite and then using high rate (accelerated) cooling. Mill has Multi-Purpose Interrupted Cooling (MULPIC) with features of accelerated cooling, direct quenching (DQ) & quenching with self-tempering (QST) facilities. Combination of controlled rolling and accelerated cooling helps in producing high tensile steel plates with lower carbon equivalent with targeted properties, microstructures and excellent surface finish.

Hot Leveller

The hot leveller with a capacity of 4,000 tonnes, provides excellent flatness & residual stress free plates. A plastification ratio of up to 80% can be offered depending on the tensile strength and thickness. The unit has automatic gap set up and shape system to ensure a high level of flatness. Residual stress free plates can be produced with most powerful leveller with a capacity of levelling heavy plates up to 100mm thickness.

Shearing Units

Online shearing units in the mill can shear plates up to 50 mm thickness. With the help of double side trim shear, plates are supplied in trimmed and ready-to-use condition with tighter tolerance. Slitting shear on the other hand is used for central slitting whereas dividing shear helps in sampling and final cut to length of plates.

Ultrasonic Testing

The 102 probes of machine ensures accurate examination of all flaws. As a result, on-line inspection of up to 50 mm covering 100% of the plate body and edges is done. The accuracy of this machine is such that a flat bottom hole of 2mm diameter can be detected. For thickness beyond 50mm, manual ultra-sonic testing shall be performed through trolley mounted multi probe testing machine.

Heat Treatment

The mill is equipped with heat treatment facility with normalizing, austenitizing, quenching and tempering furnaces for achieving the desired texture of the steel plates. The plates are shot blasted before heat treatment and an inert atmosphere is maintained in the furnaces with indirect radiant type heating ensuring no scale formation on the surface of the plate.

Marking and Traceability

Equipped with hot paint marking, cold paint marking & stamping for unique and permanent identification. This ensures traceability right from the heat making stage to the finished product.

High Pressure Descaler

In order to remove the scale generated during the reheating of slabs in reheating furnace a descaler unit is installed before the rolling mill. High pressure water jet with 200 bar pressure is used to clean the surface of the slab so that no scale is adhered & rolling is smooth without embedded scale.

Vacuum Degassing Facility

Once the steel is made with the desired composition in ladle refining furnace, some amount of gaseous elements such as Hydrogen, Nitrogen & Oxygen are removed by using vacuum degassing method. Vacuum degassing method uses the maximum bar pressure for approx. fifteen minutes for minimising Nitrogen, Hydrogen and Oxygen remains in steel before it is cast.

Heat Treatment Furnace Capacity - Angul

Jindal Steel has heat treatment roller hearth for normalizing of plates in thicknesses range from 6 to 200 mm.

The mill is equipped with heat treatment facility with normalizing, austenitizing, quenching and tempering furnace for achieving the desired properties in plates. The plates are shot blasted before heat treatment and an inert atmosphere is maintained in the furnaces with indirect radiant type heating to ensure that no scales are formed on the surface of the plate. Heat treatment furnace consists of 4 roller hearth furnaces for austenitizing, normalizing and tempering and continuous quench. The austenitizing furnace is heated under nitrogen atmosphere by in-direct heating via radiant tubes. The tempering furnace is open fired. Roller table quenching machine with cooling rate upto 50° C/sec, has a make of LOI Therm Process, Germany & DONGBO Thermal & Technology Co. Ltd., China

Normalizing, Quenching and Tempering

Process Capability

Equipment	Entry Temperature	Exit Temperature(°C)
Normalizing/Austenitizing Furnace	Ambient	850-950
Quenching Machine	Above AC3	Ambient
Tempering Furnace	Ambient	250-750

Plates Heat Treatment Dimensional Capability

Equipment	Maker	Thickness Range(mm)	Width Range (mm)	Length Range (mm)	Capacity (Tons/Annum)
Normalizing	LOI	8-190	1500-4800	6000-19000	1,25,000
Quenching		8-100	1500-4800	6000-19000	62,500
Tempering		8-100	1500-4800	6000-19000	1,37,500
Austenitizing, Normalizing, Quenching	DONGBO	6 -200	1450-3600	3000-18000	2,50,000
Tempering		6 -200	1450-3600	3000-12000	1,40,000

Plate Leveller

4 High Reversible Plate Leveller

Jindal Steel has state-of-the-art 4th generation, 4 high reversible plate leveller supplied by JP Steel Plantech Co. (SPCO)-Japan. It is one of the largest and the most sophisticated levellers of its kind in the world. A plate leveller has a capability of being able to keep a roll gap constant even when the loads applied during levelling vary, by means of 4 hydraulic main cylinders having a function of setting the roll gap (a spacing between the upper and lower levelling rolls) and a dynamic function of compensating a vertical deflection (vertical extension of the housing).

Dimension	Range
Levelling range	Thickness: 5 - 80 mm Width :1500 - 4800 mm Length : 6000 - 19000 mm
Yield stress range	200 - 1400 MPa
Plate temperature at levelling	R. T- 900°C
Levelling speed/Number of pass	16-40 m/min/l-7 Pass
Levelling roll lift	400 mm
Levelling force at over 5200 mm width	5400 ton tilting levelling 7500 ton parallel levelling

Support Roll

These rolls are installed at both entry and delivery side of the leveller to transfer the plate from entry roller table to levelling rolls and from levelling rolls to delivery roller table.

Top Roll Intermesh

Both entry and delivery levelling roll intermeshes are adjusted by these devices independently and also the tilting amount is adjusted by the difference between entry and delivery intermesh.

Dynamic Crowning Control Device

Dynamic crowning control device is provided to compensate frame bending deflection and compression deflection of rolls for preventing intermesh difference along strip width. Linear sensors for detection of crowning cylinder position are installed inside of crowning cylinder.

Air Blow System

Heavy levelling operation produces much scale peeled up from plate being levelled. Air blow system will take out scale from plate surface to minimize dent marks on the plate.

Dust Collecting System

The scale blown off by air blow system falls at the work side of leveller. Dust collecting system collect floating small scales in the air thus ensuring environment friendly atmosphere.

Cold Leveller

Cold leveller is a next generation (4th integration type) for producing table top plate with superior flatness. Higher level of flatness can be achieved even in ultra-high strength plates up to 1500 Mpa.

Angul Plate Mill Product Size Range

Thickness (mm)	Dimension (T X W)														
	Width (mm)														
	1500	1800	2000	2200	2500	2800	3000	3200	3500	3800	4000	4200	4500	4600	4800
6															
10															
12															
14															
16															
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105															
110															
115															
120															
125															
130															
135															
140															
145															
150															

Range is available
 Range is not available

Angul Plate Mill Product Dimensional Tolerance

A. Thickness Tolerance

EN 10029 Tolerance On Nominal Thickness								
Nominal Thickness (mm)	class A		Class B		Class C		Class D	
	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper
5≤t<8	-0.4	+0.8	-0.3	+0.9	0	+12	-0.6	+0.6
8≤t<15	-0.5	+0.9	-0.3	+11	0	+14	-0.7	+0.7
15≤t<25	-0.6	+1.0	-0.3	+13	0	+16	-0.8	+0.8
25≤t<40	-0.7	+1.3	-0.3	+17	0	+2.0	-1.0	+1.0
40≤t<80	-0.9	+1.7	-0.3	+23	0	+26	-1.3	+1.3
80≤t<150	-1.1	+2.1	-0.3	+2.9	0	+3.2	-1.6	+1.6

Class A: For minus thickness tolerance depending on the nominal thickness

Class B : For a fixed minus tolerance of 0.3 mm

Class C: For a fixed minus tolerance of 0.0 mm

Class D: for symmetrical tolerance

B. Width Tolerance

Nominal Thickness (mm)	Trimmed Edge Condition				
	Width Range (mm)				
	1501-2500	2501-3000	3001-3500	3501-4000	4001-4500
	Width Tol.	Width Tol.	Width Tol.	Width Tol.	Width Tol.
5.0-8.0	+20/-0	+20/-0	+20/-0	+20/-0	+20/-0
8.1-10	+20/-0	+20/-0	+20/-0	+20/-0	+20/-0
10.1-12	+20/-0	+20/-0	+20/-0	+20/-0	+20/-0
12.1-16	+15/-0	+15/-0	+15/-0	+15/-0	+15/-0
16.1-20	+15/-0	+15/-0	+15/-0	+15/-0	+15/-0
20.1-25	+15/-0	+15/-0	+15/-0	+15/-0	+15/-0
25.1-40	+15/-0	+15/-0	+15/-0	+15/-0	+15/-0
40.1-60	+20/-0	+20/-0	+20/-0	+20/-0	+20/-0
60.1-80	+20/-0	+20/-0	+20/-0	+20/-0	+20/-0
80.1-100	+20/-0	+20/-0	+20/-0	+20/-0	+20/-0
>100-150	+20/-0	+20/-0	+20/-0	+20/-0	+20/-0

Width Tolerance of -0/+10 mm can be supplied on case to case basis

C. Length Tolerance

Nominal Length (mm)	Length Tol. (mm)		Nominal Length (mm)	Length Tol. (mm)	
	Lower	Upper		Lower	Upper
1<4000	0	40	8000< ≤10000	0	50
4000< ≤6000	0	40	10000< ≤15000	0	75
6000< ≤8000	0	40	15000< ≤20000	0	100



Process Flow Chart- Raigarh

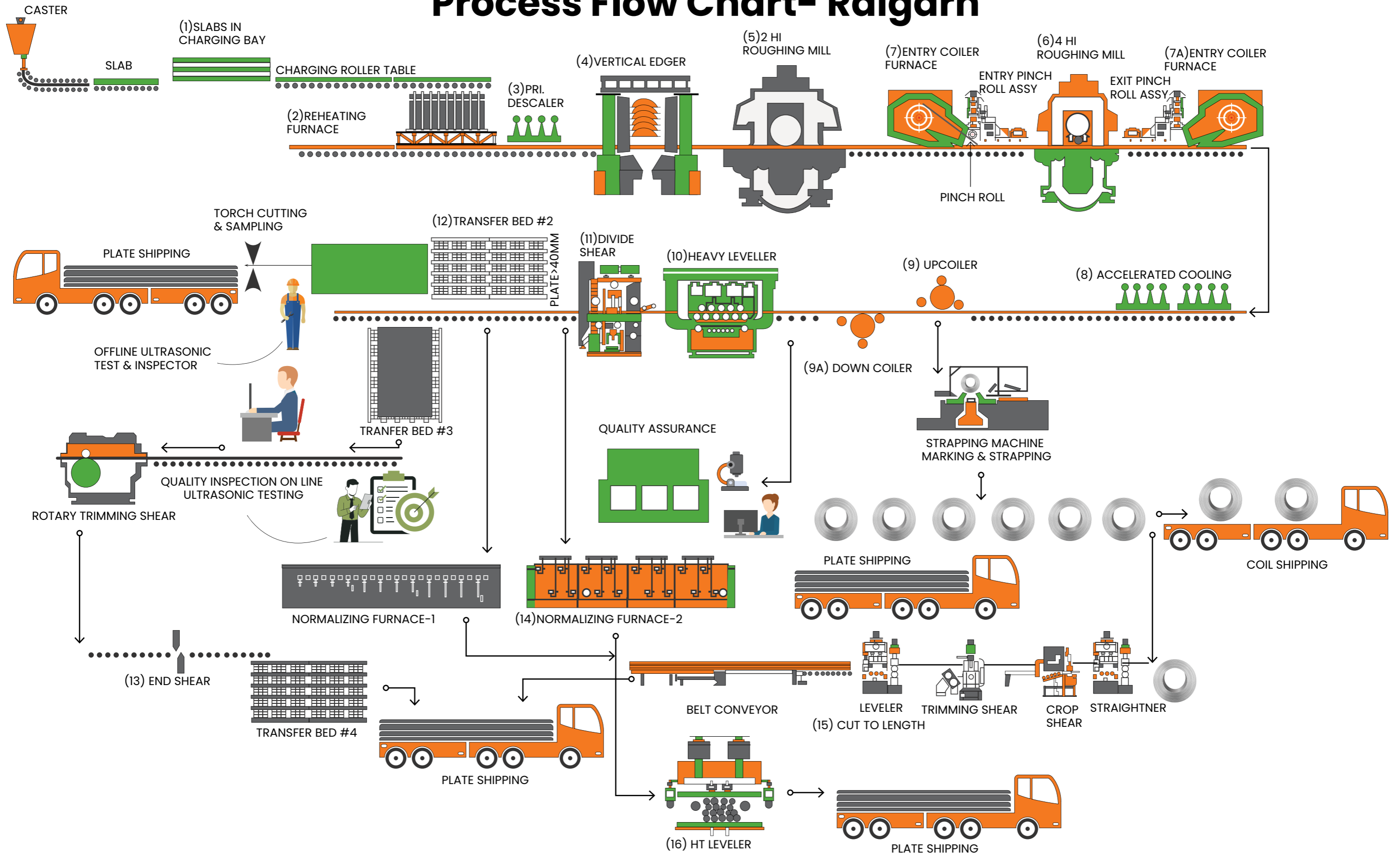




Plate-cum-Coil Mill at Raigarh

Jindal Steel Plate-cum-Coil Mill at Raigarh (Chhattisgarh) produces plates up to 3500mm wide and coils upto 3000mm wide in various steel grades as per Indian and international standards.

Raigarh Plate-cum-Coil mill produces plates and coils complying to IS 2062 specifications upto E450 grades besides a wide range of international standards and steel grades as per EN, DIN, JIS, ASTM, API etc.

Product Range Raigarh

Discrete Plate

Dimension	Range (mm)
Thickness	16-100
Width	1500-3500
Length	6000-13500

Cut To Length

Dimension	Range (mm)
Thickness	6-25
Width	1500-2500
Length	6000-12500

Hot Rolled Coils

Dimension	Range (mm)
Thickness	6-25
Width	1500-3000
Coil ID/OD	Change to 730 min. / 2000 max

Heat Treatment Furnace Capacity - Raigarh

Jindal Steel dual fired normalizing furnace at Raigarh plate mill, Chhattisgarh is supplied by M/s seco WARWICK, Poland. Capability of heat treatment furnace is as mentioned below:

Capability

Dimension	Range (mm)
Thickness	6-100
Width	1500 - 3500
Length	6000 -12500

Parameter	Range
Capacity	200 ton's per batch
Operating temperature range	900-950°C
Maximum furnace temperature	1000°C

New Heat Treatment Facility, Raigarh

New Heat Treatment Facility, Raigarh				
Process Capability				
Equipment	Entry Temperature (°C)		Exit Temperature (°C)	
Normalizing / Austenitizing Furnace	Ambient		850-950	
Quenching	Above AC3		Ambient	
Plates Heat Treatment Dimensional Capability				
Equipment	Thickness Range (mm)	Width Range (mm)	Length Range (mm)	Capacity (Tons/Annum)
Normalizing	6-100	1450-3600	4000-13,000	110000
Hardening (Austenitizing)	6-100	3,600	4000-13,000	140000
Quenching	6-100	3,600	4000-13,000	250000

Raigarh Coil Product Mix

Capability

Typical Dimension (TxW)						
Thickness (mm)	Width (mm)					
	1500	1800	2000	2200	2500	3000
5						
6						
7						
8						
10						
12						
14						
16						
18						
20						
22						
25						

• Thickness & width range may vary for some grades

Coil Weight

Maximum Coil Weight (Mt)					
Thickness (mm)	Width (mm)				
	1500	2000	2500	2800	3000
5					
6					
7					
8					
10					
12					
14					
16					
18					
20					
22					
25					

• Coil weight may vary for some grades

Range available
 Range not available

Raigarh Plate Mill Product Size Range

Thickness (mm)	Dimension (T x W)								
	Width (mm)								
	1500	1800	2000	2200	2500	2800	3000	3200	3500
5									
6									
7									
8									
10									
12									
14									
16									
18									
20									
22									
25									
28									
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32									
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36									
40									
45									
50									
56									
60									
63									
70									
80									
90									
100									

Range available
 Range not available

Raigarh Plate Cum Coil Mill Product Dimensional Tolerance

A. Thickness Tolerance - Plate & Coil

Thickness Range (mm)	Plate		Coil	
	Lower	Upper	Lower	Upper
5	-0.3	+0.3	-0.3	+0.3
6-8	-0.3	+0.3	-0.3	+0.3
8.1-12	-0.3	+0.3	-0.3	+0.3
12.1-16	-0.4	+0.4	-0.4	+0.4
16.1-20	-0.5	+0.5	-0.5	+0.5
20.1-25	-0.6	+0.6	-0.4	+0.6
25.1-40	-0.75	+0.75		
40.1-70	-1.0	+1.0		
>70	-1.5	+1.5		

B. Width Tolerance - Plate & Coil

Thickness Range (mm)	Mill Edge Condition		
	* Width Range (mm)		
	Plate		Coil
	1500-2500	2501-3500	1500-2500
	Width tolerance	Width tolerance	Width tolerance
5.0-14.0	-0/+25	-0/+35	-0/+20
14.1-25.0	-0/+35	-0/+35	-0/+20
25.1-100	-0/+35	-0/+50	

• (H.E. and T.E. +30mm in 5 meter each side, *Trimmed edge plate width tolerance -- -0 / +10 mm

C. Length Tolerance - Plate

Thickness (mm)	Length Tolerance (mm)	
	Lower	Upper
5-14	0	30
14.1-40	0	100
>40	0	50



Testing Facilities

Jindal Steel assures its customers of superior and consistent quality plates. Rigorous quality assurance plan and state-of-the-art testing facility ensures compliance to all national and international specifications. Our laboratories and testing facilities are equipped with:

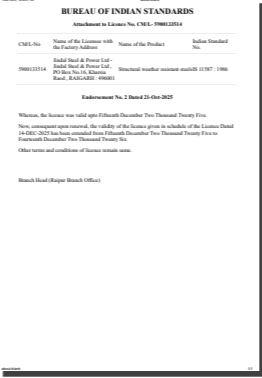
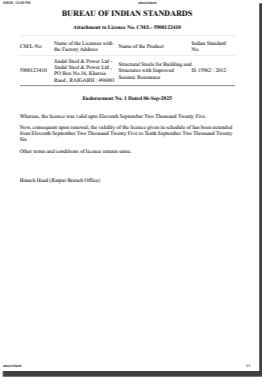
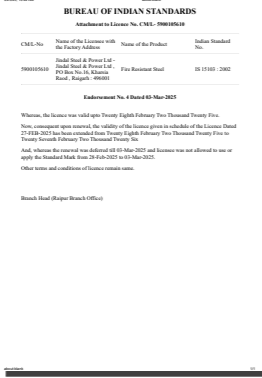
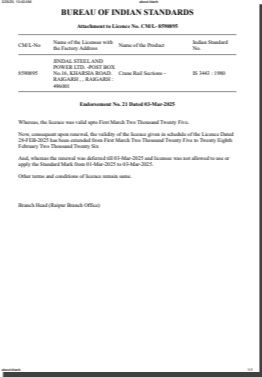
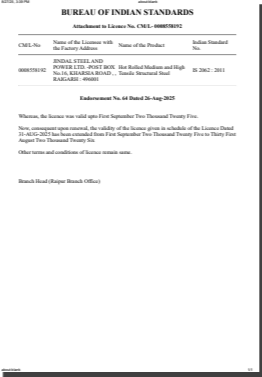
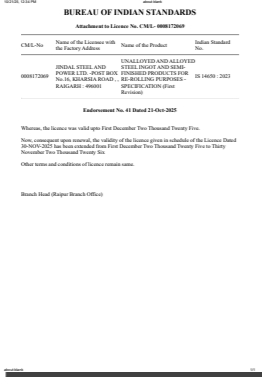
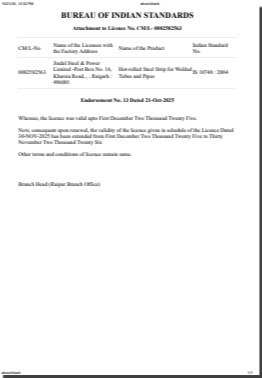
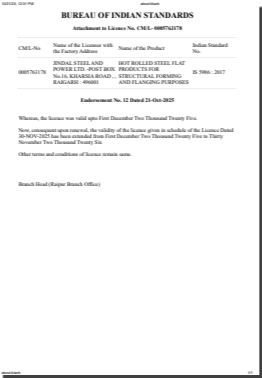
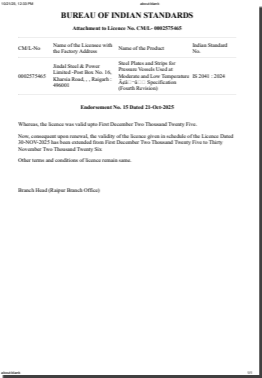
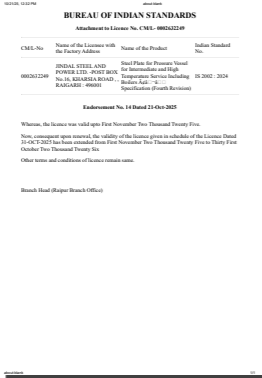
- Optical Emission Spectrometer, Metal Analyzer
- X-Ray Fluorescence & X-Ray Diffraction Analyzer
- LECO analyzers for Carbon/ Sulphur, Oxygen/Nitrogen
- Linder test apparatus for characteristics of iron ore/ pellets.
- Gas Chromatograph
- Robotic Universal Testing Machine 1200kN
- Universal High Temperature tensile testing machine 600KN
- Automatic Impact Testing Machine 750J
- 1000kN Capacity Bend Testing Machine
- Drop Weight Tear Testing (DWTT-100,000J Capacity)
- Multi Probe UT Scanning Device
- Metallurgical Microscope and Image Analyzer
- HIC/NACE testing, SSCC, Deflectometer setting device (4-point bend test)
- Simulation Furnace
- Vicker, Rockwell and Brinell Hardness Testing Machine
- Through Thickness Testing (Z-Test)

Raigarh Plate & Coil Mill

A. ISO



B BIS



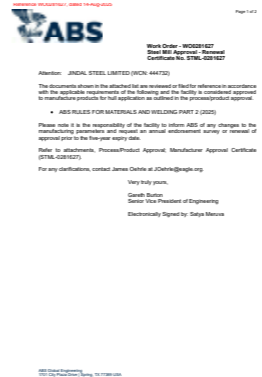
C. EN



D. BOILER & PRESSURE VESSEL



E. SHIPBUILDING





Applications

Jindal Steel heavy plates and coils find wide application across verticals due to its ultra wide range and grades produced using state of the art technology in Angul and Raigarh facilities.



Construction / General Engineering

Applications

Jindal Steel manufactures plates for bridges, dams, highways, buildings, civil structures and for industrial fabrication work

Specifications

Standard	Grade	Max Thickness (mm)
IS 2062	E 250, E 275, E350 (with Cu & without Cu)	220
	E 410 (with Cu & without Cu)	150
	E450 (with Cu & without Cu)	120
	E 550	50
EN 10025	S 235, S 275, S 355 with CE certification	220
	S 420N/NL	120
	S 460N/NL	80
ASTM	A36	100
	A283/A285	100
	A588	100
ASTM	A572 Gr. 50	100
	A572 Gr. 55	64
	A572 Gr. 60	64
	A572 Gr. 65	50
ASTM	A656 Gr. 50	50
	A656 Gr 60	40
	A656 Gr. 70	25
	A656 Gr. 80	25
ASTM	A709	100

Mechanical Properties

- High strength and toughness
- Good weldability
- Corrosion and fatigue resistance
- Tight dimensional tolerances

Supply Conditions

- As rolled
- Normalised rolled
- Thermo mechanically controlled process
- Furnace normalised



Wind Mill

Applications

Jindal Steel manufactures plates for windmills subjected to high wind speeds and buckling loads due to blades rotation and is used for manufacturing windmill tower & supporting structure for generator.

Specifications

Standard	Grade	Max Thickness (mm)
EN 10025	S235	220
	S275, S355 with CE	190
	S355NL/ML	150
	S420NL/ML	120
	S460 NL/ML	120
	S690 QL	200
API & EN for offshore application	API 2H, API 2W, API 2Y, S355MLO/NLO, S420MLO, S420QLO, S460MLO, S460QLO	100

* Supply conditions will be confirmed at the enquiry stage.

Mechanical Properties

- High strength and toughness
- Good weldability & formability
- Corrosion and fatigue resistance
- Weld bead bend test on requirement
- Through thickness properties

Supply Conditions

- As rolled
- Normalised rolled
- Thermo mechanically controlled process
- Quenched and tempered
- Furnace normalised



Boiler and Pressure Vessel

Applications

Jindal Steel manufactures plates for boilers and pressure vessels for super critical applications, low temperature, moderate temperature, high temperature, & ultra-high temperature application.

Specifications

Standard	Grade	Max Thickness (mm)
IS 2041	R220/R260/R355 with IBR	150
IS 2002	Grade 1, 2, 3 with IBR	150
ASTM	A 537 Class 1	150
ASTM	A387 Grade 22/12/11 Class 1 and 2	100
ASTM	A 516 Gr60/65/70 (NON HIC & HIC) with IBR	150
EN 10028	P235GH/P295GH/P355GH	160
EN 10028	P355M/ML1/ML2	100
	P420M/ML1/ML2	
	P460M/ML1/ML2	
	16MO3	
ASTM	A 515 Gr. 60/65/70 with IBR	150
ASTM	A 537 Class 2	150
	533 GR B CL3	100
	SA 517 GR B	32
	SA 302 Gr B	100
	SA 299 GR B CL3	150

* Supply conditions will be confirmed at the enquiry stage. Max thickness is due to slab to plate reduction ratio, higher thickness can be provided in customized manner up to 200mm

Mechanical Properties

- Excellent weldability with low carbon equivalent
- Low S&P, NACE & HIC applications
- Through thickness tested plates
- High toughness
- High corrosion resistance
- High creep resistance

Supply Conditions

- As rolled
- Normalised rolled
- Furnace normalised
- Normalised and tempered
- Quenched and tempered



Transportation

Ship Building, Railways & Wagon Builders

Applications

Jindal Steel manufactures plates for the ship building, railways & wagon builders industry which can endure adverse loading conditions, face corrosive environment and low temperature conditions.

Specifications

Standard	Grade	Max Thickness (mm)
ASTM	A131 Gr A/B	100
	A131 Gr D/E	70
	A131 Gr AH32/DH32/EH32	70
	ASTM A131 Gr AH36/DH36/EH36	70
Ship Building Certifications	ABS, DNV, LR, BV, GL, RINA, NKK, IRS (Normal strength and Higher strength)	As per certification
IS 2062	E 250	220
	E 275, E 350 with Cu	190
	E 410 with Cu	150
	E 450 with Cu	120

** Reference Standards: ASTM, IRS, ABS, DNV, GL, NKK, LR, BV, RINA

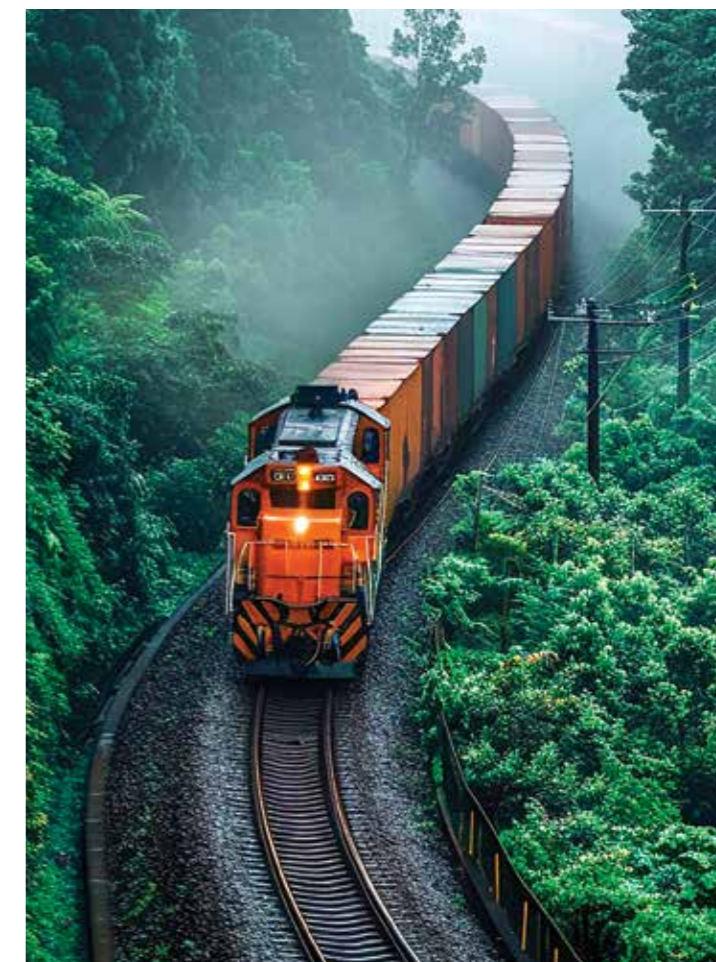
* Supply conditions will be confirmed at the enquiry stage.

Mechanical Properties

- High strength
- Low temperature toughness
- High corrosion resistance
- Excellent fatigue properties
- Tight dimensional tolerances
- Excellent weldability with low carbon equivalent

Supply Conditions

- As rolled
- Normalised rolled
- Thermo mechanically controlled rolled
- Furnace normalised
- Quenched and tempered



Line Pipes and Offshore Platforms

Applications

Jindal Steel manufactures plates as per international standards especially API grade steel for making line pipes for transportation of oil, gas and for offshore applications.

Specifications

Standard	Grade	Max Thickness (mm)
API	B, API 5L X-42M/X-46M/ X-52M/X-56M PSL1 and PSL2	60
	X-60M/X-65M/X-70M PSL1 and PSL2	45
	X-80M PSL1 and PSL2	30
API	X52MS/X56MS/X60MS/ X65MS PSL1 and PSL2	40
API	2W Gr 50/60	80
	2YGR 50/60	80
	2H GR 42/50	110
EN10025	S355+N, S355+M	150
	S420 M	100
	S460 M	80

* Supply conditions will be confirmed at the enquiry stage.

Mechanical Properties

- High strength and toughness
- Low temperature toughness
- Corrosion and fatigue resistance
- Wear and abrasion resistance
- Tight dimensional tolerances

Supply Conditions

- Thermo mechanically controlled process
- Normalised rolled
- Quenched and tempered
- Through thickness test (Z - Test)
- Drop weight tear test (DWTT) and CTOD test
- Impact tested & stringent UT as per requirements



Yellow Goods and Mining Equipment

Applications

Jindal Steel manufactures plates for earth moving equipments and rotary equipment manufacturers. Plates used in yellow goods are subjected to hardrocks, loading bulk materials, shocks, explosive shocks etc.

Jindal Steel abrasion resistant wear plates are supplied in three different levels of abrasion resistance with hardness levels of 400 Brinell, 450 Brinell and 500 Brinell. These plates offer the considerable advantage of providing high strength while offering weight reductions in steel fabrications and find various application as mentioned below:

- Excavator buckets
- Mines and quarrying equipment
- Crushers and Dump truck bodies
- Cranes
- Front loaders
- Forklift trucks
- Booms
- Vehicles chassis, Gear wheels
- Conveyors, Chutes, Wear liners
- Cement plants

Specifications

Standard	Grade	Max Thickness (mm)
ROCKHARD	400	200
	450	150
	500	150
IS 18809	ISAR 400	200
	ISAR 450	150
	ISAR 500	150
	ISAR 550	100
	ISAR 600	100
IS 2062	E275, E350	190
	E410	150
	E450	120
EN10025	E550	50
	S690QL	200
	S890QL	200
	S960QL	200

* Supply conditions will be confirmed at the enquiry stage.

** IS 18809- Max thickness as per BIS is 150mm, higher thickness ROCKHARD i.e. >150mm can be supplied based on enquiry.

Mechanical Properties

- High strength
- High hardness
- High abrasion and wear resistance
- Good weldability

Supply Conditions

- As rolled
- Thermo mechanically controlled process
- Quenched and tempered
- Furnace normalised



Hydro Segment

Applications

Jindal Steel manufactures customized plates for use in dams and hydro applications. Weldable steel with combination of high strength and toughness, with reduced level of Phosphorous, Sulphur, Nitrogen and Oxygen find its applications in Penstock & Hydrogates.

Specifications

Standard	Grade	Max Thickness (mm)
ASTM	A 537 Class I and 2	150
IS 2002	Grade 1, 2, 3	150
ASTM	A 515 Gr. 60/65/70	150
ASTM	517 Grade B	32
	517 Grade E	150
	517 Grade F	65
	517 Grade P	100
	514 Grade Q	150
EN10025	S690QL	200
	S890QL	200
	S960QL	200

* Supply conditions will be confirmed at the enquiry stage.

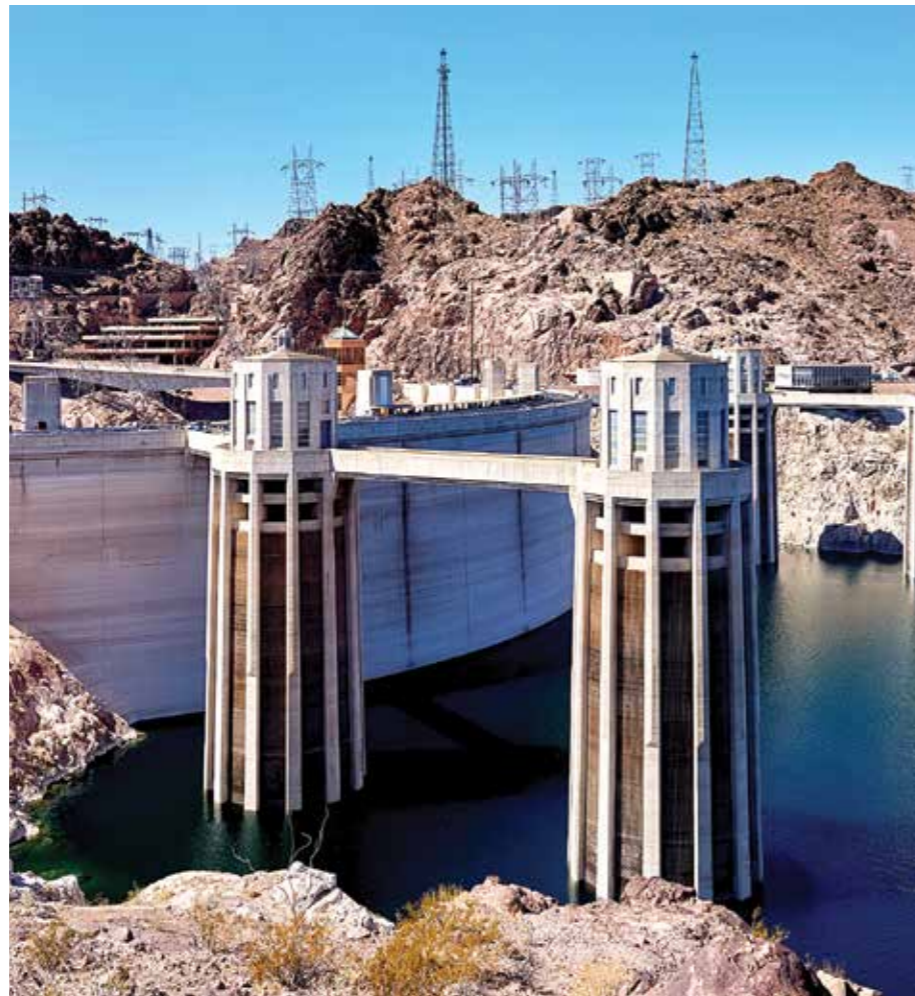
** Higher thickness can be supplied in customised manner with max thickness 200mm, thickness mentioned above is due to slab to plate reduction ration restriction only

Mechanical Properties

- High strength and toughness
- Excellent weldability
- Corrosion and fatigue resistance
- High wear resistance

Supply Conditions

- Normalised rolled
- Quench and tempered
- Furnace normalised



Pre Engineered Buildings

Applications

Jindal Steel manufactures steel plates in various widths for steel buildings leading to faster completion time and shorter project lead time.

Specifications

Standard	Grade	Max Thickness (mm)
IS 2062	E 250	220
	E 275, E 350	190
	E 410	150
	E450	120
EN 10025	S 235	220
	S 275, S 355	190
	A 572 Gr. 50	100
ASTM	A 572 Gr. 55, 60	64

* Supply conditions will be confirmed at the enquiry stage.

Mechanical Properties

- Tight dimensional tolerances
- High strength and toughness
- Good weldability

Supply Conditions

- As rolled
- Normalised rolled
- Thermo mechanically controlled process



Defence Sector

Applications

The plates are fabricated to be assembled in battle tanks, mine protective vehicles, wall structures, protection suits etc. The steel plates are required to have high strength, high toughness, impact resistance, high hardness and anti-ballistic properties to withstand severe conditions in battle fields, land mines and high momentum bullets. Various applications are as mentioned below:

- Armoured Vehicles
- Warships
- Mine Protective Vehicles
- Protective Buildings
- Security Vehicles
- Submarine Building

Metallurgy

Proper alloy design having micro-alloy elements such as Mo, Cr, Ni, B and others are added to achieve desired toughness, strength, hardness and ballistic properties.

Mechanical Properties

- High strength, up to 1,500 MPa tensile strength
- Good low-temperature toughness
- High corrosion resistance
- Good weldability
- NIJ Level-III for anti-ballistic properties



Steel Plates with Fire Resistance Properties

What is Fire Resistance Steel?

Fire - resistant steel is a type of steel that retains a significant portion of its strength when exposed to high temperatures, typically around 550 degrees celsius, for specified periods. In general, steel is considered fire-resistant if it can maintain approximately 60-65% of its strength at room temperature under these elevated heat conditions. The fire-resistant properties are often achieved through specific alloying systems, such as Cr-Mo-V-Nb, which enhance the steel's ability to withstand fire effects.

Applications:

- Mainly used in construction of high rise building, restaurant, hotels etc. where public gathering is more.
- In case of fire, there is a sufficient time to evacuate people from place of fire and rescue work.
- Material strength will with stand higher temperature like 600 degc for 3 hrs maximum.

Standard	Grade	Max Thickness (mm)
IS 15103 (Plates)	FR - Fe 490	100
	FR - Fe 410	100
IS 15103 (Strips)	FR - Fe 490	25
	FR - Fe 410	25

Advantages of Choosing Jindal Steel's Fire Resistant Steel

Parameter	Advantage
Fire Protection Efficiency	Jindal Steel's fire - resistant steel ensures robust fire protection with its base material alone, eliminating the need for external applications
Structural Optimisation	While other methods may increase dead weight, Jindal Steel's solution maintains the structure at an optimum weight, enhancing overall efficiency
Simplified Design and Application	Jindal Steel's fire - resistant steel reduces the need for additional time and work in design and application, streamlining the process compared to other methods
Minimal Maintenance	Unlike other methods requiring frequent upkeep, Jindal Steel's fire-resistant steel demands minimal maintenance, ensuring long-lasting effectiveness
Skill Independence	Jindal Steel's fire resistant steel eliminates the dependence on highly skilled labour at the site, making the end result more accessible and consistent.
Versatility in Shape and Size	Jindal Steel's fire resistant steel presents no limitations on shape, size, aesthetics, or complexity, providing unparalleled flexibility compared to other methods
Environmental Safety	Jindal Steel's fire resistant steel prioritizes environmental safety by avoiding the use of polluting and hazardous materials, unlike other methods.
Cost Efficiency	Jindal Steel's fire resistant steel offers a more stable cost structure, outperforming other methods that see exponential cost increases with higher fire ratings and variables

Jindal Steel Structural Offerings

1. Manufactured in accordance with IS15103 standards. Actual properties are better than minimum specified requirements of code.
2. Designed to endure temperatures of up to 600 degrees celsius for a maximum duration of 3 hours
3. Exhibits a refined crystal structure with reduced Sulphur content.
4. Incorporates micro-alloys such as Cr, Mo, V, Nb, enhancing formability and mechanical properties
5. Well-controlled Carbon equivalent, ensuring excellent weldability
6. Offered in a comprehensive range of sections/profiles produced by Jindal Steel

Chemistry & Mechanical Properties Comparison

Chemical Properties – IS 15103 Requirements and Actual Achievement								
Grade	Designation	% C (Max.)	% Si (Max.)	% Mn (Max.)	% P (Max.)	% S (Max.)	% Cr (Max.)	% Mo
A	Fr-Fe410	0.20	0.40	1.30	0.04	0.04	0.55	0.25-0.35
Jindal Steel	Actual	0.12	0.18	1.06	0.015	0.004	0.12	0.27
B	Fr-Fe490	0.20	0.50	1.50	0.04	0.04	0.55	0.25-0.45
Jindal Steel	Actual	0.12	0.23	1.25	0.007	0.004	0.12	0.28

Comparison with normal strength products like IS 2062 E250 Fe 410 and IS 2062 Fe 490 grade;

1. Addition of Mo and Cr to retain strength during hot condition.
2. No reduction of strength level i.e. 2/3 of specified strength level during fire.
3. Resistance of heat at 600 degc for 3 hours

Mechanical Properties – IS 15103 Requirements and Actual Achievement

Grade	Designation	TS in Mpa Min.	YS in Mpa Min.	YS in Mpa Min.	YS in Mpa Min.	YS in Mpa Min.	% EL at 5.65 Sq.rt aram	Impact At -20 16J Avg.	Specified values of YS at elevated temperature At 300 degc
			<12 mm	12-25 mm	25-40 mm	>40 mm			
A	Fr-Fe410	410	300	280	260	240	21		158 Mpa Min
Jindal Steel	Actual for 70mm thk	462	*	*	*	343	30	203	216-YS 304-TS
B	Fr-Fe490	490	350	330	310	290	18		191 Mpa Min
Jindal Steel	Actual for 70mm thk	504	*	*	*	383	27	151	263-YS 352-TS

YS -Yield strength, TS -Tensile strength, %EL - Elongation

Comparison with normal strength products like IS 2062 E250 Fe 410 and IS 2062 Fe 490 grade;

1. No reduction of strength level i.e. 2/3 of specified strength level during fire.
2. Properties achieved at elevated temperature well above the specified code requirements
3. Resistance of heat at 600 degc for 3 hours



Steel Plate: Abrasive Resistance Products

Data Sheet: 01

Brand Name: ROCKHARD 400

Thickness: 6 mm to 200 mm

Specification

Grade	% C (Max.)	% Mn (Max.)	% P Max.	% S Max.	% Si Max.	% Cr Max.	% Ni Max.	% Mo (Max.)	B Max (Ppm)	% CEV (Max.)
ROKHARD 400	0.25	1.60	0.030	0.010	0.50	0.90	0.50	0.50	50 ppm	0.63

$\%CEV = C + Mn/6 + (Cr+Mo+V)/5 + (Ni+Cu)/15$

The steel is grained refined. Steel may contain grain refining elements like Al, Nb, Ti or in combination. However, %Al: 0.02 minimum with other elements like Nb+V+Ti as 0.15 Max

Grade Name	ROKHARD 400
Hardness level	360 BHN Min

(Typical 360-440 BHN)

Hardness Testing: Brinell hardness according to EN ISO 6506-1, on a milled surface 0.5 – 3 mm below surface. For, $8 \leq t \leq 60$ mm:

Guaranteed core hardness shall be 90% of the guaranteed minimum surface hardness

Typical Values

Typical achievement of Carbon equivalent based on thickness range as per below;

Thickness	Up to 40 mm	>40 mm to 200 mm
ROKHARD 400	0.45%~0.48%	0.55% ~0.60%

- 1) Typical tensile strength (MPa) values (YS, UTS & EL %) for up-to 20 mm as reference purpose only
- 2) Typical CVN impact energy

Grade	YS in MPa (Min)*1	TS in MPa (Min)*	% EL (Min) at *50mm GL	Impact -Toughness Min *2
ROCKHARD 400	1100	1250	12%	25J(avg.) 20J(ind) J at -40 degc

Recommended minimum bending up to 20mm thickness can be provided for reference. >20mm thickness- case to case basis; bend radius is dependent on the direction of bending to rolling direction (T= plate thickness)

Grade	Bend transverse to rolling direction	
	Bend Angle	Bend Radius(T=Thickness)
ROCKHARD 400	90 degree	t<8: 2.5T, 8≤t<20: 3.0T, 20≤t<50:4.0T

Inspection and Testing

Tolerance:

Thickness tolerances according to EN 10029 class A for plate can be provided, any other class like class B, C or D can be offered upon request.

Length and Width

Width tolerances according to EN 10029 can be offered.

Shape

For plate the tolerances are according to EN 10029 class N type H. More stringent ones can be offered upon request.

Surface Properties

According EN 10163-2 class A subclass 1 or as per requirements.

Ultrasonic Testing

According EN 10160 S0E0 or S1E1 or ASTM 578 level A or B or C or ASTM A 435 as per requirements.

Supply Condition

As quenched, quenched & tempered, sheared, or thermally cut edges. Plates can be delivered in shot blasted and primer coated surface condition also if required by the customer.

Certification

BIS certification as per IS 18809:2025



Steel Plate: Abrasive Resistance Products

Data Sheet: 02

Brand Name: ROCKHARD 450

Thickness: 6mm to 150mm

Specification

Grade	%C (Max)	%Mn (Max)	%P Max	%S Max	%Si Max	%Cr Max	%Ni Max	%Mo (Max)	B Max (ppm)	%CEV (Max)
ROKHARD 450	0.30	1.60	0.030	0.010	0.70	1.40	1.50	1.00	50 ppm	0.66

$$\%CEV = C + Mn/6 + (Cr+Mo+V)/5 + (Ni+Cu)/15$$

The steel is grained refined. Steel may contain grain refining elements like Al, Nb, Ti or in combination. However, %Al: 0.02 minimum with other elements like Nb+V+Ti as 0.15 Max

Grade Name	ROCKHARD 450
Hardness level	425 BHN min. (Typical 425 - 500 BHN)

Hardness Testing: Brinell hardness according to EN ISO 6506-1, on a milled surface 0.5 – 3 mm below surface. For, 8 ≤ t ≤ 60 mm:

Guaranteed core hardness shall be 90% of the guaranteed minimum surface hardness

Typical Values

Typical achievement of carbon equivalent based on thickness range as per below;

Thickness	Up to 40 mm	>40 mm to 200 mm
ROKHARD 450	0.52%~0.60%	0.60% ~0.63%

1) Typical tensile strength (MPa) values (YS, UTS & EL %) for up-to 20 mm as reference purpose only

2) Typical CVN impact energy

Grade	YS in MPa (Min)*1	TS in MPa (Min)*	% EL (Min) at *50mm GL	Impact - Toughness Min *2
ROCKHARD 450	1150	1300	12%	25J (avg) 20J (ind) J at -40 degc

Recommended minimum bending up to 20 mm thickness can be provided for reference. >20mm thickness- case to case basis; bend radius is dependent on the direction of bending to rolling direction (T= plate thickness)

Grade	Bend transverse to rolling direction	
	Bend Angle	Bend Radius (T = Thickness)
ROCKHARD 450	90 degree	t<8: 3.5T, 8≤t<20: 4.0T, 20≤t<50:6.0T

Inspection and Testing

Tolerance:

Thickness Tolerances according to EN 10029 Class A for plate can be provided, any other class like class B, C or D can be offered upon request.

Length and Width

Width Tolerances according to EN 10029 can be offered.

Shape

For plate the tolerances are according to EN 10029 class N type H. More stringent ones can be offered upon request.

Surface Properties

According EN 10163-2 class A subclass 1 or as per requirements.

Ultrasonic Testing

According EN 10160 SOE0 or SIE1 or ASTM 578 level A or B or C or ASTM A 435 as per requirements.

Supply Condition

As quenched, quenched & tempered, sheared, or thermally cut edges. Plates can be delivered in shot blasted and primer coated surface condition also if required by the customer.

Certification

BIS certification as per IS 18809:2025



Steel Plate: Abrasive Resistance Products

Data Sheet: 03

Brand Name: ROCKHARD 500

Thickness: 6 mm to 150 mm

Specification

Grade	% C (Max.)	% Mn (Max.)	% P Max.	% S Max.	% Si Max.	% Cr Max.	% Ni Max.	% Mo (Max.)	B Max (Ppm)	% CEV (Max.)
ROKHARD 500	0.30	1.60	0.030	0.010	0.70	2.00	1.50	1.00	50 ppm	0.75

$$\%CEV = C + Mn/6 + (Cr+Mo+V)/5 + (Ni+Cu)/15$$

The steel is grained refined. Steel may contain grain refining elements like Al, Nb, Ti or in combination. However, % Al: 0.02 minimum with other elements like Nb+V+Ti as 0.15 max.

Grade Name	ROCKHARD 500
Hardness level	470 BHN min. (Typical 470 - 550 BHN)

Hardness Testing: Brinell hardness according to EN ISO 6506-1, on a milled surface 0.5 – 3 mm below surface. For, 8 ≤ t ≤ 60 mm:

Guaranteed core hardness shall be 90% of the guaranteed minimum surface hardness

Typical Values

Typical achievement of Carbon equivalent based on thickness range as per below;

Thickness	Up to 40 mm	>40 mm to 200 mm
ROKHARD 500	0.60%~0.64%	0.65% ~0.75%

1) Typical tensile strength (MPa) values (YS, UTS & EL %) for up to 20 mm as reference purpose only

2) Typical CVN impact energy

Grade	YS in MPa (Min.)*1	TS in MPa (Min.)*	% EL (min.) at *50 mm GL	Impact - Toughness Min *2
ROCKHARD 500	1250	1600	10%	15J (avg.) & 10J (ind) J at -40 degc

Recommended minimum bending up to 20 mm thickness can be provided for reference. >20mm thickness- case to case basis; bend radius is dependent on the direction of bending to rolling direction (T= plate thickness)

Grade	Bend transverse to rolling direction	
	Bend Angle	Bend Radius(T=Thickness)
ROCKHARD 500	90 degree	t<8: 5.5T, 8≤t<20: 6.0T, 20≤t<50:8.0T

Inspection and Testing

Tolerance:

Thickness tolerances according to EN 10029 class A for plate can be provided, any other class like class B, C or D can be offered upon request.

Length and Width

Width tolerances according to EN 10029 can be offered.

Shape

For plate the tolerances are according to EN 10029 class N type H. More stringent ones can be offer upon request.

Surface Properties

According EN 10163-2 class A, subclass 1 or as per requirements.

Ultrasonic Testing

According EN 10160 SOE0 or SIE1 or ASTM 578 Level A or B or C or ASTM A 435 as per requirements.

Supply Condition

As quenched, quenched & tempered, sheared, or thermally cut edges. Plates can be delivered in shot blasted and primer coated surface condition also if required by the customer.

Certification

BIS certification as per IS 18809:2025



Steel Plate: Heavy Plate Products with High Yield Strength

Data Sheet: 04

EN 10025 S690QL

Thickness: 6 mm to 200 mm

Specification

Grade	% C (Max.)	% Mn (Max.)	% P (Max.)	% S (Max.)	% Si (Max.)	% Cr (Max.)	% Ti (Max.)	% N Ppm (Max.)	B Max (Ppm)	% CEV (Max.)
S690QL	0.20	1.70	0.025	0.015	0.80	1.50	0.05	150	50 ppm	0.65 up to 50mm 0.77- >50-150mm 0.83- >150mm

$$\%CEV = C + Mn/6 + (Cr+Mo+V)/5 + (Ni+Cu)/15$$

Specification - EN 10025 S690QL	Thickness Range (mm)	YS (Mpa) Min.	TS (Mpa) Min.	% El (GL: 5.65√So) Min.	Impact at (-) 40 deg in Longitudinal
	6-50	690	770-940	14	30J
	>50-100	650	760-930	14	30J
	100-150	630	710-900	14	30J

Typical Achieved Values For 25 mm

Grade	YS in MPa	TS in MPa	% EL (Min.)	Impact - Toughness
EN 10025 S690QL for 50mm	740	810	16%	100J (avg.) & 120J (ind) J at -40 degc

Inspection and Testing

Tolerance:

Thickness tolerances according to EN 10029 class A for plate can be provided, any other class like class B, C or D can be offered upon request.

Length and Width

Width tolerances according to EN 10029 can be offered.

Shape

For plate the tolerances are according to EN 10029 Class N Type H. More stringent ones can be offered upon request.

Surface Properties

According EN 10163-2 class A subclass 1 or as per requirements.

Ultrasonic Testing

According EN 10160 S0E0 or S1E1 or ASTM 578 Level A or B or C or ASTM A 435 as per requirements.

Supply Condition

Quenched & tempered, sheared, or thermally cut edges. Plates can be delivered in shot blasted and primer coated surface condition also, if required by the customer.



Steel Plate: Heavy Steel Plates with High Strength with Formability

Data Sheet: 05

SA 517 GR F

Thickness: 6 mm to 65 mm

Specification

Grade	% C (Max.)	% Mn (Max.)	% P Max.	% S Max.	% Si Max.	% Cr Max.	% Ti Max.	% N ppm (Max.)	B Max. (Ppm)
Grade F	0.10-0.20	0.60-1.0	0.025	0.015	0.15-0.35	0.40-0.65	0.10	150	50

$$\%CEV = C + Mn/6 + (Cr+Mo+V)/5 + (Ni+Cu)/15$$

Grade F	Thickness Range (mm)	YS (Mpa) Min	TS (Mpa) Min	% El (GL: 5.65√So) Min	Typical Impact at (-) 20 deg in Longitudinal
	Up to 65	690	795-930	16	20J

Typical Achieved Values For 25 mm

Grade	YS in MPa	TS in MPa	% EL (Min)	Impact - toughness
Grade F	770	830	23%	120J (avg) & 130J (ind) J at -20 degc

Inspection and Testing

Tolerance:

Thickness tolerances according to ASTM A20 or EN 10029 class A; for plate can be provided, any other class like class B, C or D can be offered upon request.

Length and Width

Width tolerances according to ASTM A20 OR EN 10029 can be offered.

Shape

For plates, the tolerances are according to ASTM A20 or EN 10029 class N type H. More stringent ones can be offered upon request.

Surface Properties

According ASTM A20 OR EN 10163-2 class A, subclass 1 or as per requirements.

Ultrasonic Testing

According EN 10160 S0E0 or S1E1 or ASTM 578 Level A or B or C or ASTM A 435 as per requirements.

Supply Condition

Quenched & tempered, sheared, or thermally cut edges. Plates can be delivered in shot blasted and primer coated surface condition also, if required by the customer.

Network And Presence

Corporate Office

Jindal Centre
12, Bhikaiji Cama Place,
New Delhi-110 066,
☎ +91 11 26188340-50, 4146000
✉ info@jindalsteel.in

Registered Office

O.P. Jindal Marg, Hisar-125 005,
(Haryana),
☎ +91 1662 222471-84

Head Office

Jindal Centre
Plot No-2, Sector-32, Near Exit-10,
Gurgaon-122 001, Haryana,
☎ +91 124 6612000 (Board)
✉ marketing@jindalsteel.in

Works

Angul
Jindal Steel Limited, Chhendipada Road,
SH-63, P.O.- Jindal Nagar,
District- Angul,
Angul-759111, (ODISHA),
☎ +91 6761 254191-95
✉ jindalangul@angul.jspl.in

Barbil
Jindal Steel Limited, Iron Ore Pellet Plant,
Commercial Office, Plot No. 507/365, Barbil-
Joda Highway, Barbil-758035
Barbil-758035, (Odisha),
☎ +91 6767 248621/248625

Patratu
Jindal Steel Limited, Balkudra, Patratu,
Distt. Ramgarh,
Jharkhand 829 143,
INDIA
☎ +91 6553 275724/275726

Raipur
Jindal Steel Limited, 13 K.M. Stone, GE. Road,
Mandir Hasaud,
Raipur - 492 101, (Chhattisgarh),
☎ +91 771 2471205-07
✉ jspl_raipur@rpr.jspl.in

Raigarh
Jindal Steel & Power Ltd. Kharsia Road,
Raigarh-496 001. (Chhattisgarh),
☎ +91 7762 227001-05
✉ raigarh@jspl.in

For Enquiry

DOMESTIC

✉ plates@jindalsteel.in
☎ +91-124-6612000

EXPORT

✉ export.team@jindalsteel.in
☎ +91-124-6612000



Sales Network

SOUTH	
Visakhapatnam	Jindal Steel Limited, 3rd Floor, Bhupati Surya Central Mall, Dondaparthi Circle, Vishakhapatnam-530016 (Andhra Pradesh)
Bangalore	Jindal Steel Limited, 1002-03, 10th Floor, Prestige Meridian Tower 1, M. G. Road, Near Trinity Circle, Bengaluru-560001 (Karnataka)
Chennai	Jindal Steel Limited, AWFIS, Center Point 3, 6th Floor, No.2/4 Mount Poonamalle High Road, Manapakkam, Chennai-600089 (Tamil Nadu)
Kerala	Jindal Steel Limited, B1 (1st Floor), Springs Cascade, Opp. EMC Peringatt Road, Palarivattom, Kochi-682025 (Kerala)
Hyderabad	Jindal Steel Limited, Flat No-1007, 10th Floor, Jain Sadguru Images Capital Park, Plot No. 1-98/4/1 to 13, 28 & 29, Image Garden Road, Madhapur, Hyderabad-500081 (Telangana)
NORTH	
Noida	Jindal Steel Limited, Unit Numbers 1011 & 1012, 10th floor Office Tower, Bhutani City Centre, Plot No 58, Block BW, Sector 32, Noida-201301 (Uttar Pradesh)
Lucknow	Jindal Steel Limited, 506, 5th Floor, Shalimar Iridium, Shalimar Corporate Park, Vibhuti Khand, Gomti Nagar, Lucknow-226010 (Uttar Pradesh)
Chandigarh	Jindal Steel Limited, SCO-24, 1st floor Sector 26 Madhya Marg, Chandigarh-160019
Ludhiana	Jindal Steel Limited, SCS-132, First Floor Urban Estate Phase-1, Jamalpur, Ludhiana-141010 (Punjab)
Jaipur	Jindal Steel Limited, Office No.-307, Bansal Tower, Rathore Nagar Scheme, Vaishali Nagar, Jaipur-302021 (Rajasthan)
Faridabad	Jindal Steel Limited, Shop No - 9, Bata A Colony, NIT, Faridabad-121001 (Haryana)

EAST	
Ranchi	Jindal Steel Limited, Uma Bhawan, First Floor, House No. 359/A, Road No. 5/B, Ashok Nagar, Ranchi - 834002 (Jharkhand)
Bhubaneswar	Jindal Steel Limited, Plot No.- 3, Forest Park, Bhubaneswar-751009 (Odisha)
Patna	Jindal Steel Limited, 309, Vasundhara Metro Mall Rajapur Pul, Boring Canal Road, Patna-800001 (Bihar)
Kolkata	Jindal Steel Limited, Haute Street Building, 86 A Topsia Road, Kolkata-700046 (West Bengal)
Guwahati	Jindal Steel Limited, House No.-15, Rajgarh Road, Near Bank of Baroda, Guwahati-781007 (Assam)
Raipur	Jindal Steel Limited, 9th Floor, CBD Complex, Block C, Commercial Tower, Sector-21, Atal Nagar, Nava Raipur-492101 (Chhattisgarh)
WEST	
Bhopal	Jindal Steel Limited, E10-11, 8th Floor, Bansal One, Near Rani Kamlapati Railway Station, Bhopal-462016 (Madhya Pradesh)
Nagpur	Jindal Steel Limited, Block No.- 302, M.G. House, 316-E, Ravindra Nath Tagore Marg, Civil Lines, Nagpur-440001 (Maharashtra)
Mumbai	Jindal Steel Limited, 3rd Floor, Jindal Mansion 5A, Dr. G. Deshmukh Marg (Pedder Road), Mumbai-400026 (Maharashtra)
Pune	Jindal Steel Limited, AWFIS, 17th Floor, Nyati Enthral, Mundhwa-Kharadi Bypass, Kharadi South Main Road, Kharadi, Pune-411014 (Maharashtra)
Ahmedabad	Jindal Steel Limited, B-2206 & 2207, 22nd Floor, B Block, Westgate By True Value, Nr. YMCA Club, SG Highway, Ahmedabad - 380015 (Gujarat)

FOR ENQUIRY

DOMESTIC

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EXPORT

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Scan the QR code to know more about The Steel of India

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