



# JSW Steel helping india move forward.



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# JSW Group

A \$14 billion conglomerate, with presence across India, USA, Italy, South America & Africa, the JSW Group is a part of the O.P. Jindal Group with strong footprints across economic sectors, namely, Steel, Energy, Infrastructure, Cement, also in Ventures, Sports, Furniture and Paints

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 Footbal Club, Delhi Capitals cricket team and the Haryana Steelers kabaddi team.

JSW group has ventured into steel furniture business with the launch of its brand, Forma under the company JSW Living. The company will be present across the value chain of furniture, furnishings and daily living objects that impact the Indian consumer's life.

JSW Paints is a greenfield venture of the JSW group backed by cutting-edge technology, automation and scale that's comparable to leading players in the Indian paints sector. The company will manufacture and market both industrial coatings as well as decorative paints. In the Decorative paints segment, the company will offer a complete range of only water-based paints for Interior & Exterior walls, wood & metal – various surfaces in Homes.

JSW Ventures is an early-stage, tech-focused, venture capital fund of JSW Group. JSW Ventures extends its partnership not just through capital, but through a commitment to build exceptional companies by developing growth strategies, improving financial functions, and providing access to the investor community and support from JSW Group's extensive resources.

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.

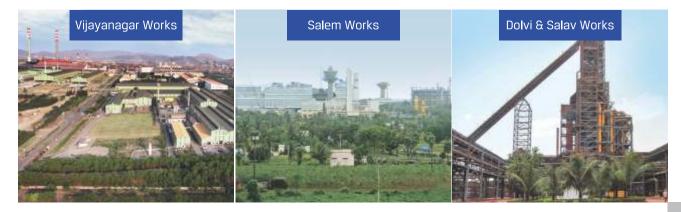


# JSW Steel Ltd.

The flagship company of USD 14 billion JSW Group, JSW Steel is one of India's leading integrated steel manufacturers with a domestic capacity of 18 MTPA. It is one of the fastest growing companies in India with a footprint in over 100 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, Special Steel, Electrical Steel and Tinplate.

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 acquired steel manufacturing facilities at Texas & Ohio in USA & in Piomboni, Italy. Going forward, JSW Steel aims to increase the annual production to 40 million tons within a span of 10 years.





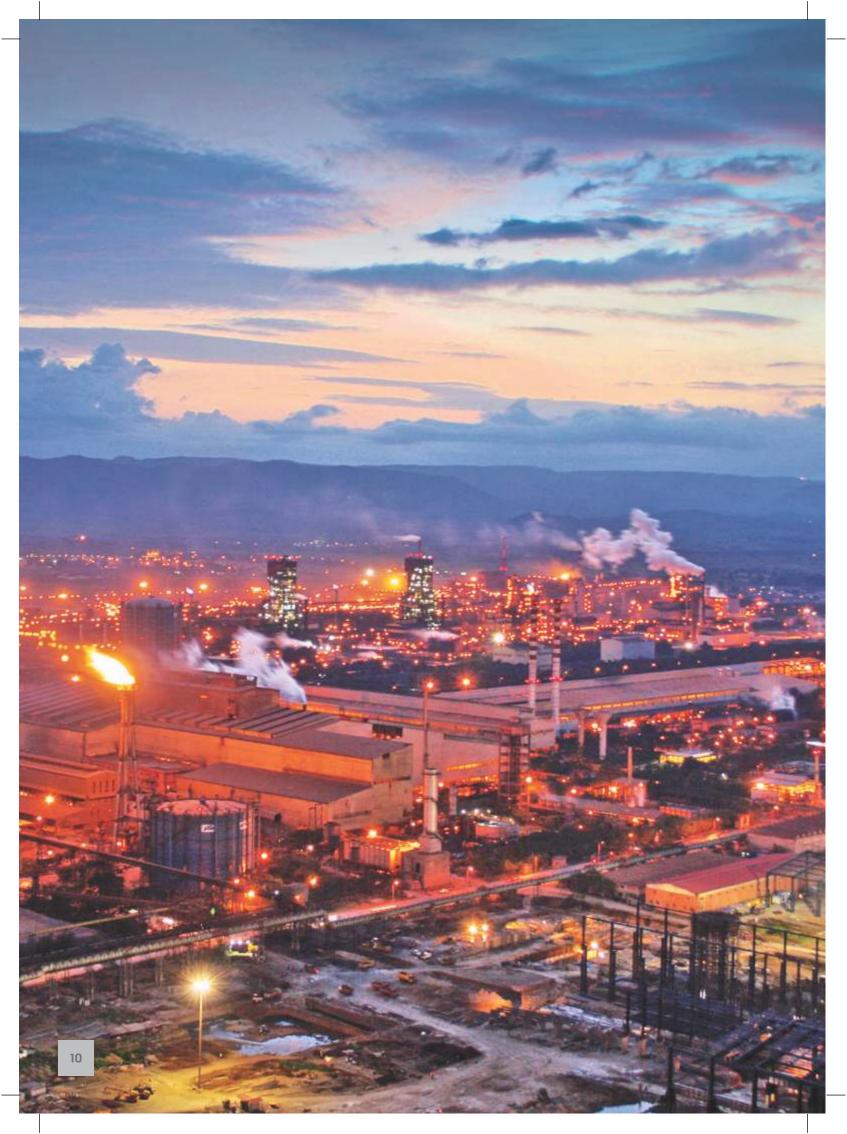
# JSW Steel Coated Products Ltd.

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.







# 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
- One of the 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





## JSW Steel wins the prestigious Deming Prize for its excellence in TQM

The JSW Vijayanagar Works is the largest single location integrated steel plant in the world to be awarded the prestigious Deming Prize for excellence in Total Quality Management (TQM) presented by the Union of Japanese Scientists and Engineers (JUSE)

# Award & Recognitions

## **Business & Operations**

Cll Exim Bank Awards for Business Excellence, 2018

The 25th Steel Minister's Trophy for the best performing integrated steel plant, 2016-17

IMC RBNQA Performance Excellence Trophy, 2016

### Management

**Business Standard CEO of the Year Award, 2018** 

Outstanding Business Leader of the Year CNBC-TV18, 2018

Chief Finance Officer of the Year, 2018

## Sustainability

CII 19th National Award for Excellence in Energy Management, 2018

**Apex India Energy Efficiency Award, 2018** 

**Golden Peacock Environment Management Award, 2018** 

CII - National Energy Management Award, 2017





# JSW Platina

JSW Steel - India's largest private steel manufacturer - adds another feather in its cap through its green field State-of-the-art Cold Rolling & Tinning Plant at Tarapur, Maharashtra. The plant has an installed capacity of 2 lakh tonnes per annum for manufacturing of world class tin mill products. This downstream investment showcases the Conglomerate's commitment towards the initiative of Make in India. This investment will ensure availability of world's best quality tinplate & tin free steel in India. With commissioning of this plant, JSW becomes the first company to bring in Continuous Annealing Technology for Tin Mill products in India.

Tinplate is typically a thin steel sheet with a coating of tin applied on either side through an electrolytic process. Tinplate exhibits high strength and formability - imparted by the base steel, and corrosion resistance - imparted by the tin coating. The smooth surface finish aids printability and weldability while giving a lustrous aesthetic appeal. Over the years, Tinplate has found an acceptance in numerous applications because of its beautiful appearance, light weight, low cost, easy utilization, high shapeability, different varieties etc. Being non-toxic in nature and because of its ability to resist bacteria, UV radiation, retain original colour, flavor and aroma of the contents, Tinplate is extensively used as a packaging medium for storage of canned foods, juices and other beverages. Other than edibles, Tinplate has paved its way into the packaging of paints, aerosols, battery jackets, chemicals, closures, etc. It is 100% bio-degradable and 100% recyclable, and thus, a highly sustainable packaging medium.

#### Advantages of Tinplate as packaging medium



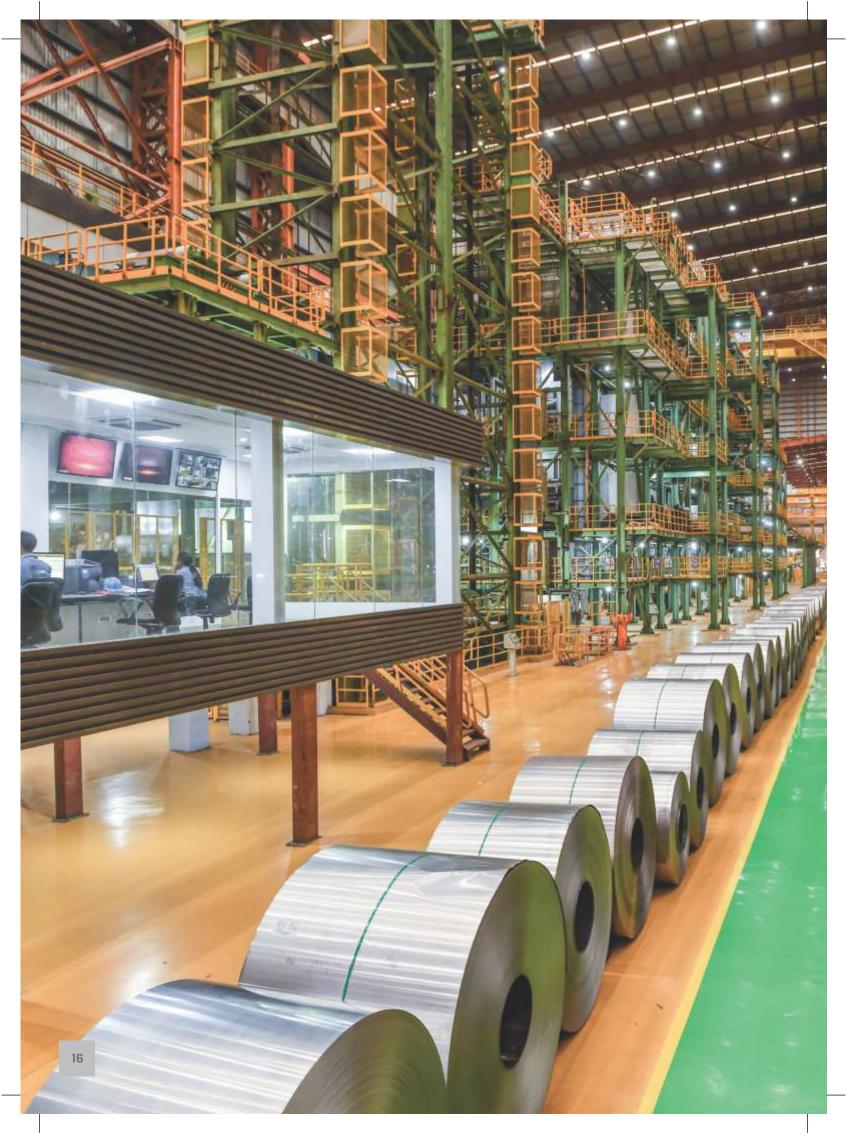
Pilfer & Tamper Proof



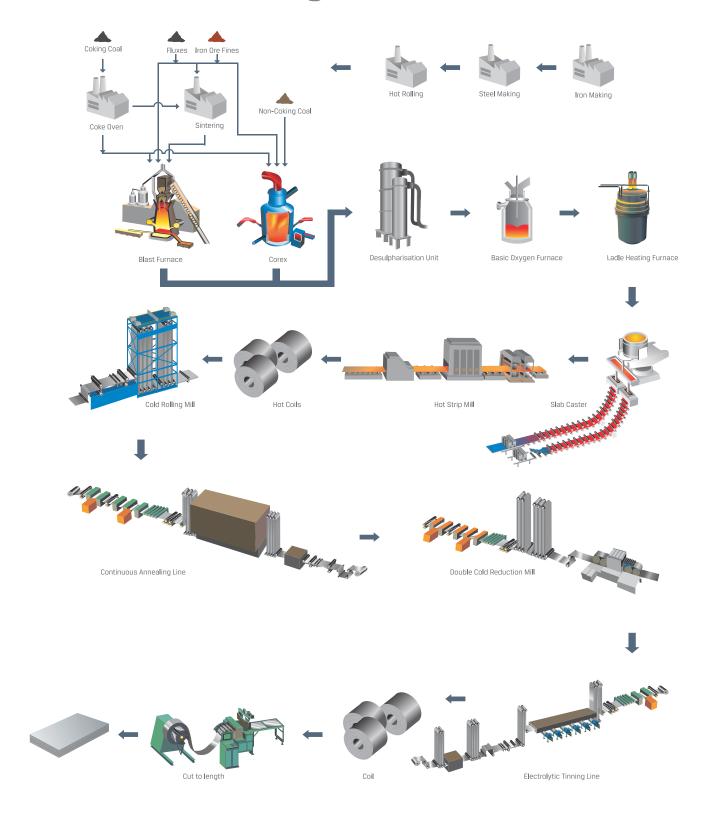
**Aroma & Flavour** 

Having similar applicability, an economic alternative to Tinplate is the Tin Free Steel, also called Electrolytic Chromium Coated Steel. The replacement of tin with chromium alters some fundamental characteristics: improved lacquer adhesion, inability to weld or solder and lower brightness, compared to Tinplate. Tin Free Steel is often exclusively used in packaging where welding or soldering is not required for e.g. manufacturing of crown caps and two-piece shallow drawn cans.

**Excellent Printability** 



# **Manufacturing Process**



# The CAL Advantage

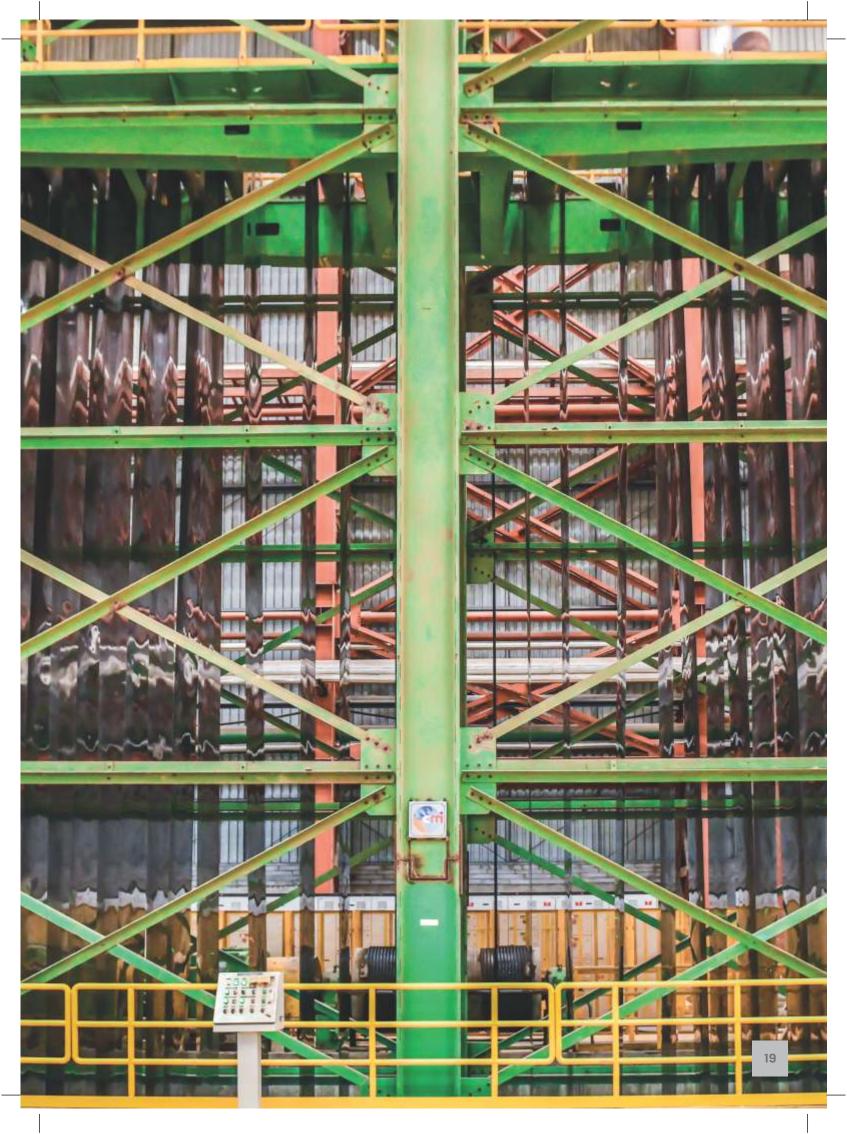
JSW has commissioned the first Continuous Annealing Line (CAL) for Tinplate in India. Unlike the historically used batch annealing method of production, the Tinplate produced by CAL has very high uniformity in terms of gauge and temper. This uniformity in characteristics of CAL produced Tinplate provide a clear edge in different applications:

- Food and Beverage Cans
- Crown Caps
- Battery jackets

Uniformity and precision are the most crucial differentiators for manufacturers with high speed can lines. High uniformity allows manufacturers to increase their yield per tonne of Tinplate due to fewer rejections. Continuous annealed tinplate is thus, key to enabling higher productivity for manufacturers. The advantages of continuous annealed tinplate can have a direct bearing on the scale, efficiency and profitability of business.

Can manufacturers had to rely on imports for their requirement for supply of high quality tinplate. With JSW CAL produced JSW Platina, can manufacturers are able to get domestically produced high quality Tinplate right at their doorstep.





# Product range & Specifications

JSW Tinplate products have a wide variety of applications in both food and non-food product packaging and are available in both Single Reduced (SR) and Double Reduced (DR) variety. Double Reduced (DR) Tinplate is normally Thinner, Stronger, and Brighter, as compared to conventional Single Reduced Tinplate and gives more cans from each ton of Tinplate. Both the grades are tailor-made within the following ranges

	Parameter	Minimum	Maximum
	Tin coating	0.56 gsm	16.8 gsm
Thickness	Single Reduced	0.18 mm	0.60 mm
	Double Reduced	0.14 mm	0.21 mm
Width		650 mm	1250 mm

## **Temper**

Different applications of tinplate require different degree of hardness for the base material. The desired hardness is established in the temper rolling mill/double cold rolling mill. The standard temper grades are designated according to the Rockwell Hardness Test. The doubly reduced (DR) temper is produced to obtain extremely high yield strength tinplate. Such tinplate enables the can maker to produce thinner gauge and lighter cans, without compromising strength.

Doubly Reduced		
Designation	Nominal Rockwell Hardness Values 30T	
DR-7.5	71	
DR-8	72	
DR-8.5	73	
DR-9	75	

Single Reduced		
Designation	Alternate Designation	Nominal Rockwell Hardness Values 30T
T-1	T-49	49
T-2	T-53	53
T-2.5	T-55	55
T-3	T-57	57
T-3.5	T-59	59
T-4	T-61	61
T-5	T-65	65

## **Coating Grades**

Tin coating on the outer surface of the finished product depends on the desired aesthetic finish, while the coating for the internal surface depends on the material to be packed. Accordingly, multiple combination of coating is available as part of our product offering, as mentioned below.

Туре	Designation of coating mass	Nominal coating mass (gsm)	Minimum avg. coating mass (gsm)
Equally Coated	2.8/2.8	2.8/2.8	2.45/2.45
	5.6/5.6	5.6/5.6	5.05/5.05
	8.4/8.4	8.4/8.4	7.55/7.55
Differentially Coated	11.2/11.2	11.2/11.2	10.1/10.1
	5.6/2.8	5.6/2.8	5.05 / 2.45
	8.4/2.8	8.4/2.8	7.55 / 2.45
	8.4 / 5.6	8.4 / 5.6	7.55 / 5.05
	11.2 / 2.8	11.2 / 2.8	10.1 / 2.45
	11.2 / 5.6	11.2 / 5.6	10.1 / 5.05
	11.2 / 8.4	11.2 / 8.4	10.1 / 7.55



# Some typical end uses of JSW Tinplate – gaugewise

## Double Reduced (DR)

Thickness (mm)	End uses & Top/Bottom of Cans
0.14-0.18	Lug Caps, Processed Tobacco/Mouth Freshener, Processed Food cans, Baby Food, Coffee Cans, Dairy Cans, Paint Cans
0.21-0.23	15Ltr Edible Oil Can Body / Ends

## Single Reduced (SR)

Thickness (mm)	End uses & Top/Bottom of Cans
0.19	Lids and Ends for Baby Food Cans (Welded/ Non Welded), Body for other Food Cans
0.20 - 0.30	OTSC (Baked Beans, Mango Pulp, Mushroom, Baby Corn, Green Peas, Tomato Puree etc)
0.17 - 0.38	Battery / Aerosol Cans
0.22	2Kg Edible Oil / Ghee Containers and End Components, Cheese/Butter Cans, Lugcaps
0.24 - 0.25	Crown Corks, 5Kg Edible Oil Containers and Components
0.28	15Kg Edible Oil Containers (Body, Top & Bottom), Cashew Cans, Biscuit Cans etc







# Advantages of JSW Platina



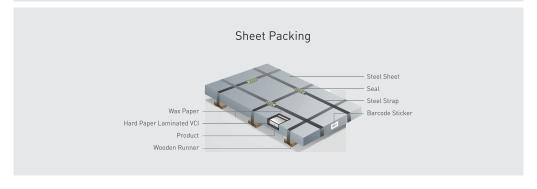


# **PACKAGING**

JSW offers effective packaging as per your requirements and in compliance with international norms. Emphasis is placed to ensure durability, prevention of any damage during transportation and better storage.









# **JSW Steel Offices**

## **Corporate Head Office**

JSW Centre

Bandra Kurla Complex, Bandra (East), Mumbai - 400 051 Tel.: +91 22 - 42861000 | Fax: +91 22 - 42863000

#### Sales Offices

#### AHMEDABAD

Office no. 501 & 502 Mondeal Heights, B-wing Iscon Cross Road, Near Novotel Hotel, opp. Karnavati Club, S. G. Highway, Ahmedabad-380 054 Mobile: 094273344449 Tel: 079-49000270/271/272/273/274/275

#### BENGALURU

The Estate, 3rd Floor, West Wing, 121, Dickenson Road, Bengaluru - 560 042 Tel: 080-42448888

#### CHENNAI

5th Floor, KRM Plaza, No. 2, Harrington Road, Chetpet, Chennai - 600 031 Tel: 044-28297420, 28297422

#### COIMBATORE

T. V. Swamy Road (West), Coimbatore - 641 002 Tel: 0422-2541870

#### DELHI

NTH Complex (4th Floor), A-2, Shaheed Jeet Singh Marg, Qutub Institutiuonal Area, New Delhi – 110016 Tel: 011-48178600 | Fax: 011-48178699

#### FARIDABAD

Piyush Global I Building 1st Floor, Plot No.5, Opposite Escorts Mujesar Metro Station Main Mathura Road, NH-2, YMCA Chowk, NIT Faridabad - 121006, Haryana Tel: 0129-2239248, 2232387

#### NOIDA

14A, Industrial Area, Buland Shar Road, Ghaziabad - 201 009 Tel: 0120-3262875, 2867142

#### **GUWAHATI**

106, 3rd Floor, Meer Market, Maszid Lane, Kamarpatty, Guwahati - 781 001 Tel: 0361-2730054

#### HYDERABAD

JSW STEEL LTD.

Babukhan Millenium Centre, 63-1099 /1100, 7th Floor, Block - A Somajiguda, Hyderabad - 500082 Tel: 040-27846669/79

#### INDORE

3rd Floor, Lakshya Badgara, 13/1, New Palasia, Near Curewell Hospital, Indore - 452 001 Tel: 0731-2532156/57/58/59, 4043613

#### 1ΔΙΡΙΙΕ

Evershine Tower, F-1, 705, 7th floor, Amarpali Circle, Vaishali Nagar, Jaipur - 302 021 Tel: 0141-4026760/62/63/64

#### KANPUR

Room No.105, Ratan Esquire, Chunniganj, Kanpur - 208 001 Tel: 0512-3271907

#### KOCHI

Mitsun Enterprise, 30/1854 B4, 1st Floor, Ponnurunni Road, Chalikkavattom Junction, Vytilla P.O., Kochi - 682 019 Tel: 0484-4026392/4063294

#### KOLKATA

Godrej Waterside, 10th floor, Tower - 1, Unit No. 1003, Block - DP, Plot - 5, Sector V, Salt Lake City, Kolkata - 700 091, Tel: 033-40002020 | Fax: 033-40002021

#### LUDHIANA

109, Modelgram, Near Kochar Market, Opp. Malwa School, Ludhiana - 141 002 Tel: 0161-6578944, 6450816

#### MUMBAI

Grande Palladium, 6th Floor, 175, CST Road, Kalina, Santacruz (East), Mumbai - 400 098 Tel: 022-61871000

#### NAGPUR

Poonam Plaza, Palm Road, Civil Lines, Nagpur-440 001 Tel: 0712- 2520333

#### ΡΔΤΝ

1, Tilak Nagar East, Behind Patna Diesel, Kankarbagh, Patna - 800 020 Tel: 08002230517

#### PUNE

Epicentre 2nd Floor, CTS No. 4/6, Above Royal Enfield Showroom Shivajinagar, Wakdewadi, Pune - 411005 Tel: 020-64104547, 27111427

#### RUDRAPUR

Plot No. 264, By Pass Road, Village Kishanpur, Kichha, District Udam Singh Nagar, Uttrakand - 263 148 Tel: 05944-263290

### Middle East Office

JSW Steel Ltd. (DMCC Branch) Unit 309 | X - 3 Tower | Jumeirah Lakes Towers Dubai, UAE P.O. Box # 33650 Tel.: +971 4 4385286 | Fax: +971 4 4385297 Mobile: +971 55336097

### **USA Offices**

JSW Steel USA Baytown, 5200 East McKinney Road, Baytown, Texas 77523, Tel.: 281-383-5100 sales@jswsteel.us

#### JSW Steel USA Ohio

1500 Commercial Avenue, Mingo Junction, OH 43938

Mobile: 740-535-8172

## **Italy Office**

JSW Steel Italy Largo Caduti Sul Lavoro 21 57025, Piombino LI, Italy Tel: +39 0565 64111



JSW STEEL LTD.

JSW Centre, Bandra Kurla Complex, Bandra (East), Mumbai - 400051 Phone: 022 4286 1000 | Fax: 022 4286 3000 | Toll free: 1800-225-225

Email: support.steel@jsw.in | Web: www.jsw.in/steel

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