JSW Special Steel Products

JSW Steel Plant, Vijaynagar Works, Karnataka

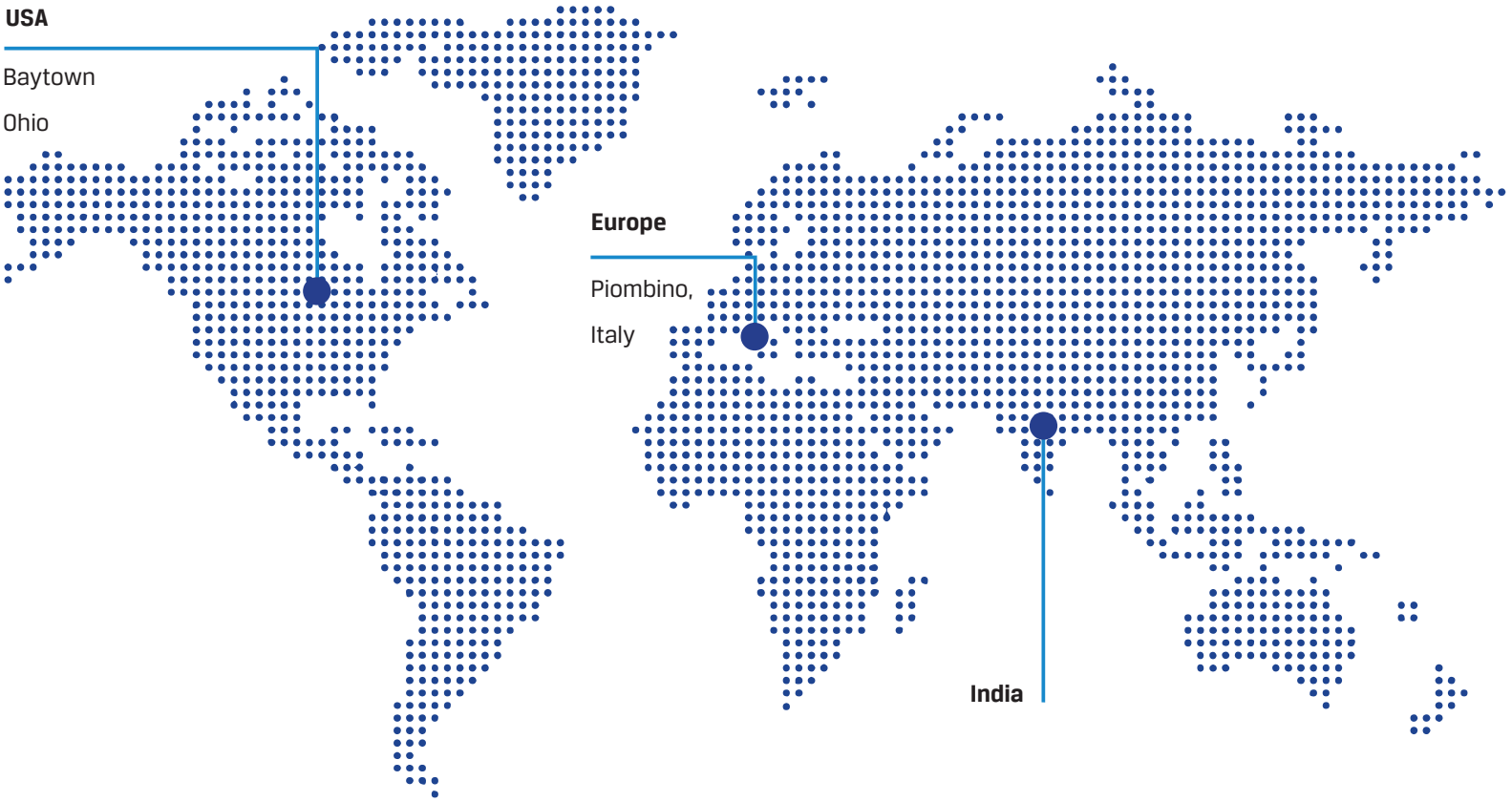
Content

JSW Group is a $24 billion global conglomerate and one of India's most diverse and dynamic business entities. With its headquarters in Mumbai, the Group has a significant presence across steel, energy, cement, infrastructure, paints, electric mobility, defence, copper, venture capital and sports. JSW Steel, its flagship company, is ranked among the world's leading steel manufacturers.

JSW Energy is advancing India's clean energy ambitions, while JSW Cement and JSW Paints are redefining sustainability in construction and coatings. Beyond business, JSW invests in sports, technology, and community-driven initiatives, fostering inclusive growth. With operations spanning India, the US, Europe and Africa, JSW is shaping a sustainable and progressive future.

Our Strength

40000+	People
300+	Offices
17	Plants
3	Continents



Plants Locations

Vijayanagar Works | Dolvi Works | Salem Works | JSW BPSL Jhasuguda | JSW BPSL Kolkata | JSW BPSL Chandigarh | Anjar Works
Raipur | Raigarh Works | Vasind Works | Tarapur Works | Kalmeshwar Works | Indore | Bawal Works | J & K | Khapoli Works | Rajpura Works

About JSW Steel

JSW Steel is the flagship business of the diversified, US$ 24 billion JSW Group. As one of India's leading business houses, JSW Group also has interests in energy, infrastructure, cement, paints, realty, e-platforms, green mobility, defence, sports, and venture capital. Over the last three decades, JSW Steel has grown from a single manufacturing unit to become India's leading integrated steel company with consolidated crude steel capacity of 35.7 MTPA including 1.5 MTPA in US. Domestic crude steel capacity stood at 32.5 MTPA and will reach at 34.2 MTPA post full commissioning of expansion project by wholly owned subsidiary, JSW Vijayanagar Metallics Ltd. (JVML) at Vijayanagar. Its next phase of growth will take consolidated capacity to 43.5 MTPA over next three years. The Company's plant in Vijayanagar, Karnataka is the largest single-location steel-producing facility in India with capacity of 17.5 MTPA (including under commissioning).

JSW Steel has always been at the forefront of research and innovation. It has a strategic collaboration with global leader JFE Steel of Japan, enabling JSW to access new and state-of-the-art technologies to produce and offer high value special steel products to its customers. These products are extensively used across industries and applications including construction, infrastructure, automobile, electrical applications, and appliances.

JSW Steel is widely recognized for its excellence in business and sustainability practices. Some of these recognitions include World Steel Association's Steel Sustainability Champion (consecutively from 2019 to 2024), Leadership Rating (A-) in CDP climate change disclosure and A in CDP Water Disclosure (2023), Deming Prize for TQM for its facilities at Vijayanagar (2018), and Salem (2019). It is part of the Dow Jones World and Emerging Markets Sustainability Indices (DJSI), and included in S&P Global's Sustainability Yearbook (consecutively from 2020 to 2024). JSW Steel is ranked 8th among the top 35 world-class steelmakers, according to the 'World-Class Steelmaker Rankings' by World Steel Dynamics (WSD), based on a variety of factors. As a responsible corporate citizen, JSW Steel's CO2 emission reduction goals are aligned with India's Climate Change commitments under the Paris Accord.

JSW Steel has received Responsible Steel Certification for four manufacturing sites - Vijaynagar, Dolvi, Tarapur and Salem.

JSW Salem Works

JSW Salem Works is recognized as India's first Special Alloy Steel Plant with a capacity of 1 MTPA and is the only integrated steel plant situated in Tamil Nadu. This plant is capable of producing a variety of products, including Pig Iron, Cast Billet/Blooms, Hot Rolled Round Bars, RCS Bars, Wire Rod, Flats Bars, Hexagonal Bars, Hexagonal Wire Rod, and Grinding Media Steel Balls. Furthermore, the Hot Rolled products can be supplied in either Annealed or Bright Bar Condition.

Strategic Location: The plant's location in Tamil Nadu ensures lower transportation costs and faster delivery to major auto hubs in southern and western parts of India.

The facility is also bolstered by several auxiliary operations, such as a Captive Power Plant and a Gas Production Plant (producing Oxygen, Nitrogen, and Argon), along with Compressed Air and Water systems. Salem Works is esteemed as a prominent manufacturer of Virgin Special Steel, offering more than 1500 customized grades. Salem Works is India's largest integrated special alloy steel plant manufacturing world-class quality Special Steel Long Products for various applications:

Bearing | Forging | Cold Heading | Spring | Free Cutting | Boiler | Tire Cord | Doffer Wire | Defense | Railways | Nuclear | Aerospace

Setting Benchmarks

- World's largest Energy Optimizing Furnace (EOF) by installed capacity
- Slag Detection System at EOF tapping
- Dynamic Ferro Alloy Addition Model for alloy calculation and addition in Ladle Furnace
- Largest Long Product Cast Section – 340x400
- Automated Mould Powder Feeding System in Caster
- Final EMS in the Casters in addition to the Mould EMS
- Automatic Slow Cooling facility at Blooming Mill
- India's first and largest Skew Rolling Mill for Grinding Media Steel Balls
- Continuous Annealing furnace for the Long Products
- Fully Automatic Inspection Lines (UST, ECA) for the Straight Length Round and RCS Bars
- Single Tap Hole Blast Furnace with the Pool type runner
- Zero Liquid Discharge Plant
- Advanced Production Planning (APS) System

Production Capabilities - Salem

Plant	Installed Capacity	Unit of Measure
Coke Oven (Non-Recovery)	0.5	MTPA
Sinter Plant – 1 (20 m^2)	0.175	MTPA
Sinter Plant – 2 (90 m^2)	1.06	MTPA
Blast Furnace – 1	0.367	MTPA
Blast Furnace – 2	0.683	MTPA
SMS	1.15	MTPA
Blooming Mill	0.48	MTPA
Bar & Rod Mill	0.48	MTPA
Annealing	0.06	MTPA
Peeling & Grinding	0.006	MTPA
Air Separation Plant – 1	150	Tons/day
GMM	0.1	MTPA
Air Separation Plant – 2	390	Tons/day
Captive Power Plant	3X30	MW

Manufacturing Facilites and Process Route - Salem

Coke Oven Plant: Metallurgical Coke is produced by destructive distillation of coal.

Sinter Plant: Agglomerates Iron Ore Fines, Fluxes, and Fuel at 1250-1350°C to produce Sinter for the Blast Furnace.

Blast Furnace: Iron Ore Lumps, Sinter, Coke, and Fluxes are charged from the Top, while Hot Air (1050-1150°C) is injected at the bottom through Tuyeres. It is also equipped with PCI facility. Iron bearing materials get converted into Liquid Hot Metal through Reduction Process and periodically tapped through the Tap Hole.

Energy Optimizing Furnace (EOF): EOF is a Primary Steel Making unit where Liquid Hot Metal is getting converted into Liquid Steel through Oxidation Process. Oxygen is blown into the Furnace through Submerged Tuyeres, Atmospheric Injectors and Supersonic Lance. After processing, Liquid Steel is tapped into the Ladle with the addition of Primary deoxidants and transferred to Ladle Refining Furnace.

Special Features in EOF: Auto Blow Profile System for Oxygen Blowing | Continuous Deslagging System Carbon & Oxygen Prediction Model | Slag Detection System at tapping.

Ladle Refining Furnace (LRF): LRF is a secondary steel making unit where Chemical Composition of Steel is maintained as per the Customer Specific Requirements. It is equipped with electrodes to maintain the temperature of steel. Ferro alloys and Fluxes are added from bunkers through conveyor systems with an online weighing system.

Special Features of LRF:

- Mass Flow Control (MFC) system to ensure homogenization of steel
- Dynamic Ferro Alloy Model
- Slag raking system for EOF tap slag removal

Vacuum Degassing (VD): After LRF process, Steel is taken to Degassing unit and treated under vacuum for removal of Dissolved Gases. Ar Purching rate Holding Pressure and time are being maintained as per the End Application Requirement.After VD, soft rinsing is carried out for Inclusion Flotation at LRF Station.

Special Features of VD:

- Interlock system to maintain the desired holding time
- VD Camera

Billet & Bloom Casters: In CCM, liquid steel is converted into solid billets/blooms. It is then transferred through shroud from Ladle to Tundish, and from Tundish to 3-Strand Moulds through SEN. In mould, primary cooling is carried out to form the initial solidified shell. The billet/bloom is withdrawn and straightened continuously by withdrawal and straightener rolls. During this process, billets/blooms are continuously cooled with water. Final Cast billets/blooms are cut to required length and transferred to yard followed by either Direct Dispatch or else consumption at Hot Rolling Mills.

Special Features of CCM:

- Argon Flooding System in Tundish
- Hydris to measure the Liquid Hydrogen level
- Slag Detection System from Ladle to Tundish
- Auto Mould Powder Feeder
- Final EMS in addition to Mould EMS
- Pit/Slow Cooling of Billets/Blooms after Casting

Blooming Mill: Blooming Mill produces Hot Rolled Round and Round Cornered Square (RCS) bars. Blooms are reheated in a Blast Furnace Gas Fired Walking Beam Furnace followed by descaling using High Pressure Water Jets, Rough Rolling in a 2 Hi-Reversible Mill and Final Rolling in 8 Stand HV Mill.


CONTROL R

Special Features of BLM:

- Hot Profiler for Online Size Measurement
- Automatic Slow Cooling Facility

Bar & Rod Mill: BRM produces Hot Rolled Round Bars, Wire Rod, Flats Bars, Hexagonal Bars and Hexagonal Wire Rod. Billets / Blooms are reheated in a Blast Furnace Gas Fired Walking Beam Furnace followed by descaling using High Pressure Water Jets, Rough Rolling in a Sliding Stand, Intermediate Rolling in a 17 Stand HV Mill and Final Rolling in Reducing Sizing Block / No Twist Mill.

Special Features of BRM:

- Hot Eye Surface Inspection for Wire Rod
- Stelmor Conveyor system for Wire Rod
- Reducing Sizing Block for Closer Dimension Control
- Manual Controlled Cooling

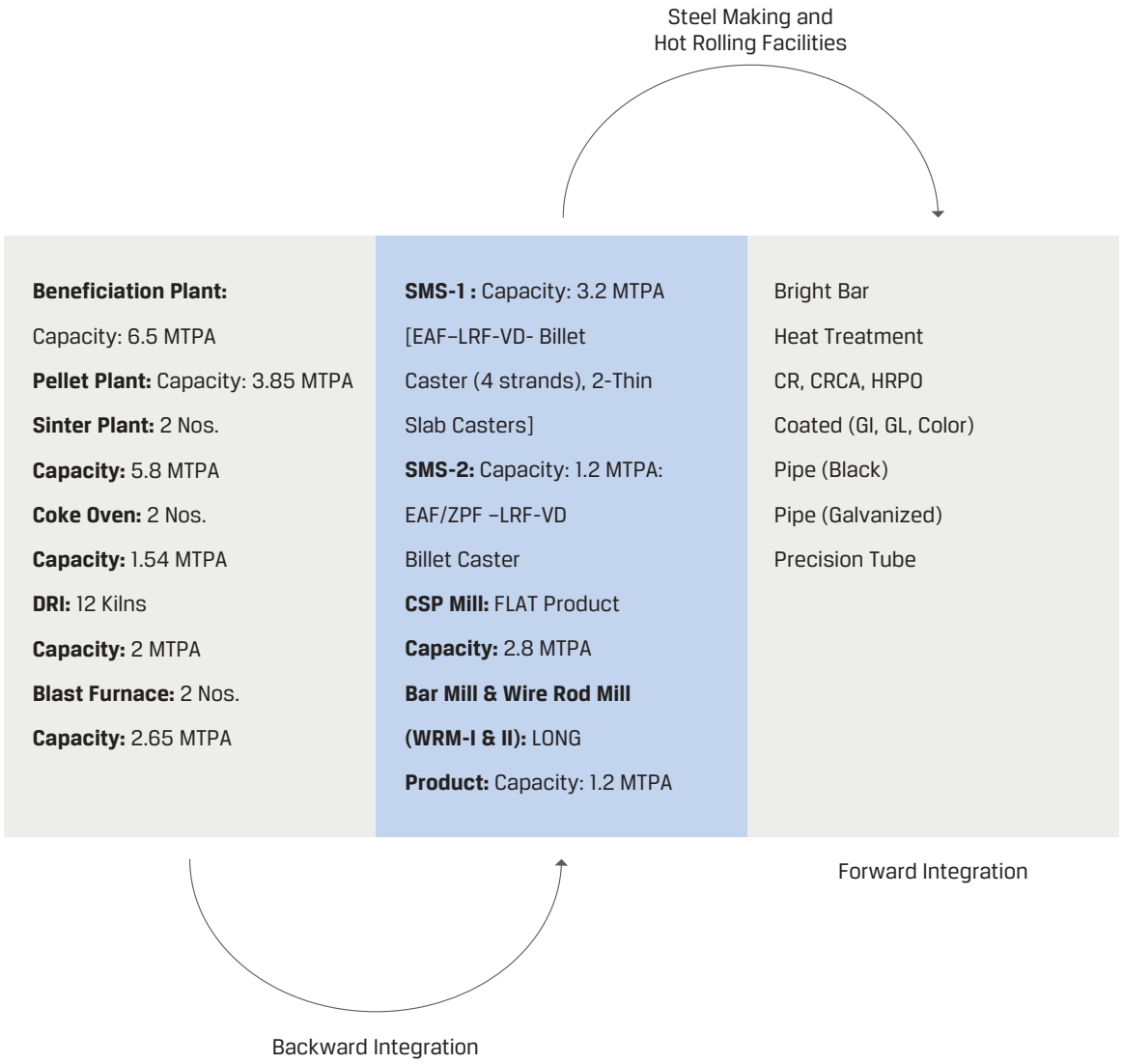
Annealing Furnace

- Straight Length Bars (Round, RCS and Flats) are processed through Continuous Roller Type Electrically Heated Furnace with Nitrogen atmosphere based on the Customer Specific Requirement.
- Wire Rod is processed through Bell Type furnace followed by Pickling and Phosphating based on the Customer Specific Requirement.

Peeling, Reeling and Grinding: Straight Length Round Bars are getting converted into Bright Bars with the controlled Dimension tolerance and Surface Roughness as per Customer Specific Requirement.

Grinding Media Mill: India's First and Largest Skew Rolling Mill which produces Grinding Media Steel Balls in Quenched and Tempered condition. Since Salem Works is an Integrated Steel Plant, Customized grades can be produced as per Market requirement in place of Conventional Grades used as Steel Balls in the Mining Industries.

Manufacturing Facilities - BPSL



Manufacturing Facilities - Vijayanagar

Basic Oxygen Furnace

The Basic Oxygen Furnace (BOF) steelmaking process is named after the predominantly basic nature of the slag and utilizes pure oxygen gas to decarburize the hot metal.

Advantages of BOF

- Excellent metallurgical properties, especially with regard to de-phosphorization.
- Better steel Quality due to lesser inclusions due to use of slag dart.
- High Production rate due to less turn down time.

Electric Arc Furnace

Electric Arc Furnace uses electric energy to melt the scrap and hot metal for steel making.

Advantages of EAF

The Electric Arc Furnace (EAF) process significantly reduces the carbon footprint by recycling and recovering waste iron resources.

Zero Power Electric Arc Furnace

Zero power EAF process is an oxygen steel making process best suited alloy steel production from hot metal.

Advantages of ZPF

- Flexibility with regard to metallic charge mix

Ladle Refining Furnace

Further refining of steel is done in ladle furnace by deoxidizing and desulphurizing the steel under continuous argon purging which facilitates flotation of inclusions, homogenization of chemistry and temperature.

Targeted chemistry and temperature is achieved by requisite addition of ferroalloys under arcing conditions.

Vacuum Degassing

Vacuum degassing, which involves exposing the liquid steel to a high absolute vacuum, serves several purposes from reduction dissolved gases to removal of deleterious solid inclusions.

The primary objectives of vacuum degassing are:

- Reduction of dissolved gases (hydrogen, nitrogen and oxygen) in the molten steel
- Reduction of oxide-inclusion in liquid steel

Cast Products

We operate One 8 strand, one 5 strand and one 6 strand Continuous Casting Machines (CCMs), each with a double casting radius of 9 & 16 meters.

Cast Product Size

- 130x130, 165x165, 200x200 mm Billets

Wire Rod Mill (WRM)

After inspection of the cast product the billets from SMS are ground in an Automatic Billet Grinding machines.

The mills are designed to achieve 600,000 tons per year for a size range from 5.5 to 22 mm rod and 1,200,000 tons per year, through two (2) strand wire rod mill, for a size range from 5.5 to 25 mm rod. The mills have a maximum production capacity of 213.4 t/h for rolling of cold heading qualities, carbon steels, electrode grade, free cutting and rebar. Cast billets of size 165 mm x 165 mm x 12000 mm will be rolled in the mill, producing 2.5 ton coils.

Improved rod tolerance to ± 0.20 mm and Ovality to 0.25 mm over the complete product size range through reducing and sizing mill in both the Wire rod mills.

Bar Rod Mill (BRM1&2)

The mills are designed to achieve 1,100,000 tons per year each in both the bar rod mills to produce thermo-mechanically treated re-bars achieved with HYQST technology, for sizes 8 mm diameter to 40 mm diameter.

Products - Salem

Cast Products:	–	Billets / Blooms – 130 X 130, 160 X 160, 220 X 220, 250 X 250, 280 X 370, 340 X 400mm
	–	Rounds – 200 to 310mm
Rolled Products:	–	Round Bars – 20 to 200mm
	–	RCS Bars - 55 to 300mm
	–	Wire Rods – 5.5 to 32mm
	–	Flat Bars – 60 X 7 to 101 X 38mm
	–	Hexagon Bars – 20 to 45mm
	–	Hex WR – 20 to 32mm
Annealed Products:	–	Bars – 20 to 160mm
	–	Wire Rods – 5.5 to 32mm
	–	Flats – 60 X 7 to 101 X 38mm
Bright Bar:	–	Bars – 20 to 80mm
GMM:	–	GMM – 25 to 150mm
PRBB:	–	Bars – 20 to 65mm

Grade Category

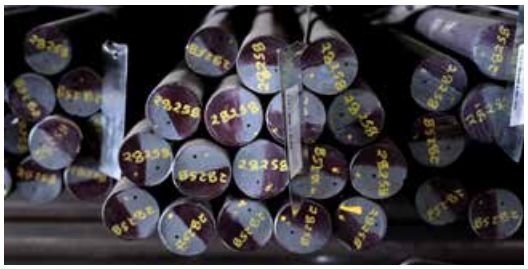
- Bearing Steel
- High Mn Steel
- Cr Steel
- Cr-Mn Steel
- Cr-Si Steel
- Cr-Mo Steel
- Ni-Cr-Mo Steel
- Si Steel
- Spring Steel
- Mo Steel
- Micro Alloy Steel
- Boron Steel
- File Steel
- Tool Steel
- Electrode Quality Steel
- Free Cutting Steel
- Low Carbon Steel
- Medium Carbon Steel
- High Carbon Steel
- Mild Steel

Cast Products

Rounds - 200 to 310mm

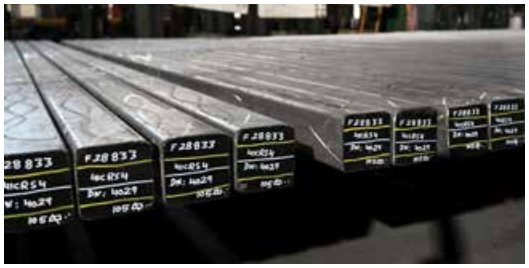
Billets/Blooms - 130, 160, 220, 250, 280x370, 340x400

Rolled Products

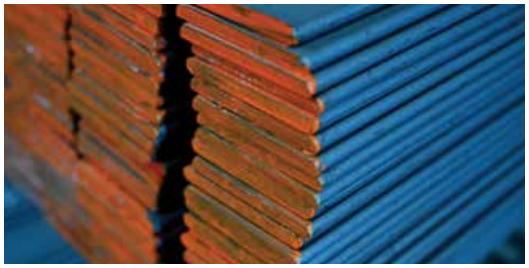


Bars- 20 to 200mm

Hex WR - 20 to 32mm &
WR - 5.5 to 32mm



RCS - 55 to 300mm



Flats - 60x7 to 101 x 38mm

Hexagon Bars - 20 to 45mm

Annealed Products

Bars - 20 to 160mm

WR - 5.5 to 32mm

Bright Bars

Bars - 20 to 80mm

PRBB

Bars - 20 to 65mm

GMM

GMM - 25 to 150mm

Products - Vijayanagar

Wire Rod Mill (WRM)

- Carbon Special Steels
- Free Cutting Steels
- Boron Steels
- Cold Heading Steels
- Alloy Steels
- Electrode Quality Steels
- Case Hardening Steels
- LRPC Steels
- Forging Quality Steels
- Steel for Tyre Beads & Cord
- TMT Rebar and Coil

SN	Family of Steel Grade	Application Segments
1	Low Carbon Steel	General Engineering
2	Low Carbon CHQ Steel	Cold Forming, Fasteners
3	Medium Carbon Steel	Automobile Engineering
4	High Carbon Steel	Spring, Tyre bead, P.C Wire, Wire ropes
5	Alloy Steel	Automobile Engineering
6	Electrode Steel	Welding
7	Electrode Alloy Steel	Special Welding

SN	Application Segments	Grades offered
1	**General Engineering :** Fasteners, Screws (drywall, self-drilling, self-tapping), Steel wire rods, Fencing wire, Bending wire, Nuts, Bolts	SAE 1006, SAE 1008, SAE 1010, SAE 1012, SAE 1015, SAE 1018, SAE 1020, SAE 10B21, SAE15B25, EN1A
2	**Welding Application:** Welding Electrode Wire for MIG & TIG Welding Application	ER70S-6, EM12K, EWNR
3	**Cable Armour Wire:** Steel wire armored cable for the supply of mains electricity. Armoring is also applied to submarine communication cables.	CAQ/ SAE 1005
4	**Automotive Industry:** Tire cord wire, tire bead, and various types of springs	HC72A, HC82A, HC82B
5	**PC Steel Wires :** Reinforcement for railway sleepers, stay cables and weld fences	HC82B20, HC82B21

Products - BPSL

Black Bar

Peeled Bars

WR Coil

Drawn Bars

Precision Tube

RCS Bars

HEX

Product Mix - BPSL

As Rolled Bars / Coils

- 16 to 90 mm diameter Rounds in straight lengths.
- 20 to 75 mm square RCS bars.
- 18 to 60 mm Hexagon Bars.
- 5.5 to 16 mm diameter Wire Rod coils.
- 16 to 60 mm diameter Bars in Coil form.

Round Bars

Bright Bars / Coils

- 8 to 28 mm round Bright Bars (Coil to Coil/Bar).
- 22 to 90 mm round Bright Bars (Peeling).
- 24 to 90 mm round Bright Bars (Bar to Bar).
- 8 to 90 mm round Bright Bars (Centerless Grinding).
- 20 to 90 mm round Bright Bars (H&T).
- 20 to 90 mm round Bright Bars (Bar Annealing).
- 18 to 50 mm Hexagonal Bright Bars.

Cold
Drawn Coils

Metallurgy & Mechanical Properties - Salem

Macro etch (ASTME - 381): C2R2S2 Max

Ultrasonic test: 20% of BWE / SDH (or FBH) as per customer requirement.

Non-metallic inclusion testing: ASTM E45 / DIN 50602 / JIS G0555 / ISO 4967 / IS 4163 as per customer requirement.

Step down test can also be ensured. As per customer specification.

Grain Size: 5-8 AS PER ASTM E – 112 (Grade specific)

Hardeneability: Within 6 HRC Max for single point spec.

Surface defect depth: 1% of Diameter or 0.30 MM MAX (For rolled bars)

Grade & composition: As per specification.

Gases:

H2 – 2.0 ppm Max.

02 – 20.0 ppm Max.

N2 – 90.0 ppm Max (Possible to control in restricted range up to 220 ppm for N2 containing Micro Alloyed Steel)

Specific requirement can be fulfilled based on agreement with customer.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Metallurgy & Mechanical Properties - Vijayanagar

Macroetchm (ASTME - 381): C2R2S2 Max

Cleaniliness (Inclusion) Type: (as per ASTM E - 45)

Grain Size: 5-8 as per ASTM E – 112 (Grade specific)

Hardeneability: Within 6 HRC Max for Single Point spec.

Surface Defect Depth: 0.30 mm Max (For rolled bars)

Grade & Composition: Mechanical testing as per spec.

Gases:

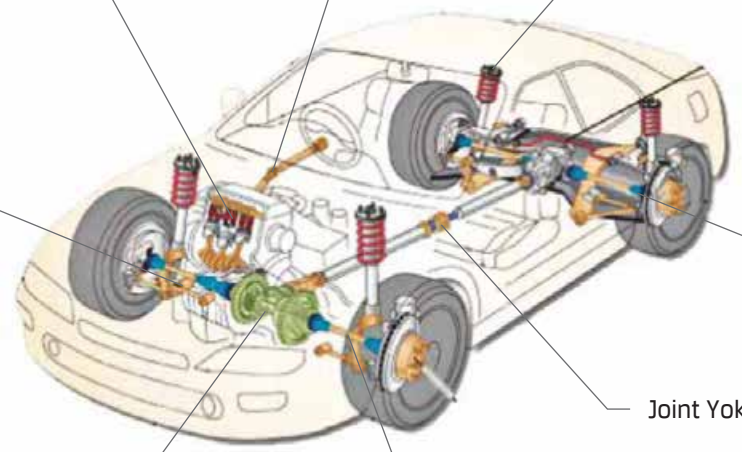
- H2 – 2.5ppm (lower levels available on prior agreement)
- O2 – On Low Carbon ⟨ 25 ppm
- O2 – On Medium Carbon ⟨ 20 ppm
- N2 – 90 ppm Max (Possible to control in restricted range up to 45 ppm)
- Specific requirement can be tailor made

Major End Use Application - Salem

Crankshaft

Steering

Shock Absorber



Ball Joint

Bearing

Joint Yoke

Transmission

Front Axle

Major Customers - Salem

Forging

BHARAT FORGE KALYANI | M M Forgings ...Forging Excellence...

Western India Forgings Pvt. Ltd. An ISO 9001 Company | ECHJAY INDUSTRIES | LINAMAR

CHQ/Fasteners

TVS Sundram Fasteners Limited | STL FASTENERS | CAPARO

Rail

JSW Steel Italy Piombino

Free Cutting

MAHALAKSHMI Bright Steel Industries Pvt. Ltd. | HFAIPL | PREMIER STEEL GROUP Adding glow to the steel

Spring

Jamna Auto Industries Ltd | Joneja Bright Steels Pvt. Ltd. | Stumpp, Schuele & Somappa Springs Pvt. Ltd | CHUHATSU CHUO SPRING CO.,LTD.

Tire Cord, Card Clothing

BEKAERT better together | Lakshmi

End Users / OEM

Major Customers - Vijayanagar

Low Carbon Steel Customers

High Carbon Steel Customers

Electrode Wire Customers

CAQ Wire

Major Customers - BPSL




Tolerance Limits:

Flats				
Nominal Width (mm)	**Tolerance on Width**		**Tolerance on Thickness**	**Tolerance on Concavity**
		10mm	10mm	
Over 50 Upto 75	+ 0.5mm	+ 0.15mm	+ 0.20mm	0.10mm max
Over 75 Upto 100	+ 0.70mm	+ 0.20mm	+ 0.25mm	0.15mm max
	+ 0.90mm	+ 0.25mm	+ 0.40mm	0.20mm max

Bars/Rounds			
Normal Size Over	**Upto & Including**	**Tolerance, mm Permissible Deviation**	**Out of Roundness (max)**
(1)	(2)	(3)	(4)
50	64	+0.8 -0	0.8
64	80	+1.2 -0	0.8
80	89	+1.2 -0	0.8
89	100	+1.6 -0	1.2
100	114	+1.6-0	1.2
114	125	+2.0 -0	1.5
125	139	+2.0 -0	1.5
139	160	+3.2 -0	2.0
160	164	+3.2 -0	2.0
164	200	+4.0 -0	2.5

Round Cornered Square			
Normal Size Over	**Upto & Including**	**Tolerance, mm Permissible Deviation**	**Out of Roundness (max)**
(1)	(2)	(3)	(4)
-	50	+0.6	0.6
50	64	+1.2	0.8
64	89	+1.8	1.3
89	100	+2.4	1.8
100	114	+2.4	1.8
114	125	+3.0	2.5

Wire Rods		
Diameter (mm)	**Tolerance (mm)**	**Ovality (mm)**
5.50 to 8.00	+/- 0.13	0.20 max
8.00 to 11.00	+/- 0.15	0.24 max.
11.00 to 15.00	+/- 0.18	0.25 max.
15.00 to 22.00	+/- 0.20	0.30 max.
22.00 to 25.00	+/- 0.24	0.35 max.
25.00 to 28.00	+/- 0.25	0.40 max.
28.00 to 31.00	+/- 0.28	0.45 max.
31.00 to 32.00	+/- 0.30	0.50 max.

Tolerance from Kocks Block:

PRBB			
Size	**Guaranteed tolerance (mm) - ±**		**Ovality (mm)**
	-	+	
16.3	0.132	0.132	0.211
17.3	0.133	0.133	0.212
18.3	0.134	0.134	0.214
20	0.135	0.135	0.216
20.5	0.136	0.136	0.217
21	0.137	0.137	0.218
23.5	0.141	0.141	0.222
25	0.143	0.143	0.228
26	0.144	0.144	0.23
27.5	0.146	0.146	0.234
28	0.147	0.147	0.235
30	0.15	0.15	0.24
31	0.152	0.152	0.242

PRBB			
Size	**Guaranteed tolerance (mm) - ±**		**Ovality (mm)**
	-	+	
32	0.153	0.153	0.244
34	0.155	0.155	0.249
36	0.159	0.159	0.254
38	0.162	0.162	0.259
40	0.165	0.165	0.264
42	0.168	0.168	0.268
44	0.171	0.171	0.273
45	0.172	0.172	0.275
48	0.177	0.177	0.283
50	0.18	0.18	0.288
56	0.19	0.19	0.303
56.5	0.191	0.191	0.305
58	0.194	0.194	0.31
60	0.198	0.198	0.316

Specifications of Steel manufactured

Grade	Cold Heading Quality Chemical Composition %															
	C		Si		Mn		P		S		Cr		Mo		B	
	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max
SAE 1006	-	0.08	-	-	0.25	0.40	-	0.30	-	0.50	-	-	-	-	-	-
SAE 1008	-	0.10	-	-	0.30	0.50	-	0.30	-	0.50	-	-	-	-	-	-
SAE 1010	0.08	0.13	-	-	0.30	0.60	-	0.30	-	0.50	-	-	-	-	-	-
SAE 1012	0.10	0.15	-	-	0.30	0.60	-	0.30	-	0.50	-	-	-	-	-	-
SAE 1015	0.13	0.18	-	-	0.30	0.60	-	0.30	-	0.50	-	-	-	-	-	-
SAE 1018	0.15	0.20	-	-	0.60	0.90	-	0.30	-	0.50	-	-	-	-	-	-
SAE 1020	0.18	0.23	-	-	0.30	0.60	-	0.30	-	0.50	-	-	-	-	-	-
SAE 1541	0.36	0.44	-	-	1.35	1.65	-	0.30	-	0.50	-	-	-	-	-	-
SAE 4140	0.38	0.43	0.15	0.35	0.75	1.00	-	0.30	-	0.40	0.80	1.10	0.15	0.25	-	-
SAE 10B21	0.18	0.23	-	0.30	0.80	1.10	-	0.30	-	0.30	0.10	0.20	-	-	0.0005	0.003
SAE 15B25	0.23	0.28	-	0.30	0.90	1.30	-	0.30	-	0.30	0.10	0.20	-	-	0.0005	0.003
SAE 15B35H	0.31	0.39	0.15	0.35	0.70	1.20	-	0.40	-	0.50	0.10	0.30	-	-	0.0005	0.003
SAE 10B35	0.32	0.37	-	0.40	0.60	0.90	-	0.025	-	0.025	0.10	0.40	-	-	0.0008	0.003
SAE 15B41	0.36	0.44	0.15	0.30	1.35	1.65	-	0.030	-	0.030	0.10	0.20	-	-	0.0005	0.003
SAE 1540	0.38	0.43	0.15	0.30	0.70	0.90	-	0.025	-	0.025	0.70	0.90	-	-	-	-
19MnB4M	0.20	0.25	0.15	0.30	0.80	1.10	-	0.030	-	0.030	0.30	0.40	-	-	0.0008	0.003
30MnB4	0.27	0.32	-	0.30	0.80	1.10	-	0.025	-	0.025		0.30	-	-	0.0008	0.003
36CrB4	0.34	0.38	-	0.30	0.70	1.00	-	0.025	-	0.025	0.90	1.20	-	-	0.0008	0.003

Grade	High Carbon Wire Rods Chemical Composition %									
	C		Si		Mn		P		S	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
SWRH 27	0.24	0.31	0.15	0.35	0.30	0.60	-	0.030	-	0.030
SWRH 32	0.29	0.36	0.15	0.35	0.30	0.60	-	0.030	-	0.030
SWRH 37	0.34	0.41	0.15	0.35	0.30	0.60	-	0.030	-	0.030
SWRH 42A	0.39	0.46	0.15	0.35	0.30	0.60	-	0.030	-	0.030
SWRH 42B	0.39	0.46	0.15	0.35	0.60	0.90	-	0.030	-	0.030
SWRH 47A	0.44	0.51	0.15	0.35	0.30	0.60	-	0.030	-	0.030
SWRH 47B	0.44	0.51	0.15	0.35	0.60	0.90	-	0.030	-	0.030
SWRH 52A	0.49	0.56	0.15	0.35	0.30	0.60	-	0.030	-	0.030
SWRH 52B	0.49	0.56	0.15	0.35	0.60	0.90	-	0.030	-	0.030
SWRH 57A	0.54	0.61	0.15	0.35	0.30	0.60	-	0.030	-	0.030
SWRH 57B	0.54	0.61	0.15	0.35	0.60	0.90	-	0.030	-	0.030
SWRH 62A	0.59	0.66	0.15	0.35	0.30	0.60	-	0.030	-	0.030
SWRH 62B	0.59	0.66	0.15	0.35	0.60	0.90	-	0.030	-	0.030
SWRH 67A	0.64	0.71	0.15	0.35	0.30	0.60	-	0.030	-	0.030
SWRH 67B	0.64	0.71	0.15	0.35	0.60	0.90	-	0.030	-	0.030
SWRH 72A	0.69	0.76	0.15	0.35	0.30	0.60	-	0.030	-	0.030
SWRH 72B	0.69	0.76	0.15	0.35	0.60	0.90	-	0.030	-	0.030
SWRH 77A	0.74	0.81	0.15	0.35	0.30	0.60	-	0.030	-	0.030
SWRH 77B	0.74	0.81	0.15	0.35	0.60	0.90	-	0.030	-	0.030
SWRH 82A	0.79	0.86	0.15	0.35	0.30	0.60	-	0.030	-	0.030
SWRH 82B	0.79	0.86	0.15	0.35	0.60	0.90	-	0.030	-	0.030

Grade	Forging Quality-Chemical Composition %									
	C		Si		Mn		P		S	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
15C8	0.10	0.20	-	-	0.60	0.90	-	-	-	-
20C8	0.15	0.25	-	-	0.60	0.90	-	-	-	-
25C8	0.20	0.30	-	-	0.60	0.90	-	-	-	-
30C8	0.25	0.35	-	-	0.60	0.90	-	-	-	-
35C8	0.30	0.40	-	-	0.60	0.90	-	-	-	-
45C8	0.40	0.50	-	-	0.60	0.90	-	-	-	-
55C8	0.50	0.60	-	-	0.60	0.90	-	-	-	-
27C15/27Mn2	0.22	0.32	0.10	0.35	1.30	1.70	-	-	-	-
37C15/27Mn2	0.32	0.42	0.10	0.35	1.30	1.70	-	0.020	-	0.035
SAE 1016	0.13	0.18	-	-	0.60	0.90	-	0.030	-	0.050
SAE 1025	0.22	0.28	-	-	0.30	0.60	-	0.030	-	0.050
SAE 1027	0.22	0.29	-	-	1.20	1.55	-	0.040	-	0.050
SAE 1030	0.28	0.34	-	-	0.60	0.90	-	0.030	-	0.050
SAE 1035	0.32	0.38	-	-	0.60	0.90	-	0.030	-	0.050
SAE 1036B	0.32	0.37	0.15	0.30	1.20	1.50	-	0.025	-	0.025
SAE 1038	0.35	0.42	-	-	0.60	0.90	-	0.030	-	0.050
SAE 1040	0.37	0.44	-	-	0.60	0.90	-	0.030	-	0.050
SAE 1045	0.43	0.50	-	-	0.60	0.90	-	0.030	-	0.050
SAE 1045H	0.42	0.51	0.15	0.35	0.50	1.00	-	0.040	-	0.050
SAE 1050	0.48	0.55	-	-	0.60	0.90	-	0.030	-	0.050
SAE 1053	0.48	0.55			0.70	1.00	-	0.030	-	0.050
SAE 1060	0.55	0.65	-	-	0.60	0.90	-	0.030	-	0.050
SAE 1522	0.18	0.24	-	-	1.10	1.40	-	0.030	-	0.050
SAE 1524	0.19	0.25	-	-	1.35	1.65	-	0.030	-	0.050
SAE 1541	0.36	0.44	-	-	1.35	1.65	-	0.030	-	0.050
SAE 1548	0.44	0.52			1.10	1.40		0.025		0.0150
C 14	0.10	0.18	-	-	0.40	0.70	-	-	-	-
C 14/15mn3	0.12	0.18	0.10	0.20	0.70	0.90	-	-	-	-
C 15	-	0.20	-	-	0.30	0.60	-	-	-	-
C 22.8/P250GH	0.18	0.23	-	0.40	0.30	0.90	-	0.025	-	0.015
C 30	0.27	0.34	-	0.40	0.50	0.80	-	0.045	-	0.045
C 35	0.32	0.39	-	0.40	0.50	0.80	-	0.045	-	0.045
C 40	0.37	0.44	-	0.40	0.50	0.80	-	0.045	-	0.045
C 45	0.42	0.5	-	0.40	0.50	0.80	-	0.045	-	0.045
C 45E/CK 45	0.42	0.5	-	0.40	0.50	0.80	-	0.045	-	0.045
C 48	0.45	0.52	0.15	0.40	0.50	0.80		0.030	-	0.030
CF 53										
C 55	0.47	0.55	-	0.40	0.60	0.90	-	0.045	-	0.045

Grade	Forging Quality-Chemical Composition %									
	C		Si		Mn		P		S	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
C 60	0.57	0.65	-	0.40	0.60	0.90	-	0.045	-	0.045
ASTM A105	-	0.35	-	0.35	0.60	1.05	-	0.040	-	0.050
ASTM A 350 LF2	-	0.30	0.15	0.30	-	1.35	-	0.035	-	0.040
ASTM A 694 F65	-	0.26	0.15	0.35	-	1.40	-	0.025	-	0.025
EN 2A/040 A 10	0.08	0.13	0.10	0.40	0.30	0.50	-	0.050	-	0.050
EN 3B, 070 M 20	0.16	0.24	0.10	0.40	0.50	0.90	-	0.050	-	0.050
EN 32 B	0.10	0.18	0.05	0.35	0.60	1.00	-	0.050	-	0.070
EN 201	-	0.18	0.05	0.35	1.10	1.50	-	0.050	-	0.050
EN 14B	0.20	0.30	0.10	0.35	1.30	1.70	-	0.060	-	0.060
EN 8	036	0.44	0.10	0.40	0.60	1.00	-	0.050	-	0.050
EN 8A	033	0.38	0.10	0.40	0.70	0.90	-	0.050	-	0.050
EN 8C	038	0.43	0.05	0.35	0.70	0.90	-	0.060	-	0.060
EN 8D	0.40	0.45	0.10	0.40	0.70	0.90	-	0.050	-	0.050
EN 9	0.50	0.60	0.10	0.50	0.50	0.90	-	0.050	-	0.050
EN 43B / 080A47	0.45	0.50	0.10	0.40	0.70	0.90	-	0.050	-	0.050
EN 43C	0.50	0.55	0.10	0.40	0.70	0.90	-	0.050	-	0.050
EN 43D / 060 A 62	0.60	0.65	0.10	0.40	0.50	0.70	-	0.050	-	0.050
EN 42	0.70	0.82	0.10	0.35	0.60	0.80	-	0.050	-	0.050
EN 15	0.32	0.40	0.10	0.40	1.30	1.70	-	0.050	-	0.050
EN 15B	0.32	0.40	0.10	0.40	1.00	1.40	-	0.050	-	0.050
S10C	0.08	0.13	0.15	0.35	0.30	0.60	-	0.030	-	0.035
S12C	0.10	0.15	0.15	0.35	0.30	0.60	-	0.030	-	0.035
S15C	0.13	0.18	0.15	0.35	0.30	0.60	-	0.030	-	0.035
S20C	0.18	0.23	0.15	0.35	0.30	0.60	-	0.030	-	0.035
S25C	0.22	0.15	0.15	0.35	0.30	0.60	-	0.030	-	0.035
S30C	0.27	0.15	0.15	0.35	0.60	0.90	-	0.030	-	0.035
S30C	0.32	0.15	0.15	0.35	0.60	0.90	-	0.030	-	0.035
S38C	0.35	0.15	0.15	0.35	0.60	0.90	-	0.030	-	0.035
S40C	0.37	0.15	0.15	0.35	0.60	0.90	-	0.030	-	0.035
S43C	0.40	0.15	0.15	0.35	0.60	0.90	-	0.030	-	0.035
S45C	0.42	0.15	0.15	0.35	0.60	0.90	-	0.030	-	0.035
S48C	0.45	0.15	0.15	0.35	0.60	0.90	-	0.030	-	0.035
S53C	0.50	0.15	0.15	0.35	0.60	0.90	-	0.030	-	0.035
S55C	0.52	0.15	0.15	0.35	0.60	0.90	-	0.030	-	0.035
S58C	0.55	0.15	0.15	0.35	0.60	0.90	-	0.030	-	0.035

Grade	Low Alloy Steel Chemical Composition %																		
	C		Si		Mn		P		S		Cr		Mo		Ni		V		Others
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	
15Cr3	0.12	0.18	0.15	0.40	0.40	0.60	-	0.035	-	0.035	0.40	0.70	-	-	-	-	-	-	
16MnCr5	0.14	0.19	-	0.40	1.00	1.30	-	0.035	-	0.035	0.80	1.10	-	-	-	-	-	-	
16MnCrS5	0.14	0.19	-	0.40	1.00	1.30	-	0.035	0.020	0.040	0.80	1.10	-	-	-	-	-	-	
17Cr3	0.14	0.20	-	0.40	0.60	0.90	-	0.035	-	0.035	0.70	1.00	-	-	-	-	-	-	
18CrNiMo7-6	0.15	0.21	0.15	0.40	0.50	1.80	0.25	0.35	1.40	1.70	-	-	-	-	-	-	-	-	N2:80-150 ppm
19CrNi5	0.16	0.21	0.15	0.35	0.70	1.10	-	0.20	0.015	0.030	0.80	1.20	-	0.10	0.80	1.20	-	-	
20MC5	0.17	0.23	0.15	0.35	1.10	1.40	-	0.025	-	0.020	1.00	1.30	-	0.06	-	0.25	-	-	
20MnCr5	0.17	0.22	-	0.40	1.10	1.40	-	0.035	-	0.035	1.00	1.30	-	-	-	-	-	-	
20MnCrS5	0.17	0.22	-	0.40	1.10	1.40	-	0.035	0.020	0.040	1.00	1.30	-	-	-	-	-	-	
20NiCrMo2	0.17	0.23	0.15	0.40	0.65	0.95	-	0.035	-	0.035	0.35	0.70	0.15	0.25	0.40	0.70	-	-	
25NoCr5	0.19	0.23	0.15	0.40	0.75	0.95	-	0.035	0.020	0.035	0.90	1.00	0.40	0.45	-	0.25	-	-	
27MnCrB5	0.24	0.30	-	0.40	1.10	1.40	-	0.035	-	0.040	0.30	0.60	-	0.08	-	0.30	-	-	B: 8-50 ppm
30Mn5	0.35	0.40	0.35	0.50	1.50	1.80	-	0.025	0.030	0.045	0.30	0.50	-	0.10	-	0.20	-	-	
34CrMo4	0.30	0.37	-	0.40	0.60	0.90	-	0.035	-	0.035	0.90	1.20	0.15	0.30	-	-	-	-	
35CrMn5	0.33	0.40	0.15	0.40	0.80	1.10	-	0.020	0.015	0.030	1.00	1.30	-	0.10	-	0.30	-	-	
37Cr4	0.34	0.41	-	0.40	0.60	0.90	-	0.035	-	0.035	0.90	1.20	-	-	-	-	-	-	
40 CD 4	0.35	0.40	0.15	0.30	0.70	0.90	-	0.035	-	0.040	0.80	1.10	0.15	0.25	-	-	-	-	
40Cr4	0.35	0.45	0.10	0.35	0.60	0.90	-	0.025	-	0.025	0.90	1.20	-	-	-	-	-	-	
41Cr4	0.38	0.45	-	0.40	0.60	0.90	-	0.035	-	0.035	0.90	1.20	-	-	-	-	-	-	
42CrMo4	0.38	0.45	-	0.40	0.60	0.90	-	0.035	-	0.035	0.90	1.20	0.15	0.30	-		-	-	
46CR4	0.45	0.49	0.15	0.40	0.80	0.90	-	0.025	-	0.025	0.90	1.00	-	-	-	-	-	-	
46Mn5	0.44	0.50	0.25	0.45	1.15	1.35	-	0.025	-	0.015	0.10	0.20	-	0.06	-	0.10	-	-	
100Cr6	0.93	1.05	0.15	0.35	0.25	0.45	-	0.025	-	0.015	1.35	1.60	-	0.10	-	-	-	-	
605M36	0.32	0.40	0.15	0.30	1.30	1.70	-	0.025	0.020	0.035	-	0.65	0.22	0.32	-	-	-	-	
708A42	0.40	0.45	0.15	0.35	0.70	1.00	-	0.035	0.030	0.050	0.90	1.20	0.15	0.25	-	-	-	-	
708A42	0.40	0.45	0.20	0.35	0.75	1.00	-	0.025	-	0.030	0.90	1.20	0.15	0.25	-	-	-	-	
709M40	0.36	0.44	0.20	0.30	0.70	1.00	-	0.025	0.020	0.030	0.90	1.20	0.25	0.35	-	-	-	-	
EN 18	0.36	0.44	0.10	0.35	0.60	0.90	-	0.035	-	0.040	0.90	1.20	-	-	-	-	-	-	
EN 18 D	0.38	0.43	0.10	0.35	0.60	0.80	-	0.035	-	0.040	0.90	1.20	-	-	-	-	-	-	
EN 19	0.36	0.44	0.10	0.35	0.75	1.00	-	0.035	-	0.040	0.90	1.20	0.25	0.35	-	-	-	-	
EN 19C	0.40	0.45	0.10	0.35	0.75	1.00	-	0.035	-	0.040	0.90	1.20	0.15	0.25					
EN 31	0.95	1.10	0.10	0.35	0.40	0.70	-	0.035	-	0.040	1.20	1.60	-	-	-	-	-	-	
EN 353	0.14	0.20	-	0.35	0.50	1.00	-	0.050	-	0.050		1.25	0.08	0.15	1.00	1.50	-	-	

Grade	Low Alloy Steel Chemical Composition %																		
	C		Si		Mn		P		S		Cr		Mo		Ni		V		Others
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	
EN354	-	0.20	-	0.35	0.50	1.00	-	0.050	-	0.050	0.75	1.25	0.10	0.20	1.50	2.00	-	-	
EN36 C	0.12	0.18	0.10	0.35	0.30	0.60	-	0.050	-	0.050	0.60	1.10	0.10	0.25	3.00	3.75	-	-	
SAE4130	0.28	0.33	0.15	0.35	0.40	0.60	-	0.030	-	0.040	0.80	1.10	0.15	0.25	-	0.25	-	-	
SAE4140H	0.37	0.44	0.15	0.35	0.65	1.10	-	0.030	-	0.040	0.75	1.20	0.15	0.25	-	0.25	-	-	
SAE4142H	0.39	0.46	0.15	0.35	0.65	1.10	-	0.030	-	0.040	0.75	1.20	0.15	0.25	-	0.25	-	-	
SAE4145H	0.42	0.49	0.15	0.30	0.65	1.10		0.030	-	0.04	0.75	1.2	0.15	0.25	-	0.25	-	-	
SAE4150H	0.47	0.54	0.15	0.30	0.65	1.10	-	0.030	-	0.04	0.75	1.2	0.15	0.25	-	-	-	-	
SAE52100		0.98	1.10	0.15	0.35	0.25	0.45	-	0.025	-	0.025	1.30	1.60	-	-	-	-	-	
SAE8219	0.15	0.20	0.15	0.35	1.05	1.40	-	0.025	0.010	0.020	0.45	0.75	0.08	0.20	0.20	0.45	-	-	
SAE8620	0.18	0.23	0.15	0.35	0.70	0.90	-	0.030	-	0.040	0.40	0.60	0.15	0.25	0.40	0.70	-	-	
SAE8620H	0.17	0.23	0.15	0.35	0.60	0.95	-	0.040	-	0.030	0.35	0.65	0.15	0.25	0.35	0.75	-	-	
SAE8622H	0.20	0.25	0.15	0.35	0.75	1.00	-	0.020	0.010	0.040	0.40	0.60	0.30	0.40	0.40	0.70	-	-	
SAE8627H	0.24	0.30	0.15	0.35	0.60	0.95	-	0.040	-	0.030	0.35	0.65	0.15	0.25	0.35	0.75	-	-	
SCM 415	0.13	0.18	0.15	0.35	0.60	0.90	-	0.03	-	0.03	0.9	1.2	-	-	-	0.25	-	-	
SCM 415H	0.12	0.18	0.15	0.35	0.55	0.95	-	0.03	-	0.03	0.85	1.25	-	-	-	0.25	-	-	
SCM 420	0.18	0.23	0.15	0.35	0.60	0.90	-	0.030	-	0.030	0.90	1.20	-	-	-	0.25	-	-	
SCM 420HV	0.18	0.23	0.15	0.35	0.60	0.85	-	0.030	0.010	0.030	0.90	1.20	0.15	0.30	-	-	-	-	N2:150-200 ppm
SCR 420HV	0.18	0.23	0.15	0.35	0.60	0.85	-	0.030	0.010	0.030	0.90	1.20	-	-	-	-	-	-	N2:150-200 ppm
SMN 443H	0.39	0.46	0.20	0.35	1.35	1.70	-	0.025	-	0.015	-	0.35	-	0.05	-	0.15	-	-	
SUJ 2	0.95	1.10	0.15	0.35	-	0.50	-	0.020	-	0.020	1.30	1.60	-	-	-	-	-	-	
SS4510	0.18	0.24	0.30	0.60	1.40	1.70	-	0.035	0.015	0.035	-	0.25	-	0.30	-	0.30	-	0.05	
STE460	-	0.20	0.10	0.60	1.50	1.70	-	0.030	-	0.025	-	0.30	-	0.10	-	0.80	-	0.20	
F11	0.05	0.15	0.50	1.00	0.30	0.60	-	0.025	-	0.025	1.00	1.50	0.44	0.65					
F12	0.05	0.15	-	0.50	0.30	0.60	-	0.025	-	0.025	0.80	1.25	0.44	0.65					
F22	0.05	0.15	-	0.50	0.30	0.60		0.025		0.025	2.00	2.50	0.90	0.10					

Grade	Micro Alloy Steel Chemical Composition %																	
	C		Si		Mn		P		S		Cr		Mo		Ni		V	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
27MnSiVS6	0.25	0.30	0.50	0.80	1.30	1.60	-	0.035	0.030	0.50	0.05	0.15	-	-	-	-	0.08	0.13
38MnS6	0.36	0.40	0.50	0.60	1.40	1.55	-	0.015	0.030	0.040	0.10	0.20	-	-0.055	-	0.10	-	0.02
38MnS6	0.36	0.41	0.50	0.70	1.30	1.60	-	0.020	0.045	0.060	0.10	0.20	-	0.10	-	0.15	0.08	0.13
38MnSiV6	0.35	0.40	0.50	0.70	1.30	0.15	-	0.035	-	0.065	0.15	0.20	-	-	-	-	0.08	0.13
SBMA 740	0.40	0.50	0.15	0.35	0.85	1.35	-	0.030	-	0.050	-	-	-	-	-	-	0.16	0.2
S70CVS1	0.67	0.73	0.15	0.35	0.45	0.55	-	0.045	-0.055	0.070	0.10	-0.20	-	-	0.40	0.12	0.03	0.05
S36CVS2	0.34	0.38	0.60	0.75	0.95	1.05	-	0.03	0.065	0.085	-	0.25	-	-	-	0.25	0.25	0.30

Grade	Welding electrode Quality Chemical Composition %													
	C		Si		Mn		P		S		Cr		Mo	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	-	-	Min	Max
EM 12K	0.05	0.15	0.10	0.35	0.80	1.25	-	0.030	-	0.030	-	-	-	-
ER 70S-6	0.07	0.10	0.80	1.00	1.40	1.60	-	0.020	-	0.020	-	-	-	-
ER 90S-D2	0.07	0.12	0.50	0.80	1.60	2.10	-	0.025	-	0.025	-	-	0.40	0.60
S2Mo	0.07	0.15	0.05	0.20	0.95	1.30	-	0.025	-	0.025	-	-	0.45	0.65
EWNR	0.10	-	0.03	0.38	0.62	-	0.025	-	0.025	-	-	-	-	
RG Wire	0.05	0.09	-	0.04	0.45	0.60	-	0.010	-	0.010	-	-	-	0.02
EB 2	0.07	0.15	0.05	0.30	0.45	1.00	-	0.025	-	0.025	1.00	1.75	0.45	0.65

Grade	Free Cutting Steel Chemical Composition %											
	C		Si		Mn		P		S		Pb	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
EN 1A	-	0.15	-	-	0.9	1.3	-	0.07	0.20	0.30	-	-
EN 1A(Pb)	-	0.15	-	-	0.9	1.3	-	0.07	0.20	0.30	0.20	0.30
EN 8M	0.32	0.4	-	0.25	1	1.4	-	0.06	0.12	0.20	-	-
EN 15AM	0.32	0.4	-	0.25	1.3	1.7	-	0.06	0.12	0.20	-	-
EN 8DM/212A42	0.4	0.45	-	0.25	1	1.3	-	0.06	0.12	0.20		
11SMn30	-	0.14	-	0.05	0.9	1.3	-	0.11	0.27	0.33	-	-
11SMnPb30	-	0.14	-	0.05	0.9	1.3	-	0.11	0.27	0.33	0.20	0.35
SAE 12L14	-	0.15	-	-	0.85	1.15	0.04	0.09	0.26	0.35	0.15	0.35
SAE 1117	0.14	0.2	-	-	1	1.3	-	0.04	0.08	0.13	-	-
SAE 1118	0.14	0.2	-	-	1.3	1.6	-	0.04	0.08	0.13	-	-
SAE 1141	0.37	0.45	-	-	1.35	1.65	-	0.04	0.08	0.13	-	-
SAE 1144	0.4	0.48	-	-	1.35	1.65	-	0.04	0.08	0.13	-	-
SAE 1146	0.42	0.49	-	-	0.7	1	-	0.04	0.08	0.13	-	-

Grade	Spring Steel Chemical Composition %																	
	C		Si		Mn		P		S		Cr		Mo		V		B	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
EN 45A	0.55	0.60	1.80	2.10	0.80	1.00	-	0.040	-	0.035	0.15	0.30			-	-	-	-
SUP 9	0.52	0.60	1.15	0.35	0.65	1.00	-	0.040	-	0.035	0.65	0.95			-	-	-	-
SUP 9A	0.56	0.64	1.15	0.35	0.70	0.95	-	0.040	-	0.035	0.70	1.00			-	-	-	-
SUP 11A	0.56	0.64	1.15	0.35	0.70	1.00	-	0.040	-	0.035	0.70	1.00			-	-	0.0005	-
65Si7	0.60	0.68	1.50	1.80	0.70	1.00	-	0.050	-	0.050	-	-			-	-	-	-
SAE 9254	0.51	0.59	1.20	1.60	0.60	1.00	-	0.040	-	0.040	0.60	0.80			-	-	-	-
50CrV4	0.47	0.55	-	0.40	0.70	0.80	-	0.040	-	0.030	0.90	1.20			0.10	0.20	-	-
52Cr4M02V	0.48	0.56	0.15	0.40	0.70	1.10	-	0.03	-	0.03	0.90	1.20	0.15	0.25	0.07	0.12	-	-

Grade	Seamless Boiler Quality Grade Chemical Composition %																			
	C		Si		Mn		P		S		Cu		Cr		Ni		Mo		V	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
SAE 106 Gr B	-	0.30	0.10	-	0.29	1.06	-	0.40	-	0.035	-	0.40	-	0.40	-	0.40	-	0.15	-	0.08
SAE 210 Gr A1	-	0.27	0.10	-	0.93		-	0.40	-	0.035	-	-	-	-	-	-	-	-	-	-
SAE 210 Gr C	-	0.35	0.10	-	0.29	1.06	-	0.40	-	0.035	-	-	-	-	-	-	-	-	-	-
A 213 - T11	0.05	0.15	0.50	1.00	0.30	0.60	-	0.025	-	0.025	-	-	1.00	1.50	-	-	0.44	0.65	-	-
A 213 - T12	0.05	0.15	-	0.50	0.30	0.60	-	0.025	-	0.025			0.80	1.25	-	-	0.44	0.65		
A 213 - T22	0.05	0.15	-	0.50	0.30	0.60	-	0.025	-	0.025	-	-	1.90	2.60	-	-	0.87	1.13	-	-
A 250 - T11	0.05	0.15	0.50	1.00	0.30	0.60	-	0.025	-	0.020	-	-	1.00	1.50	-	-	0.44	0.65	-	-
A 250 - T12	0.05	0.15	-	0.50	0.30	0.60	-	0.030	-	0.020			0.80	1.25	-	-	0.44	0.65		
A 250 - T22	-	0.15	-	0.50	0.30	0.60	-	0.025	-	0.020	-	-	1.90	2.60	-	-	0.87	1.13	-	-
A 335 - P11	0.05	0.15	0.50	1.00	0.30	0.60	-	0.025	-	0.025	-	-	1.00	1.50	-	-	0.44	0.65	-	-
A 335 - P12	0.05	0.15	-	0.50	0.30	0.60	-	0.025	-	0.025			0.80	1.25	-	-	0.44	0.65		
A 335 - P22	0.05	0.15	-	0.50	0.30	0.60	-	0.025	-	0.025	-	-	1.90	2.60	-	-	0.87	1.13	-	-

Grade	Rail Steel Chemical Composition %																				
	C		Si		Mn		P		S		Cr		Mo		Ni		V		AL		
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Others
R260	0.62	0.80	0.15	0.58	0.70	1.20	-	0.025	-	0.025	-	0.15	-	0.02	-	0.10	-	0.3	-	0.004	N: 90ppm max; O: 20ppm max; H: 2.5ppm max
VAR99-2	0.78	0.81	0.25	0.35	1.14	1.23	-	0.020	0.005	0.020	0.20	0.25	0.04	0.05	0.20	0.25	-	-	-	0.010	N: 90ppm max; O: 20ppm max; H: 1.5ppm max

Technical Properties - BPSL

Type of Steel	Grades
Free Cutting Steel	EN1A(L) /EN1A(PB) / 12L14 / SAE12L14 / 11SMNPB30 / 12L15 / SAE12L15CR / 10SPB20 EN1A / 11SMN30 / SAE1215 / SAE1215(Cr)
Mild Steel	SAE1006 / SAE1006(CHQ) / C4C SAE1008 SAE1010 / SAE1010(CHQ) / SWRCH10A / EN2A SAE1012 / SAE1014 SAE1015 / SAE1015(CHQ) / C15 / S10C / S15C / C10 SAE1018 / SAE1018M / SAE1018(CHQ) / EN32B / SWRCH22A / GRADE 250 / 20C8 /SWRCH18A
Spring Steel	55SI7 / EN45A / En45 60SI7 SAE9254 / 55SiCr63 / 56SICR7 SUP9 / SUP9A / SUP11A
High Mn Steel	20MN2M / ST 52.3 / A105 / S355J2 / S355J2C / 20MN2 EN15 / EN15A / JDMA1041F / SAE1541 / 37C15 / 27C15 / SAE1524 / SAE1541H / EN14B SAE1547 / SAE1547(RH) / SAE1547RH(M)

Type of Steel	Grades
Boron Steel / (CHQ)	32CRB4 19MnB4HC / 19MNB4 / 19MNB4M 39MNCRB6-2 SAE10B21 / SAE10B21(CHQ) SAE10B33 / SAE10B33M / SAE10B33(M) / SAE10B35 / SAE10B35(M) SAE15B25 / SAE15B25(CHQ) SAE15B41 / SAE15B41(H) / SAE15B41(M) 38B3
Bearing Steel	SAE52100 / EN31 / 100CR6
Semi Free Cutting Steel	EN8M / EN8DM SAE1117 / SAE1117(Cr) / SAE1118 SAE1137 / SAE1137(Cr) SAE1141 / SAE1144 / AISI1144
Carbon Steel	S20C / SAE1020 / 20C8 / EN3D / SAE1022 SAE1025 / SAE1026 / SAE1030 35C8 / C35 /C35M / EN8 / EN8A / EN8C / S35C / SAE1035 / SAE1038 / EN8ACR / SAE1038R EN8D / EN8DCR / SAE1040 / C40 / C40E EN43 / EN43A / EN43B / EN43BCR / S43C / SAE1043 / C43 45C8 / C45 / C45E / C45R / C45V / CK45 / S45C / S45CR / SAE1045 / SAE1045H / SAE1045HM / SAE1045H(M)CHQ / SAE1045H(CHQ) / SAE1045H(CR) / SAE1046 / SAE1046M / C45CR / E360 S48 / C48D / JIS48C / JIS(S45C) / JIS35C / JIS45C / S48C / C48 / XC45 SAE1049 / SAE1050 / SAE1050M / S53C / EN9 / 55C8 / SAE1055 / GR50 / EN9CR / UC1 / Cf53 C60 / SAE1060 / SAE1065

Type of Steel	Grades
High Carbon Steel	C70 / SAE1070
	HC78BX
	HC78B
	HC72A
	HC82A / HC82B / SWRH82B / 81 / 85 / HC82BCR / HC72A
Chromium-molybdenum Steel	20CRM04
	42CrMo4 / 42Cr4Mo2 / 42CRM0S4 / EN19 / EN19C / EN19M / SAE4140 / SAE4140H / SAE4142 / SAE4130 / SAE4137 / 708A42/ 708M40 / 42CrMo4(CHQ) / 42CRM04H / T11
	SCM415 / SCM415H / SCM415HV / SCM415(HM) / SCM418 / SCM418H/ SCM420 / SCM420H / SCM420HV / SCM435 / SCM435H
Chromium-molybdenum Vanadium Steel	52CR4M02V / 52CRM0V4 / 51CRM0V4
Chromium-nickel Molybdenum Steel	En24
	EN353 / EN355 / 815M17
	SAE8620 / SAE8620H / SAE8617 / SAE8620M

Type of Steel	Grades
Chromium Vanadium Steel	31CRV3
	EN47 / 50CRV4 / 51CRV4 / 50CR4V2
Low Carbon Chromium-manganese Steel	16MNCR5 / 16MNCR5H / 16MNCR5(LSI) / 16MNCRS5 / 16MN5CR
	16/20MNCR5
	20MNCR5 / 20MnCr5H / 20Mncr5HH / 20MNCRS5
	17CR3
	SCR420H / SCr420HV / SCR420H2V2
Medium Carbon Chromium-manganese Steel	36CrMn4H
	40CR1 / 40CR4 / 40CR4B / 40CR4C / 41CR4 / EN18 / EN18A / EN18C / EN18D / 41CR4CHQ / EN18B / 41CRS4 / 41CRS4HH / 41Crs4 / EN18D / 37CRS4
High Manganese Molybdenum Steel	605M36
	EN16 / 35MN6M03
Micro Alloy Steel	MT15

Auto Billet Grinding

Reheating Furnace: (125 TPH) **Walking Beam Type:** Auto controlled.

Fuel: pre-mixed BF Gas & Coke Oven Gas.

Descaler: High Pressure water jet with 240 Bar to ensure removal of scales deposited on the billet surface.

Online Dimension Monitoring system: From Zumbach, Switzerland.

KOCKS Technology with AUL (Adjustment Under Load): 3-Roll Technology from KOCKS, Germany – To ensure excellent surface finish and exceptional close tolerance (i.e. ¼ DIN Tolerance) with ovality less than 0.20 mm as per the section.

Auto NDT line with UT facility: From GE, Germany & Magnetic Flux Leakage Testing facility from Dr. Foerster, Germany.

Drawing

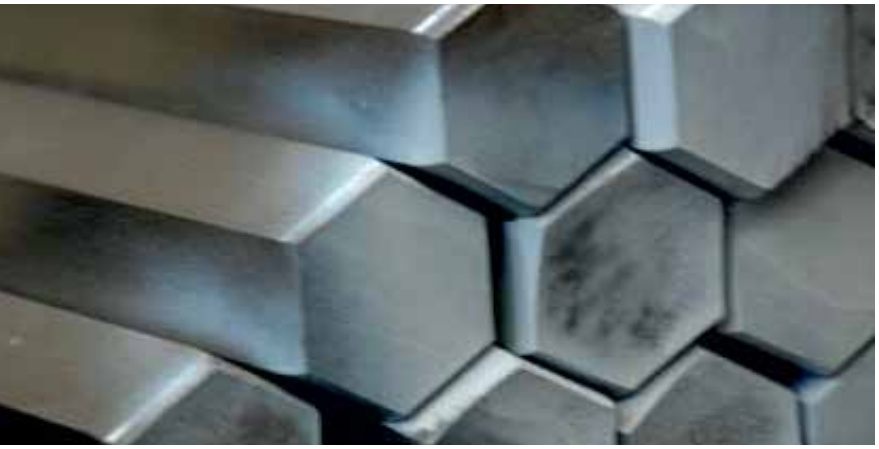
- **Drawing Facility (3500 MT, Month)**
- **Coil to Bar & Coil to Coil Drawing line –** 2 nos. for size 5.5mm to 30mm from SMS Schumag, Germany.
- **Bar to Bar Drawing line -** For Size 20mm to 90mm from Danieli Centromaskin, Italy Online NDT (UT +ECT) by G.E. and Dr. Forester, Germany.

Peeling

- **Peeling Facility (1500 MT, Month)**
- **Bar to Bar Peeling:** For Size 20mm to 90mm from SMS Schumag, Germany.
- Online NDT (UT +ECT) by G.E. and Dr. Forester, Germany
- Centerless Grinding Facility (2000 MT, Month) For Size 6.0mm to 90mm from SMS Schumag, Germany.

Heat Treatment

- **Heat Treatment (3500 MT, Month)**
- For Size 16mm to 90mm Bar Hardening & tempering Furnace
- **Supplier:** SMS ELOTHERM, Germany
- Continuous roller hearth furnace
- **Supplier:** LOI THERMOPROCESS, Germany
- **Bell Anneling furnace**
- For coils 5.5 mm to 40 mm
- **Supplier:** ACE Furnaces Pvt. Ltd.




MEER
SMS group

Development & Facilities - Vijayanagar

Our DSIR approved R&D Centers are well equipped with sophisticated world class infrastructure facilities. Continuous measures are taken to improve the process of steelmaking to achieve high quality steels. We focus on developing In-House technologies for our steel–making and engage in a broad range of product Development activities.

Development of New steel grades

- LRPC 15.70 mm, 1960 – LRPC Strands of 1960 tensile strength with breaking load of 294 KN for girders
- HC82A & HC72A for Tyre cord application
- Fe550D - EDS for Seismic resistant application
- Resulphurised & Rephosporised steels for Free cutting application

Quality Management systems

Our Company's commitment to Total Quality in sourcing, process, products, delivery and services has been proven by continual improvements achieved by dedicating workforce for our valued customers.

Quality Systems

- ISO 9001
- ISO 14001
- ISO 18001
- IATF 16949:2016

QMS features

Focus on Product quality:

- Lower hydrogen and related defects
- Lower oxygen levels and inclusion control
- Reduction in the chemical composition variation from heat to heat
- Reduction to hardness by slow cooling
- Improvement of surface quality of all products particularly cold headed quality (CHQ) and free cutting steels
- Controlled level of nitrogen in electrode grade steels

R&D Equipment's at VJNR Plant:

1. SEM (Scanning Electron Microscope)
2. Stereo Microscope
3. Optical Microscope
4. 3Glow Discharge Spectro
5. Energy Dispersive X-Ray Spectrometer (EDS) (QEMSCAN)
6. X-Ray Diffractometer
7. Gleeble 3800, etc.

R & D Facilities & Equipment - Salem

Our DSIR approved R&D Centers are well-equipped with sophisticated world-class infrastructure facilities. We focus on developing in-house technologies for Iron Making, Steel Making, Rolling and engage in a broad range of product development activities.

Development of new Steel grades

- High Carbon and Chromium containing Bearing Steel for Races and Rollers
- Medium Carbon Steel for Hub Bearing
- Micro Alloy Steel for Transmission Parts
- High Tensile Spring Steel for Coil and Leaf Spring
- Tool Steel for Doffer Wire and Rock Drills
- Free Cutting Steel with improved Machinability for Safety Critical Parts
- Grinding Media Steel Balls for Mining Industry
- Cold Heading Quality Steel for High Tensile Fasteners

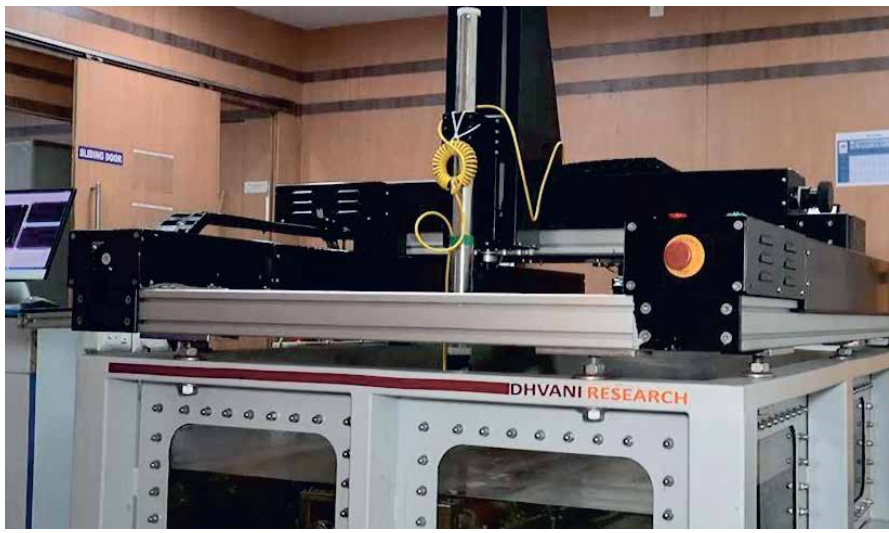
Intellectual Property Rights

- Scientific research papers published - 36
- 16 Patents filed and received 12 grants

R&D Equipment's

- Scanning Electron Microscope with EDS and EBSD
- Correlative Microscopy
- Immersion Ultrasonic Testing Machine
- Rolling Contact Fatigue Testing Machine
- Rotary Bending Fatigue Testing Machine
- Air Induction Furnace
- Simufact Rolling Software
- Tundish Water Model
- Thermal Image Camera
- Hi-Speed Camera
- HYDRIS for Hydrogen Measurement
- Micro Vickers Hardness Machine
- Universal Testing Machine
- Instrumented Impact Machine
- Automatic Cutting Machine
- Automatic Plane Grinding Machine
- Automatic Polishing Machine
- Electrolytic Polishing Machine
- Vibro-Polishing Machine
- Mini Sputter Coater
- CRI/CSR Testing Machine


paltro
UNITEST-350


SLIDING DOOR
DHVANI RESEARCH


STRUERS PLANE GRINDING MACHINE

Automatic Slag Detection System at EOF:

- Real-time slag detection allows for timely intervention, improving safety, performance and product consistency.
- Helps in achieving lower Phosphorous levels in the final product.

Automatic Slag Detection System at CCM:

- Acoustic based detection system which monitors acoustic emissions of steel flow through the ladle shroud.
- Automatic shut-off of the slide gate during the onset of slag in a shroud.

VD Camera:

- Enables the operator to observe the efficiency of argon stirring of the molten metal in the vacuum degassing.
- process, refractory conditions, surface slag conditions, and dynamic alloy additions at VD.

Mould Oscillator:

- Provides sinusoidal and non-sinusoidal oscillatory motion which helps to controls oscillation mark depth on billet/bloom surface.
- Stroke length ranges from 0.20mm.
- Improves surface quality of the billets/blooms.

Automatic Mould Powder Feeder:

- Maintains constant powder thickness in the mould to avoid level fluctuations.
- Improves steel quality by maintaining consistent heat transfer, ensuring a lubricating powder film, and enhancing surface quality.

Final Electro-Magnetic Stirrer:

- Improvement of cast structure homogeneity with lower centerline porosity and segregation through molten metal stirring at the final stages of solidification.
- Applicable sizes are 250X250, 280x370 and 340x400mm.

Auto Bloom Marking:

- Accurate traceability of each bloom throughout the production process and helps maintain uniformity in product specifications.

Level 2 Automation & Historian Server:

- Process models with real-time data for efficient decision-making during the process.
- Dashboards at multiple stages for monitoring the process; easy retrieval of data (up to 15 years).

Billet Grinding

- Automated billet grinding with precise depth control up to 0.5 mm
- Input size ranges from 160 Sq. 250 Sq and 200 Dia

Descaler

- Scales on the billet/bloom surface are removed with high water pressure of 250 Bar
- Adjustable header position for various sizes like 250X250, 340x340 and 310 Dia
- Improves the surface quality of Rolled products.

Reducing Sizing Block

- 3 Roll 4 stand technology to achieve closer dimensional tolerance than IS 3739.
- Size ranges from 16 to 65 mm
- Improves the surface finish of bars and wire rod coils.

Online Bloom Weighment:

- Ensures accurate tracking of the bloom's weight, optimizes material handling and improves process control before the cooling stage at CCM.
- Improves the yield % in rolling mill process.

Online Defect Detection System:

- Advanced surface inspection system for wire rod coils based on imaging technology.
- Higher detection accuracy and greater data depth.

Hot Profiler

- Online dimension control up to 0.01 mm accuracy.
- Any deviation in size can be detected and controlled during rolling itself.
- Size control can be done for products ranging from 5.5mm to 32mm for wire rods and 60 to 180 Dia & 55 to 140 RCS for bar products.

Auto slow cooling facility

- To improve the internal soundness of bloom products in sizes ranging from 60 to 180 Dia and 55 to 140 RCS.

Automatic Inspection Line

- Phased Array Ultrasonic Tester with the Detectability 0.5 / 0.8 mm SDH based on the specific customer requirement.
- Eddy Current Tester with the Detectability 0.20 mm Min.
- Size ranges from 20 to 200 dia. and 55 to 160 RCS Bars

Ball drop facility

To evaluate the impact resistance and fracture toughness of grinding media balls, size ranges from 25 to 150 mm.

Serve Oscillator:

- Provides sinusoidal and non-sinusoidal oscillatory motion which helps to controls oscillation mark depth.
- Strokes length ranges from 0.20mm
- Improves surface quality of the billets.

Descaler:

- Scales are removed with high water pressure of 220 Bar.
- Improves Quality of Rolled Product by preventing fusion of oxidized scale into the base material.

Billet Grinding:

- Automated billet grinding with precise depth control up to 0.5 mm
- Input size ranges from 165 Sq.

Enhanced Temperature control Systems:

- Fully automated recipe driven temperature control system to achieve minimum variation in finished mechanical properties.
- Increased product yield by controlling the repeatability of the number of uncooled and partially cooled head and tail end lengths.

Cobble Detection System:

- Strategically positioned Cobble and crop shears keeps the cobble in check.

QA Testing Equipment

A NABL-accredited laboratory as per ISO/IEC 17025, specializing in chemical, mechanical, and metallurgical testing essential for the production of special steel long products. Here are a few of them:

- X-ray Fluorescence Spectrometer
- CSR & CRI Equipment
- RDI & RI Equipment
- Optical Emission Spectrometers
- LECO Gas Analyzer for Oxygen, Nitrogen and Hydrogen
- LECO Carbon and Sulphur Analyzer
- Electric Discharge Machine
- Tensile Testing Machine
- Brinell, Rockwell, Vickers Hardness Tester
- Impact Testing Machine
- Cold Upset Testing Machines
- Jominy Hardenability Apparatus
- Optical Microscope

QA Inspection Equipment

- Automatic inspection lines with UST and ECA
- Portable Ultrasonic Testers
- Magnetic Particle Inspection
- Mobile Spectrometer
- Spectrometer–34 Channel X-ray Spectrometer
- Mobile Spectrometer (spark/arc mode)
- LECO CS-230 C-S analyser
- LECO RH-600 Hydrogen analyser
- LECO TC-500 Oxygen-Nitrogen analyser
- Strohlien apparatus
- Immersion Ultrasonic Testing Machine

- Optical Emission Spectrometer34 channel
- LECO C-S analyser
- Universal Testing M/c – 100/200/600/2000 KN max.
- IZOD & CHARPY notch measuring device
- Optical Upverted Microscope with computer software - Olympus-BX53
- Charpy Crushing Testing M/c including cryogenic unit with robotics tempering & feeding unit – 500J
- Cold Bending Machine – 200KN max.
- Hardness Testers – Digital Rockwell / Superficial Rockwell Brinell/Vickers/Computerised Micro Hardness Tester. Jominy
- Hardenability set up (vertical F/c)
- Cold & Hot Upset Testing M/c
- Automatic inspection lines with UST and ECT
- Portable Ultrasonic Testers
- Magnetic Particle Inspection
- Mobile Spectrometer

Auto NDT Line For Hot Rolled Bars

Supplier: Danieli Centro Maskin, Italy

- **PROCESS FLOW:** Straightening (Multi Roll) - NDT External (MFL) - Internal (Ultrasonic) NDT Bar Conditioning - Bundling - Strapping.

- **ULTRASONIC CRACK DETECTION SYSTEM**

  GE Sensing & Inspection Technologies, Germany

  - **Type:** Phased Array Ultrasonic Crack detection System, Model : ROWA B50/100PAT
  - **PROBES:** Rowa with 4 array probes 5 - 10MHz up to 128 elements for 16-56mm & 8 arrays 50-100mm diameter bars

- **MAGNETIC FLUX LEAKAGE TEST:** Dr. Forester Germany.
  - **Application:** Longitudinal surface defects on hot rolled bars .
  - **Model:** CIRCOFLUX DS6.145 SENSOR SYSTEM Ro100
  - **Detectability:** Longitudinal Defects of size - Length x Width x Depth = 10mm x 0.15mm x 0.15mm.

Packaging - Salem

Product	Packing
Wire Rod	Strapping at 5 places, 1 metallic strap & 4 Steel wire
Bars	4 metallic straps A metallic tag & a sticker label with details like Heat number, Grade, Size, Bundle number and Length.
Flat	4 metallic straps A metallic tag & a sticker label with details like Heat number, Grade, Size, Bundle number and Length.
RCS	4 metallic straps A metallic tag & a sticker label with details like Heat number, Grade, Size, Bundle number and Length.
Billet / Bloom	Loose packing. A sticker label with details like Heat number, Grade, Size, and Length.
Annealed Wire	Strapping at 5 places, one metallic strap & 4 Steel wire. HDPE Packing
Annealed Bar	4 metallic straps A metallic tag & a sticker with details like Heat number, Grade, Size, Bundle number and Length, HDPE Packing
Bright Bar	4 metallic straps A metallic tag & a sticker with details like Heat number, Grade, Size, Bundle number and Length. Rust preventive oil on the bars with HDPE Packing
GM Ball	Packing in Drum / Bag. Batch number, grade, volumetric & surface hardness, weight, size.

Colour coding, marking and packing as per the specific requirements of the customer.


JSW Steel NEOTREX

Awards & Recognition - Salem

- Sword of Honour and 5-Star Rating from British Safety Council
- Golden Peacock Award for Occupational Health & Safety
- IIM Sustainability Award
- ICQCC, NQCC, and CCQC First Category Awards
- ISQ TOPS Convention – 3rd Runner up in 2023, Winner in 2024
- Exceed Green Future Award
- CII – EHS Excellence Award
- TIMKEN Customer Award - Category: Alliance & Strategic Partner
- Schaeffler Customer Award - Category: Value

Steel Sustainability Champion for the 6th consecutive year

Leadership rating for 4th consecutive year in **Climate Change, 'A' rating in Water Security**

Global Energy Transition Change-makers Award for SEED Project

British Safety Council 5-star rating and Sword of Honor award

Included in the **Dow Jones World and Emerging Markets** Sustainability Indices

JSW Steel has received **Responsible Steel Certification** for **four manufacturing sites Vijayanagar, Dolvi, Tarapur** and **Salem**

JSW becomes **fastest growing brand in India over the last 10 years** - Interbrand

Received the **Iconic Brands of India 2024 Award** from ET NOW

Certification - Salem

Certificate	Name of Awarding Organisation	Theme of Certificate
ISO 9001:2015	Bureau Veritas / DQS	QMS
IATF 16949	Bureau Veritas	QMS
AS 9100 D:2016	DQS	QMS
ISO 14001:2015	Bureau Veritas	Environment Management System
ISO 45001:2018	Bureau Veritas	Health and Safety
ISO 50001:2018	Bureau Veritas	Energy Management System
Recognition for in-house R & D	Anna University	R & D
Boiler Quality Cast and rolled Products	Central Boilers Board	Manufacturing
PED Certification	TUV Nord Systems	Manufacturing
NABL Accreditation as per ISO/IEC 17025	NABL	Laboratory
Power Grid Approval	Power Grid Corporation of India Ltd.	MS & HT Billets & Blooms (IS2830) Coils / Bars (IS7283) and MS Rounds (Is2062)
European Interoperability Certificate	RINA	Rail Product Certificate

Certification - BPSL

- ISO 9001 : 2015
- IATF 16949
- ISO 14001 : 2015
- ISO 45001 : 2018
- RDSO approval
- NABL accredited labs
- TPG certificate for H&T

BIS Licence

- IS 1875 : 1992
- IS 7283 : 1992
- IS 11169 : 2022 Part-1
- IS 14650 : 2023
- IS 7904 : 1995
- IS 7887 : 2012
- IS 9550 : 2001

Sales Office

AHMEDABAD
JSW Steel Ltd.
Office No.501/502,
Mondeal Height,
B-Wing, Lascon Cross Road,
Near Novotel Hotel,
Opp Karnavati Club, S.G.Highway,
Ahmedabad - 380054.
Mb: 08128833390

AURANGABAD
JSW Steel Ltd.
Office No.306, 3rd Floor, 05/1
A,B,C East Beside, Prozone Mall,
Chikaithana MIDC,
Aurangabad.

BANGALORE
JSW Steel Ltd.
121, The Estate,
3rd Floor, Dickenson Road,
Bengaluru - 560042.
Tel: 08042448888

BHUBANESWAR
JSW Steel Ltd.
JSS STP, 2nd Floor, Block B,
Infocity, Chandrasekharpur E -1/1,
Bhubaneswar - 751024.
Tel: 0674-6658904

CHENNAI
JSW Steel Ltd.
Olympia Cyber Space,
Office Module 3, 10th Floor,
13th Level, 21/22,
Arulyammanpettai, 2nd Steer,
Alandur Road, Guindy,
Chennai - 600032.
Tel: 044 69255300

COIMBATORE
JSW Steel Ltd.
211, 2nd Floor, Sathya Complex,
ESR Avenue, Nr Post office,
TV Swamy Road (East),
Coimbatore – 541002.

DELHI
JSW Steel Ltd.
4th Floor, NTH Complex,
A-2, Shaheed Jet Singh Marg,
Qutub Institutonal Area,
New Delhi - 110067.
Tel: (011) 48178600

FARIDABAD
JSW Steel Ltd.
Nain Sadan,
Sector 20A,
Plot No- 35,
Near EF3 Mall,
Faridabad - 121001
Tel: (0129) 2239248, 2232387

GUWAHATI
JSW Steel Ltd.
6th Floor, Unique Avenue,
Front Side,
Opp. Fire Station,
Super Market,
Dispur, Guwahati - 781005.

HUBLI
JSW Steel Ltd.
2nd Floor, Signature Mall,
Airport Road,
Gokul Road,
Hubli - 580030.

HYDERABAD
JSW Steel Ltd.
Babu Khan
Millenniums Centre,
7th Floor, Somajiguda,
Hyderabad - 500082.
Tel: (040) 27846669 / 79

INDORE
JSW Steel Ltd.
Unit No. 416, 4th Floor,
Princes' Business Skypark,
AB Road,
Indore - 452010.
Tel: 07312532156

JAIPUR
JSW Steel Ltd.
3rd Floor, 304-307,Signature
Tower, Behind Police HQ,
Lal Kothi, Tonk Phatak,
Jaipur - 302015 (Rajasthan)
Tel: (0141) 4629200

KOCHI
JSW Steel Ltd.
34/138L3, New No.41/150A3,
2nd Floor, Above Dhe Puttu
Restaurant, Service Road,
NH By-pass, Edapally,
Kochi, Kerala - 682024.

KOLKATA
JSW Steel Ltd.
Godrej Waterside, 10th Floor,
Tower - 1, Unit No. 1003,
Plot - DP-5 Sector V,
Salt Lake City, Kolkata - 700091.
Tel: (033) 40002020

LUCKNOW
JSW Steel Ltd.
Vishal Singh Srinet, Office No.708
-710, 7th Floor, Shalimar Titanium,
Mandi Parishad Rd, Opp. Indira
Gandhi Pratishthan Vijaipur Colony,
Vibhuti Khand, Gomti Nagar,
Lucknow, UP – 226010.
Tel: 05226902300

LUDHIANA
JSW Steel Ltd.
1st Floor, JSW BPSL Complex,
B-29/542 , G.T Road,
Dhandari Kalan,
Ludhiana (Punjab) - 141014.

MUMBAI
JSW Steel Ltd.
JSW Centre,
Bandra Kurla Complex,
Bandra East, Mumbai - 400051.
Mb: 022-42863000

NAGPUR
JSW Steel Ltd.
L&T Building,
3rd Floor (Back Side), Plot No.12,
Shivaji Nagar, Nagpur - 440010.

NAVI MUMBAI
JSW Steel Ltd.
1101-1102 a 1704-1707,
17th Floor, Plot No. 4 A 6,
Greenscape Cyber One,
Sector 30 A, Vashi,
Navi Mumbai - 400705.
Tel: 022 69337000

NOIDA
JSW Steel Ltd.
Trapezoid, C-27, 9th Floor,
Sector-62, Noida, Uttar Pradesh.

PATNA
JSW Steel Ltd.
Sai Tower, 3rd Floor,
Rekha House,
New Oak Banglow Road,
Patna - 800001.
Tel: 0612 - 6696205

PUNE
JSW Steel Ltd.
The Metropolitan, FP No 27,
Survey No 21,4th Floor,
Ekta Park Society,
Sagar Society,Wakdewadi,
Shivajinagar, Pune,
Maharashtra – 411003.
Tel: 9099039951

VIJAYWADA
JSW Steel Ltd.
VRN House Corporate,
2nd Floor, 38-4-12,
Opp All India Radio,
Beside MG Road,
Punnamma Thota,
Vijaywada - 520010.
Tel: 0866 2720500

Head Office:
JSW Centre, Bandra Kurla Complex,
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Tel: +91 22 4286 1000

Scan here for website