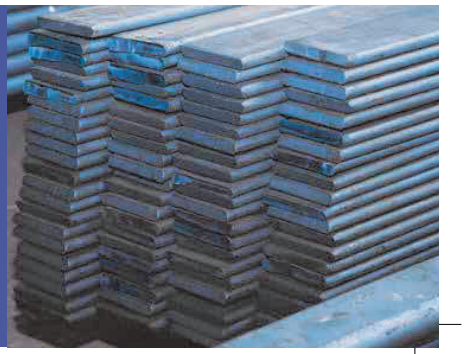
JSW STEEL LTD.
JSW Centre, Bandra Kurla Complex, Bandra (East), Mumbai - 400051
Phone: 022 4286 1000 | Fax: 022 4286 3000 | Toll free: 1800-266-2661
Email: support.steel@jsw.in | Web: www.jsw.in

JSW Steel Ltd. - CIN: l27102mh1994plc152925 | JSW Steel Coated Products Ltd.- CIN: U27100mh1985plc037346 Dec'17

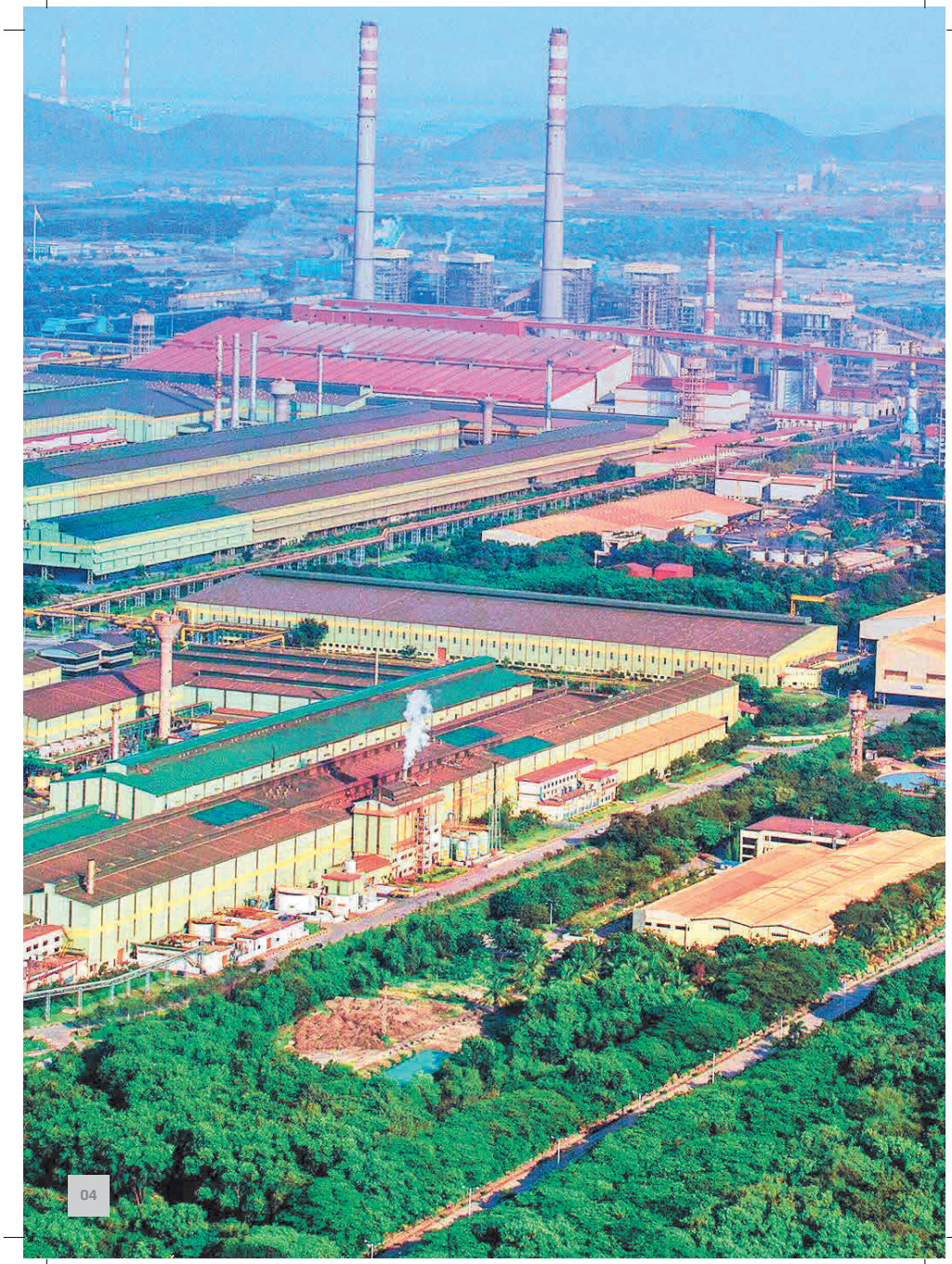


SPECIAL STEEL LONG PRODUCTS

Better Everyday

JSW Steel helping india move forward.

Content



JSW Group

An $11 billion conglomerate, with presence across India, USA, South America & Africa, the JSW Group is a part of the O.P. Jindal Group with strong footprints across core economic sectors, namely, Steel, Energy, Infrastructure, Cement, also in Ventures and Sports.

The Group is paving the way for India's development as a global superpower. JSW Steel is India's leading steel producer and among the world's most illustrious steel company. The Group is also leading in every sector that it operates in.

JSW Energy is one of the earliest private entrants into the power sector positioned strongly as a full-spectrum integrated power company with a presence across the power sector value chain. It is one of the most efficient Power Company in the country with one of the country's largest open cast mining operation by volume and one of the largest private sector Hydro Operator in India. JSW Cement creates the building blocks of India with its environment friendly products. JSW Infrastructure is contributing to the nation's development by providing world class services to clients through state of- the-art ports, terminals, shipyards and other facilities. JSW Sports runs the Sports Excellence Program (SEP) to identify, nurture and develop Indian athletes to ensure that they bring sporting glory to the nation on the global stage. JSW Sports also runs the Bengaluru Football Club & The Bengaluru Yodhas wrestling team.

The JSW Group is committed to creating more smiles at every step of the journey. JSW Foundation, the Group's CSR and sustainability arm, is in constant pursuit of making life better for communities with its various initiatives in the fields of health, education, livelihood and sports, along with art and culture.

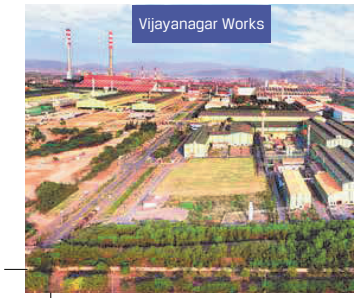
JSW Group is proud to be charting a course to excellence that creates opportunities for every Indian and leads to the creation of a sustainable, dynamic and developed nation.

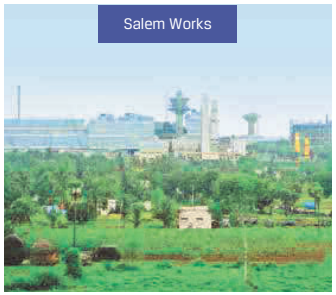
JSW Steel Ltd.

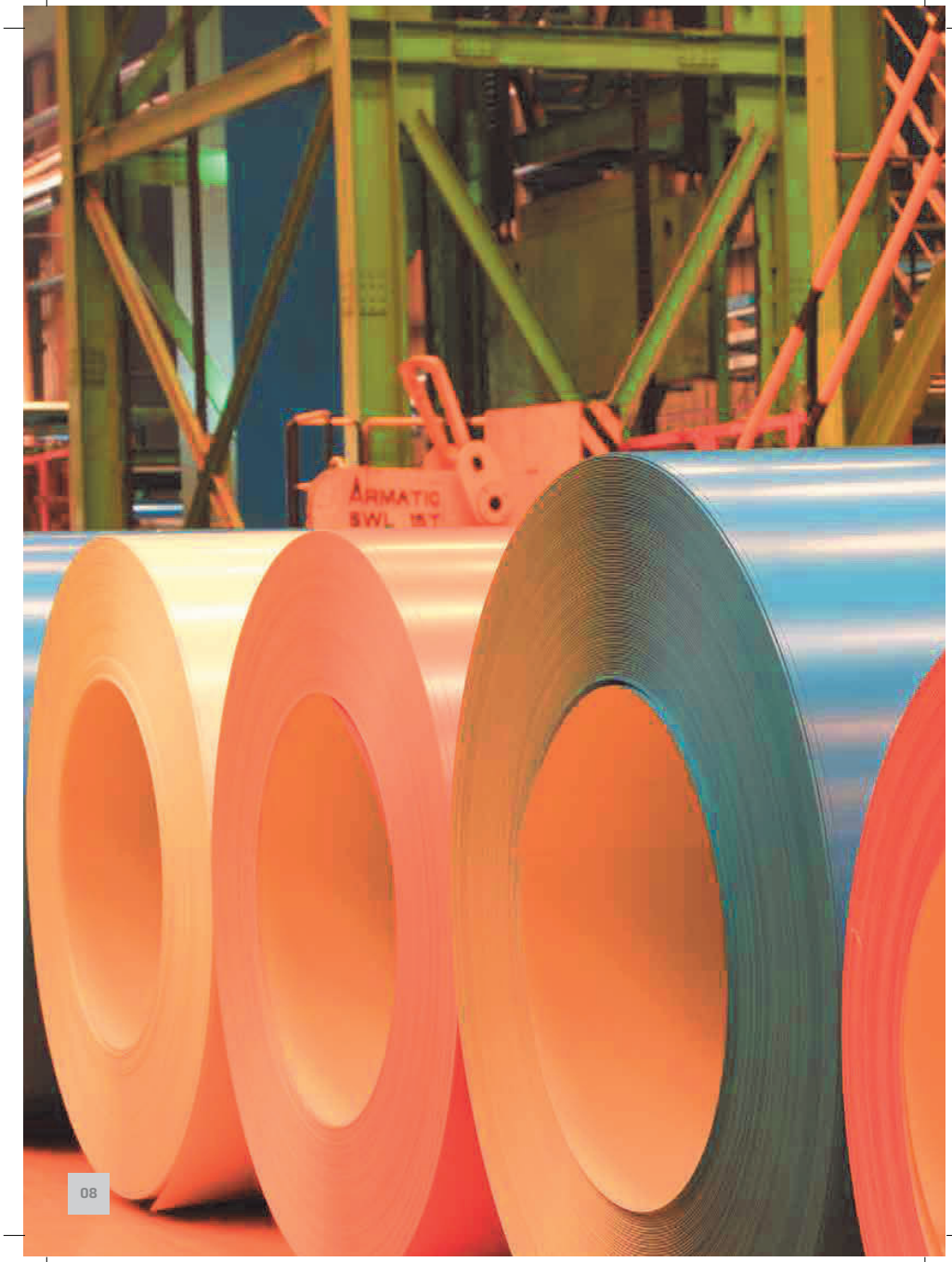
The flagship company of USD 11 billion JSW Group, JSW Steel is one of India's leading integrated steel manufacturers with a capacity of 18 MTPA. It is one of the fastest growing companies in India with a footprint in over 140 countries. With state-of-the-art manufacturing facilities located in Karnataka, Tamil Nadu and Maharashtra, it is recognized for its innovation and quality.

JSW offers a wide gamut of steel products that includes Hot Rolled, Cold Rolled, Bare & Pre-painted Galvanized & Galvalume®, TMT Rebars, Wire Rods and Special Steel.

JSW Steel continues to enhance its capabilities to meet the rapidly changing global market needs. To stay on the leading edge of technical advancement, JSW has entered into technological collaboration with JFE Steel Corp, Japan to manufacture high strength and advanced high strength steel for the automobile sector. JSW Steel has also entered into a joint venture with Marubeni-Itochu Steel Inc. Tokyo, to set up a state–of-the-art steel processing centers.To strengthen its global network, the Company has also acquired a Pipe and Plate making steel mill in Baytown, Texas in USA. Going forward, JSW Steel aims to produce 40 million tons of steel annually.







JSW Steel
Coated Products Ltd.

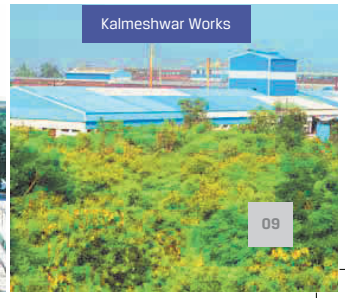
JSW Steel Coated Products Limited is 100% subsidiary company of JSW Steel, having state-of-the-art manufacturing facilities in the state of Maharashtra.

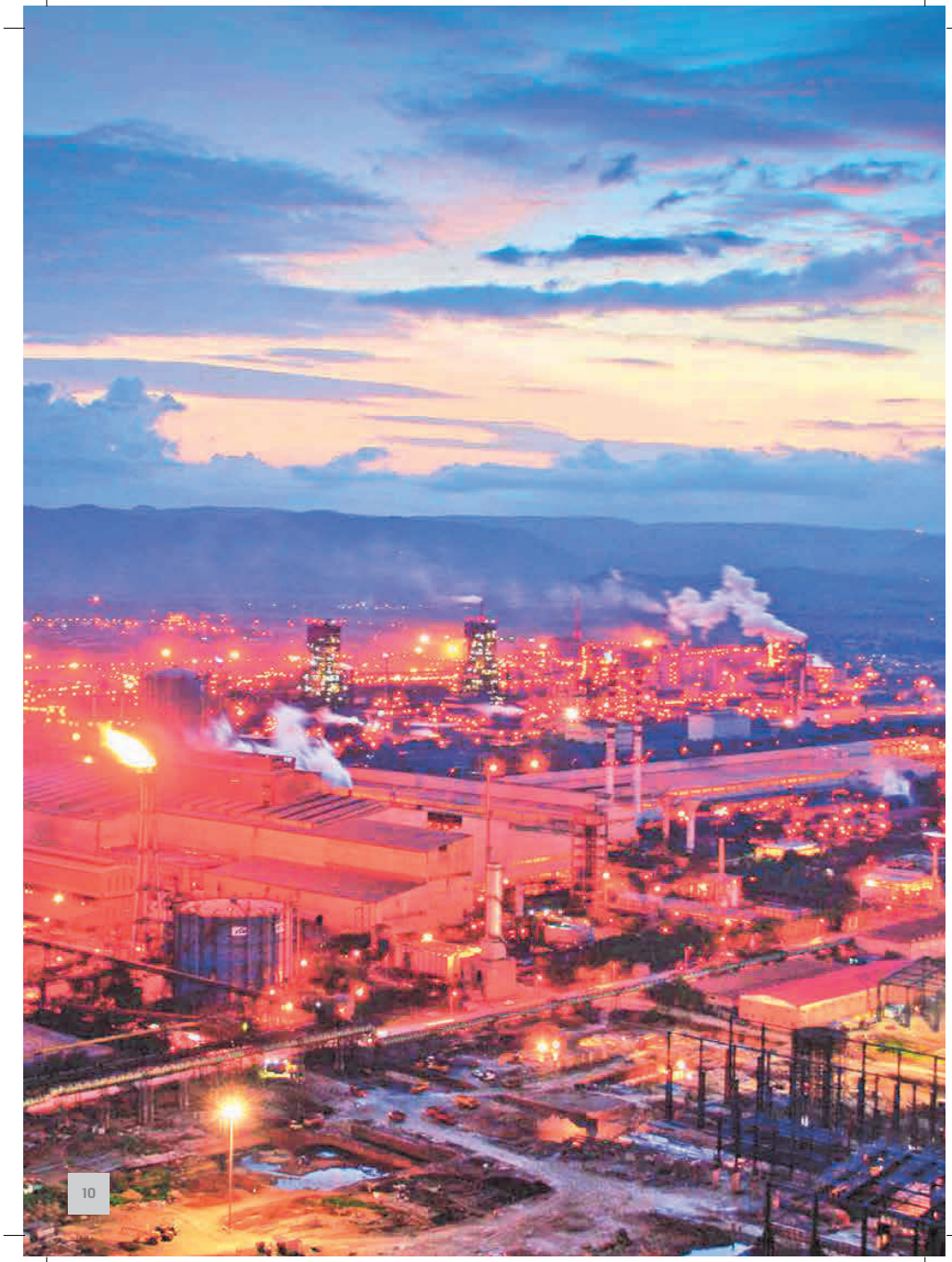
JSW Steel Coated Products Ltd. is India's largest manufacturer and exporter of Coated Steel as well as Colour Coated Steel. The production facilities, Tarapur and Vasind Works, are located in the vicinity of major ports. The company's Kalmeshwar Works is centrally located near Nagpur to serve across regions.

JSW is an ISO 9001: 2008 Certified Organization and the first licensee producer for Galvalume® in India. The Tarapur plant is specialized in manufacturing Ultra-Thin Coated Products. The company is also a manufacturer of appliance grade colour coated products. JSW's Kalmeshwar Works is the first producer of Galvanized and Colour Coated Steel in India. JSW also has established India's first Appliance Grade Line to manufacture Pre Coated and Vinyl Coated Metal.


Vasind Works


Tarapur Works


Kalmeshwar Works



Steel Melting Shop

Setting Benchmarks

- First continuous annealing line in India
- Widest Cold Rolling Mill (upto 1870 mm width)
- India's largest Coated Steel producer
- First Licensee Galvalume® producer in India
- JSW Steel Salem works is the largest integrated Alloy and Special Steel plant in India
- Widest Hot Strip Mill in India
- India's most modern and largest Vertical Caster-300/260/220 x 2200 mm
- India's only Multi-Radii Bloom Caster operational at Salem works
- ZERO EFFLUENT discharge for greener & cleaner environment
- 1.6 million trees planted at Vijayanagar works, transforming the area into a green oasis
- India's largest Long Steel producer by installed capacity

Blast Furnace - IV

Salem Works

JSW Salem Works is the first 1 MTPA Special Alloy Steel Plant in India and only integrated steel plant in Tamilnadu. It has facilities for production of Billet/Blooms, Pig Iron and Rolled Steel products of nominal size 5.5 to 240mm in the long products category. Salem unit has adopted the integrated route of Sinter Plant- Blast Furnace- Energy Optimizing Furnace –Ladle Refining Furnace- Vacuum Degassing- Continuous Casting Machine- Rolling Mill route with iron ore as the basic input material. The unit also has the backup facilities in the nature of Captive Power plant, Coke Oven Plant, Gas Production (Oxygen, Nitrogen, Argon) Plant, Compressed Air and Water utilities

India's largest integrated Special Alloy Steel plant

Manufacturer of World-Class quality Special Steel

High Carbon | Free Cutting | Boron | Cold Heading | Alloy | Micro Alloy | Bearing File Spring | Forging Quality | Boiler Quality Steels

Manufacturing Facilities

Energy Optimization Furnace

Energy optimization process is an oxygen steel making process best suited alloy steel production from hot metal.

Advantages of EDF

- Flexibility with regard to metallic charge mix
- Excellent metallurgical properties, especially with regard to de-phosphorisation
- Slag free tapping
- Virgin steel through integrated route with low tramp elements
- Catch carbon facility due to facility of door on converter vessel and quick carbon analyser

Ladle Refining Furnace

Further refining of steel is done in ladle furnace by deoxidizing and desulphurizing the steel under continuous argon/nitrogen 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.

Energy Optimizing Furnance

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:

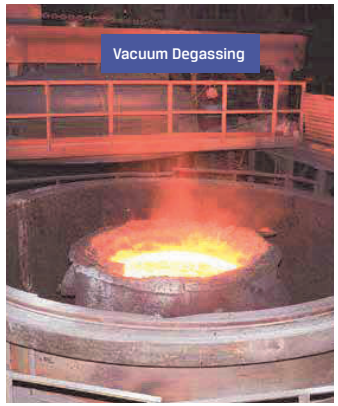
- Reduction of dissolved gases (hydrogen, nitrogen and oxygen) in the molten steel
- Reduction of oxide-inclusion in liquid steel
- Provide the means and technical conditions that are favorable for good desulfurization

Cast Products

We have three strands Continuous Casting Machine (CCM) with double radius of 9/16 meters for billets and three strands CCM with triple radius of 12/16.5/30 meters for blooms.

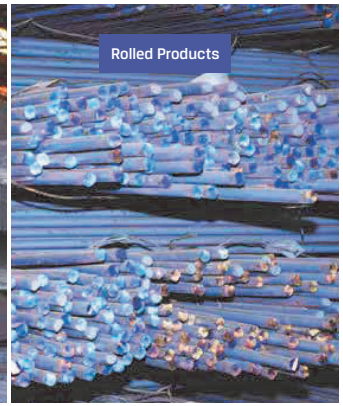
Cast Product Size

- 130x130, 160x160, 220x220, 250x250, 280x370 & 340x400 mm – Billets/Blooms
- 160, 180, 200, 220, 310 mm- Rounds



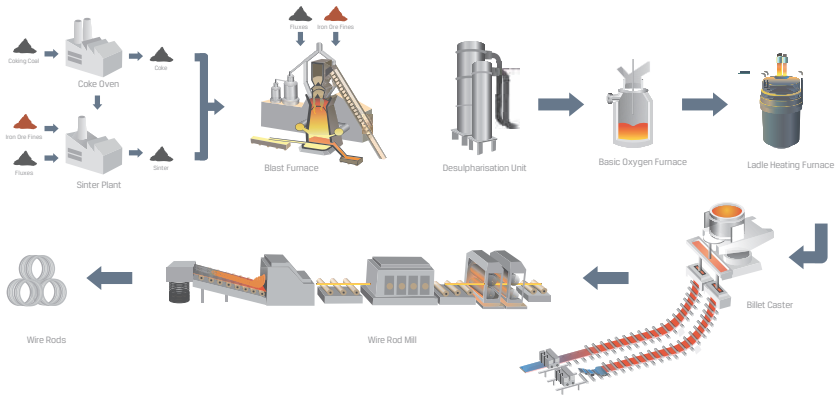
Vacuum Degassing

Cast Products



Rolled Products

Process Route



Bar & Wire Rod Mill (BRM)

After inspection of the cast product the billets are ground in an Automatic Billet Grinding Machine and rolled in Bar & Rod Mill producing 5.5mm to 32mm in coil form and 20mm to 65mm in straight bar form with coil weights in wire rods of up to 1.35 MT and bundle weights in bars up to 3 – 4 MT or as specified by the customer. It also produces Flats from range of 60 x 7 to 101.11 x 38 mm.

The rolling is in a continuous mill using Horizontal-Vertical stands in combination with 3 rolls Kocks Block Technology and finishing of wire rods through a state of art 10 stands No Twist Mono block equipped with Stelmor cooling facility. The Kocks technology provides dimensional tolerance of ¼ DIN Standards for bars and wire rod coils from 16 to 65mm

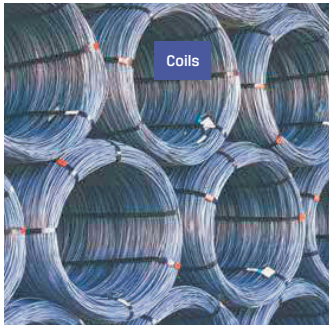
Blooming Mill (BLM)

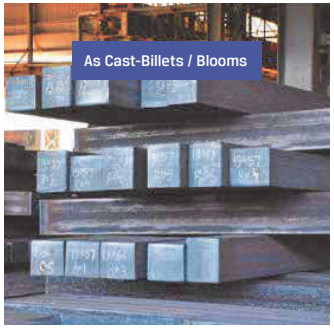
The blooms are rolled in the blooming mill. The blooming mill produces from250x250 mm sq blooms/ 340x340mm/ 310 rounds blooms to sections

- RCS: 55,63,75,80,85,90,95,100,125,140,160,180,200,240 (mm)
- Rounds: 56,60,65,70,75,80,85,88,90,95,100,105,110,130,140,150,160,170,180,200 (mm)
- Flats 120x20,120x30,120x40,130x20,130x30,130x40 (mm)

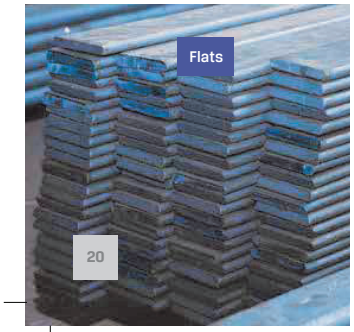
Products of Salem Unit

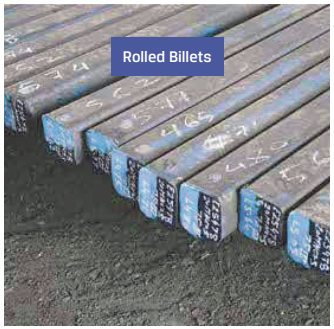
- Carbon Special Steels
- Free Cutting Steels
- Boron Steels
- Cold Heading Steels
- Alloy Steels
- Micro Alloy
- Electrode Quality Steels
- Ball Bearing Steels
- File Steels
- Case Hardening Steels
- Spring Steels
- Forging Quality Steels
- Seamless Quality Grade
- Boiler Quality Steels
- Steel For Tyre Beads
- Rail Steel

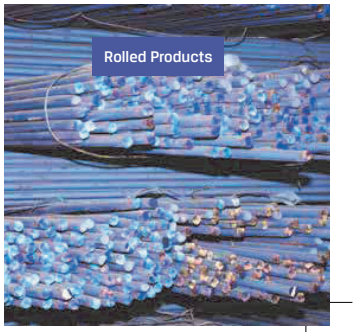

Coils


As Cast-Billets / Blooms


As Cast-Rounds


Flats


Rolled Billets


Rolled Products

Testing Equipments

The plant is equipped with various analytical, physical, metallurgical Facilities necessary for special steel production. To name a few are:

- X-ray fluorescence spectrometer
- Optical emission spectrometers
- LECO gas analyzer for oxygen, nitrogen and hydrogen
- LECO carbon and sulphur analyzer
- Micro scope up to 2000 magnification including image analyzer
- Automatic Inspection Lines with Ultrasonic and Infrared Testing
- Jominy Hardenability Apparatus
- Impact Testing Machine
- UTM/Hardness Testers
- Cold Upset Testing Machines
- Portable Ultrasonic Testers
- Mobile Spectrometer & MPI
- CSR & CRI Equipment for Coke analysis-Box Text
- RDI & RI Equipment for Sinter analysis


Universal Testing Machine


Automatic Inspection Line

Metallurgical and Mechanical Properties

MACROETCHM (ASTME - 381) : C2R2S2 MAX

ULTRASONIC TEST CLEANILINESS (INCLUSION) TYPE (AS PER ASTM E - 45) : 20% D.E. MAX NO LOSS IN B W E

	Thin (Max)	Thick (Max)
A	0*	0.5
B	0.5	0.5
C	0.5	NIL
D	1.0	0.5

(*Depends on %S)

AS PER DIN 50602 : K4-20 MAX

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 : 0.30 MM MAX (For rolled bars)

GRADE & COMPOSITION : AS PER SPECIFICATION

Residuals (%)

Element	Commitments	Level at JSW (standard)
Ni	0.25 (max)	0.01
Cr	0.20 (max)	0.02
Mo	0.10 (max)	0.001
Cu	0.25 (max)	0.02
Sn	0.03 (max)	0.001
Al	0.020 / 0.060	0.020 / 0.040

Gases

- H2 – 2.5ppm (lower levels available on prior agreement)
- O2 – On Low Carbon < 25 ppm (12ppm max for Customer Specific)
- O2 – On Medium Carbon < 20 ppm (12 ppm max for Customer Specific)
- O2 – On Ball Bearing Steel < 12 ppm
- N2 – 90 ppm Max (Possible to control in restricted range up to 220 ppm)
- Specific requirement can be tailor made

Plant Facilities

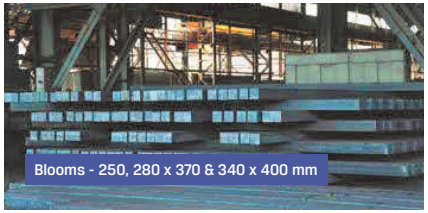

BF

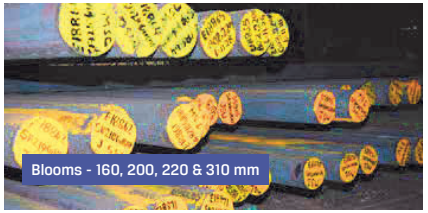

EOF


LRF


VD

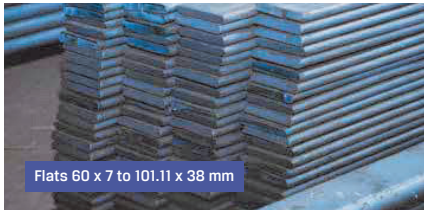

Continuous Casting Machine

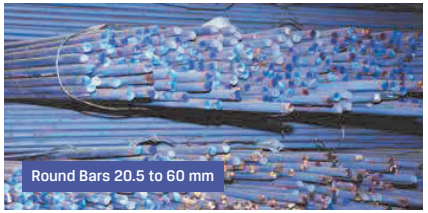

Blooms - 250, 280 x 370 & 340 x 400 mm


Blooms - 160, 200, 220 & 310 mm


Billets - 100, 130 & 160 mm

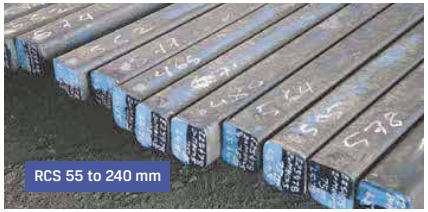

Bar and Rod Mill

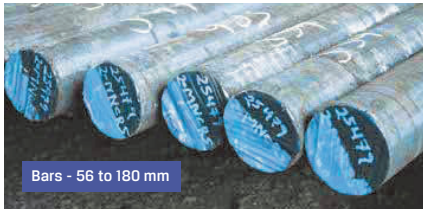

Flats 60 x 7 to 101.11 x 38 mm


Round Bars 20.5 to 60 mm

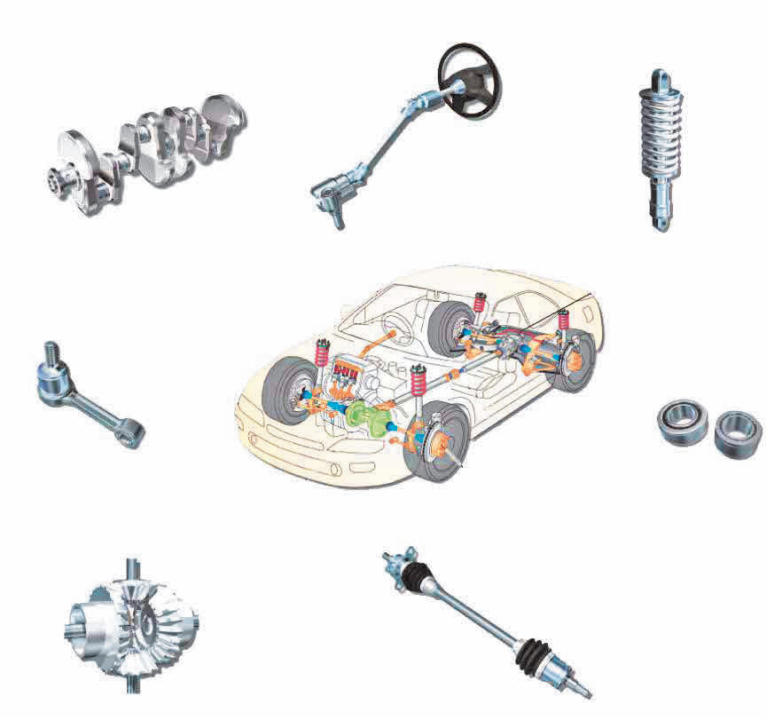

Coils 5.5 to 32 mm


Blooming Mill - 8 Strands


RCS 55 to 240 mm


Bars - 56 to 180 mm

Major End Use Applications



"Our products get transformed into various key parts and goes to esteemed automobile manufacturers."

Major Customer Base

TATA

BHARAT FORGE KALYANI

HONDA

JAI Jamna Auto Industries Ltd.

ASHOK LEYLAND

TVS

FAG

DAIMLER

TIMKEN

Dimensional Tolerance

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	+0.2 -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

Bars & Wire Rods:

Normal Size Over	Upto & Including	Tolerance, mm Permissible Deviation	Out of Roundness (max)
(1)	(2)	(3)	(4)
-	8	+0.20 -0.25	0.30
8	11	+ 0.25	0.30
11	15	+0.30 -0.20	0.35
15	22	+0.30 -0.20	0.40
22	28	+0.30 -0.20	0.40
28	34	+ 0.30	0.50
34	38	+0.36 -0.30	0.60
38	50	+0.40 -0.30	0.60
50	64	+0.80 -0.00	0.80

Tolerance from Kocks Block:

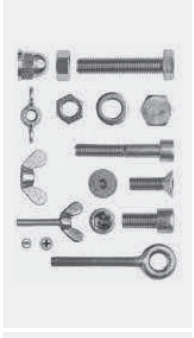
Size	FREE SIZE ROLLING (FSR MODE)		Size	FREE SIZE ROLLING (FSR MODE)		
	Guranteed tolerance(mm) - ±	Ovality (mm)		Guranteed tolerance(mm) - ±		Ovality (mm)
	-	+		-	+	
16.3	0.132	0.132	34	0.155	0.155	0.249
17.3	0.133	0.133	36	0.159	0.159	0.254
18.3	0.134	0.134	38	0.162	0.162	0.259
20	0.135	0.135	40	0.165	0.165	0.264
20.5	0.136	0.136	42	0.168	0.168	0.268
21	0.137	0.137	44	0.171	0.171	0.273
23.5	0.141	0.141	45	0.172	0.172	0.275
25	0.143	0.143	48	0.177	0.177	0.283
26	0.144	0.144	50	0.180	0.180	0.288
27.5	0.146	0.146	56	0.190	0.190	0.303
28	0.147	0.147	56.5	0.191	0.191	0.305
30	0.150	0.150	58	0.194	0.194	0.310
31	0.152	0.152	60	0.198	0.198	0.316
32	0.153	0.153				

*Precision tolerance available on request

Specification 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

Specifications of Steel manufactured

Forging Quality-Chemical Composition%										
Grade	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		0.015
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	0.50	-	0.40	0.50	0.80	-	0.045	-	0.045
C 45E/CK 45	0.42	0.50	-	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

Specifications of Steel manufactured

Forging Quality-Chemical Composition%										
Grade	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	0.28	0.15	0.35	0.30	0.60	-	0.030	-	0.035
S30C	0.27	0.33	0.15	0.35	0.60	0.90	-	0.030	-	0.035
S30C	0.32	0.38	0.15	0.35	0.60	0.90	-	0.030	-	0.035
S38C	0.35	0.41	0.15	0.35	0.60	0.90	-	0.030	-	0.035
S40C	0.37	0.43	0.15	0.35	0.60	0.90	-	0.030	-	0.035
S43C	0.40	0.46	0.15	0.35	0.60	0.90	-	0.030	-	0.035
S45C	0.42	0.48	0.15	0.35	0.60	0.90	-	0.030	-	0.035
S48C	0.45	0.51	0.15	0.35	0.60	0.90	-	0.030	-	0.035
S53C	0.50	0.56	0.15	0.35	0.60	0.90	-	0.030	-	0.035
S55C	0.52	0.58	0.15	0.35	0.60	0.90	-	0.030	-	0.035
S58C	0.55	0.61	0.15	0.35	0.60	0.90	-	0.030	-	0.035

Specification of Steel manufactured

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	0.90	-	0.015	-	0.010	1.50	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	-	-	

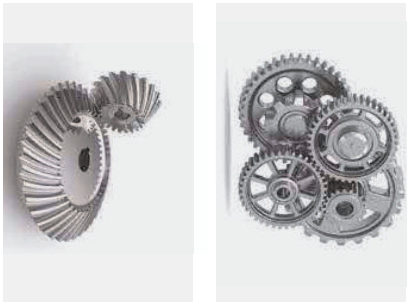
Specification of Steel manufactured

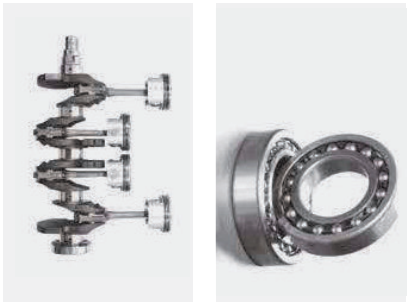
Grade	Low Alloy Steel Chemical Composition %																		
	C		Si		Mn		P		S		Cr		Mo		Ni		V		Others
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	
EN354	-	0.20	-	0.35	0.50	1.00	-	0.050	-	0.050	0.75	1.25	0.10	0.20	1.50	2.00	-	-	
EN36 C	0.12	0.18	0.10	0.35	0.30	0.60	-	0.050	-	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	-	0.040	0.75	1.20	0.15	0.25	-	0.25	-	-	
SAE4150H	0.47	0.54	0.15	0.30	0.65	1.10	-	0.030	-	0.040	0.75	1.20	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	-	0.030	-	0.030	0.90	1.20	-	-	-	0.25	-	-	
SCM 415H	0.12	0.18	0.15	0.35	0.55	0.95	-	0.030	-	0.030	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 ppm	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
SCR 420HV ppm	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
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					

Specification of Steel manufactured

Grade	File Steel Chemical Composition %											
	C		Si		Mn		P		S		Cr	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
140Cr3	1.25	1.35	0.15	0.30	0.20	0.40	-	0.030	-	0.030	0.50	0.70

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	0.050	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	-	0.05	-	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	-	0.05	-	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	-	0.10	-	-	0.08	0.13
SBMA 740	0.40	0.50	0.15	0.35	0.85	1.35	-	0.030	-	0.050	-	-	-	-	-	-	0.16	0.20
S70CVS1	0.67	0.73	0.15	0.35	0.45	0.55	-	0.045	0.055	0.070	0.10	0.20	-	-	0.04	0.12	0.03	0.05
S36CVS2	0.34	0.38	0.60	0.75	0.95	1.05	-	0.030	0.065	0.085	-	0.25	-	-	-	0.25	0.25	0.30





Specifications of Steel manufactured

Grade	Welding electrode Quality Chemical Composition %											
	C		Si		Mn		P		S		Cr	Mo
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	-	Min
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
S2Mo	0.07	0.15	0.05	0.20	0.95	1.30	-	0.025	-	0.025	-	0.45
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	-	-
EB 2	0.07	0.15	0.05	0.30	0.45	1.00	-	0.025	-	0.025	1.00	1.75

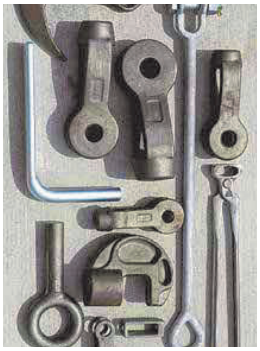
Grade	Free Cutting Steel Chemical Composition %													
	C		Si		Mn		P		S		Pb		Cr	Mo
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	-	Min
EN 1A EN 1A(Pb)	-	0.15	-	-	0.9 1.3	1.3 1.7	-	0.07	0.20	0.30	-	-	-	-
EN 8M	0.32	0.4	0.25	0.25	1	1.4	-	0.06	0.12	0.20	0.20	0.30	-	-
EN 15AM	0.32	0.4	-	0.25	1.3	1.7	-	0.06	0.12	0.20	-	-	-	-
EN 80M/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	-	-	-	-

Specification of Steel manufactured

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	-	-







Specification of Steel manufactured

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	-	-

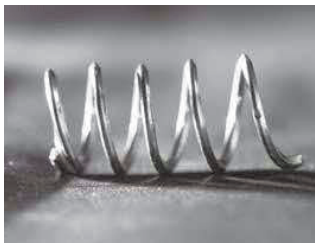
Grade	Rail Steel Chemical Composition %																				
	C		Si		Mn		P		S		Cr		Mo		Ni		V		AL		Others
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	
R260	0.62	0.80	0.15	0.58	0.70	1.20	-	0.025	-	0.025	-	0.15	-	0.02	-	0.10	-	0.3	-	0.004	N : 90ppm max; O : 20ppm max ; 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










R&D Facilities

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

- SCR 420 – Micro-alloyed steel with N2 for transmission gears
- SBMA 740- Micro-alloy steel for Hydraulic Cylinder Pistons
- 100Cr6 (Bearing Steel) & S55Cls (Hub Bearing)
- Cr-Mo steel for Creep resistant applications
- Ultra low sulfur steel for sour gas application
- VAR89S steel for railway tracks
- 30 MnS6 for crankshaft 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
- AS 9100*
- TS 16949
- ISO 18001
- ISO 17025* (*under approval)

QMS features

Focus on Product quality:

- Lower hydrogen and related defects
- Lower oxygen levels and inclusion control
- Reduction 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 bearing steels

R&D Equipments at Salem Plant:

1. SEM (Scanning Electron Microscope)
2. HYDRIS for Hydrogen Measurement
3. Immersion UT
4. Optical Microscope




Quality Control and Inspection Facilities

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/blooms

Descaler:

- Scales are removed with high water pressure of 250 Bar
- Adjustable header position for various sizes like 250 Sq, 340x340 and 310 Dia
- Improves the surface quality of blooming mill products

Kocks Blocks:

- 3 Roll 4 stand technology for getting precision dimension up to ¼ th of DIN Tolerance
- Input size ranges from 16 to 65 mm
- Improves the surface finish of bars and coils

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 60 to 180 Dia & 55 to 140 RCS

Billet Grinding:

- Automated billet grinding with precise depth contr4ol up to 0.5 mm
- Input size ranges from 160 Sq. 250 Sq and 200 Dia

Magnetic Flux Leakage:

- Automated magnetic flux leakage testing system
- Detection capability – 0.2 mm depth x 705 mm length
- 8 No of probes of 7Hz frequency
- Sizes ranging from 20 to 60 mm dia

Infrared:

- Automated Infrared Thermography surface defect detecting system for finished products
- Can detect surface defects of more than 0.3 mm depth
- Sizes ranging from 60 to 180 dia & 55 to 160 RCS

Ultrasonic Tester:

- Automatic ultrasonic testing machine using phased array technology
- Surface defects Detection capability 0.4 to 2 mm for Side Drilled hole(SDH) 0.7 to 7 mm for flat Bottom Hole(FBH)
- Size ranging from 60 to 180 Dia & 55 to 160 RCS

Bundling and Packging Specifications

BARS	Bundle Length (mtr)		Bundle Size (mtr)		Bundle Weight		No. Of Straps/Bundle
	max	min		max	max	min	4
	6.5	3	Dia total Bundle	0.43	3	1	

FLATS	Bundle Length (mtr)		Bundle Size (mtr)			Bundle Weight		No. Of Straps/Bundle
	max	min		max	min	max	min	4
	6.5	3	Height	0.34	0.24	3	1.3	
			Width	0.34	0.24			

COILS	Coil Length (mm)		Coil Size Dia (mm)		Coil Weight	
	max	min	ID	OD	max	min
	1410	1200	900	1300	1.38	1.26
			*Custmer specific			

RSC	Bundle Length (mtr)		Bundle Size (mtr)			Bundle Weight		No. Of Straps/Bundle
	max	min		max	min	max	min	4
	6.5	1	Height	0.27	0.13	44	1	
			Width	0.39	0.25			

RR	Bundle Length (mtr)		Bundle Size (mtr)			Bundle Weight		No. Of Straps/Bundle
	max	min		max	min	max	min	4
	6.5	1	Dia total Bundle	0.42	0.24	44	1	

Gap Between each straps (In Mtrs)	Strapping Material Spacification
1.5	Thickness: 0.79MM Width : 32MM Grade: HT Thickness: 0.89MM Width : 31.75MM Grade: 114P

Gap Between each straps (In Mtrs)	Strapping Material Spacification
1.5	Thickness: 0.79MM Width : 32MM Grade: HT Thickness: 0.89MM Width : 31.75MM Grade: 114P

Strapping Material	Strapping Material Spacification
Cold Rolled (CR) Steel Strapping (Black) High Tension Stainless Steel HTSS Seal (LG) *High density poly ethylene (HDPE) Fabric Tube *low Carbon binding wire	Thickness: 0.79MM Width : 32MM Grade: HT Thickness: 0.89MM Width : 31.75MM Grade: 114P *Thickness:90GSM Width: 2.14 Mtr Length:3.4 Mtr *Dia: 7mm Strapping Done at 4 places 90 Degrees apart across the circumference of each coil.

Gap Between each straps (In Mtrs)	Strapping Material Spacification
1.5	Thickness: 0.79MM Width : 32MM Grade: HT Thickness: 0.89MM Width : 31.75MM Grade: 114P

Gap Between each straps (In Mtrs)	Strapping Material Spacification
1.5	Thickness: 0.79MM Width : 32MM Grade: HT Thickness: 0.89MM Width : 31.75MM Grade: 114P

Social Responsibilty

The JSW Foundation is the social development division of the JSW Group which works closely with all location of the group. Our CSR work has always taken a holistic approach which is embedded in our company philosophy, to nurture local communities around the plant. The Key areas of focus include:

- Infrastructure
- Livelihood
- Health
- Education
- Skill development