



# Zero Spangled Galvanized Steel



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**JSW Steel**  
helping India move forward.



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# 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.

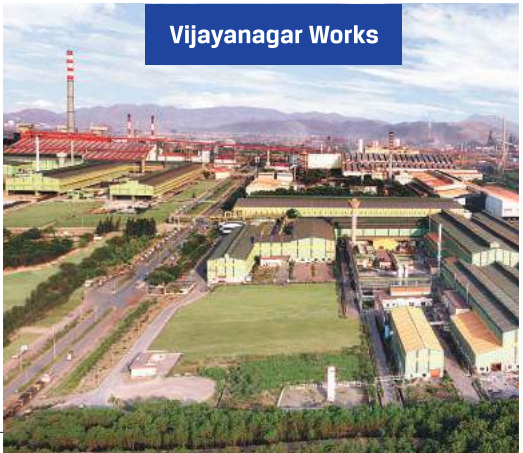




# JSW Steel Ltd.

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.

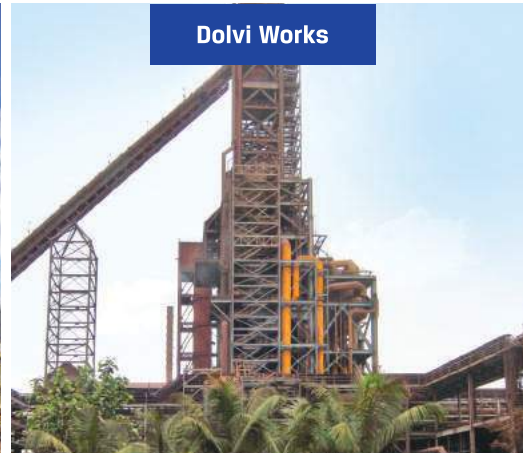
JSW Steel continues to enhance its capabilities to meet the rapidly changing global market needs. To stay on the leading edge of technical advancement, JSW has entered into technological collaboration with JFE Steel Corp, Japan to manufacture high strength and advanced high strength steel for the automobile 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.



Vijayanagar Works



Salem Works



Dolvi 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



**Introduction**

Galveco is JSW's brand new range of RoHS-compliant lead-free steel which addresses the unfulfilled need of green-consumers. Our Galveco range of people & environment friendly products is available in Galvanized variants and is ideal for use in White Goods & HVAC.

**What does Galveco stand for?**


Galveco, being ROHS-compliant, is environmentally safe and offering extended life, is economically advantageous.


The surface quality of Galveco makes it ideal for manufacturing visible parts & components. Galveco can be post-painted and offers an outstanding surface aspect. The paint layer perfectly adheres to the metallic coating.


Galveco is committed to deliver high performance and meet the diverse & stringent needs of the White Goods & HVAC Segment.


**The Galveco edge**


Galveco attempts to bridge the gap between your expectations & the reality with the following distinct advantages:


- 


Uniform and superior coating adhesion
- 

Consistent thickness
- 

Higher corrosion resistance
- 

Assured product quality
- 

Excellent surface finish and flatness
- 

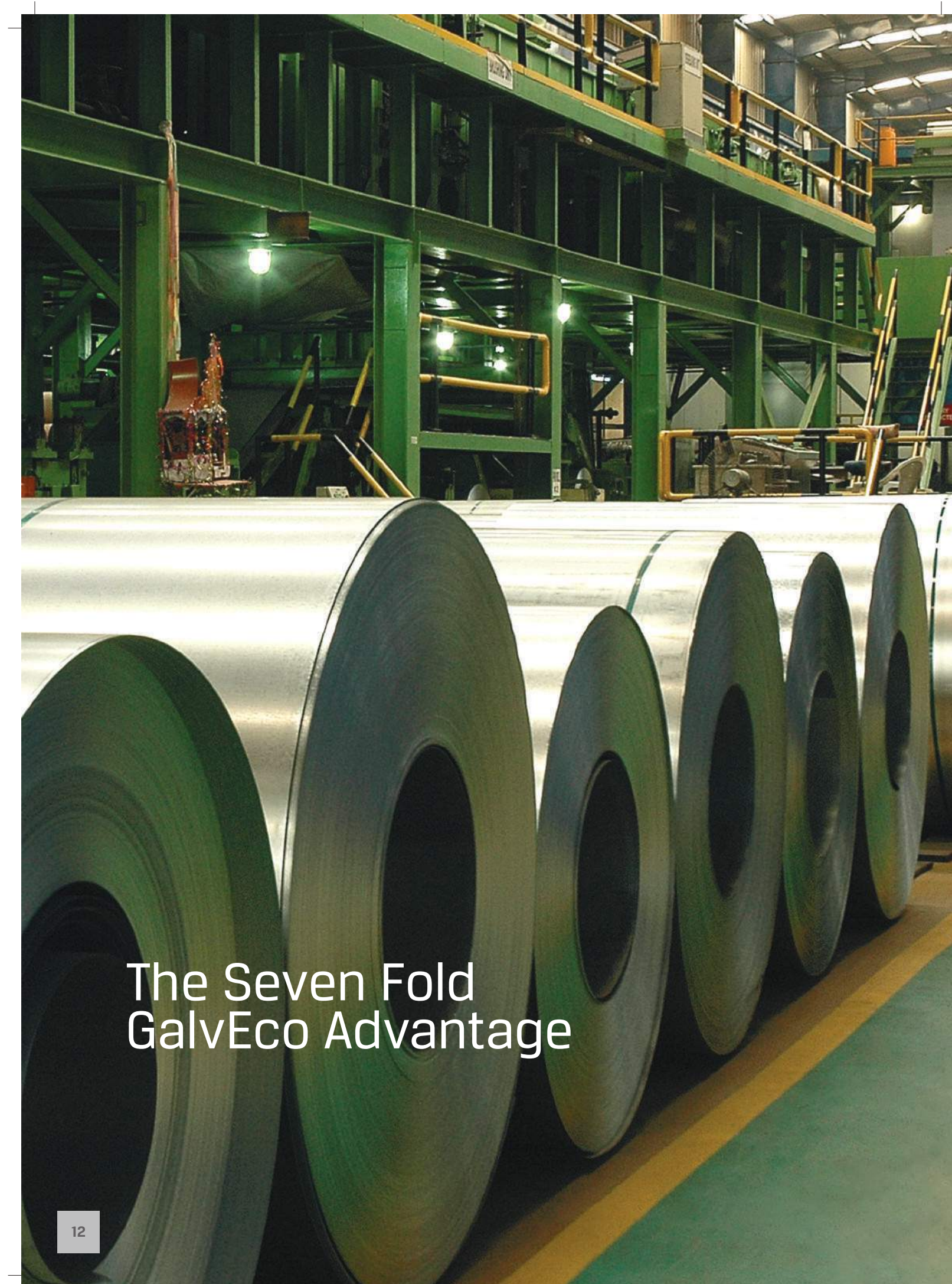
Eco-friendly
- 

Superior paint adhesion

In addition to the above, we have a well-developed in-house R&D and Application Engineering team to help you/your vendors choose the right steel for your demanding use.

**Suitable applications for Galveco**

- Galveco is available in coil and sheet forms and is ideal for:
- Domestic appliances such as washing machines, dryers, dishwashers, microwave ovens, air conditioners, refrigerators among others
  - Electronic goods such as computers, laptops and TV casings
  - Heating, Ventilation & Air Conditioning (HVAC) systems
  - Furniture including cupboards, desks, shelves and electrical cabinets
  - Electrical Panels, bus body
  - Building Components and Accessories such as Roofing, Ceiling Grid Systems, Electrical Boxes, Light Steel Framing, Truss Plates among others



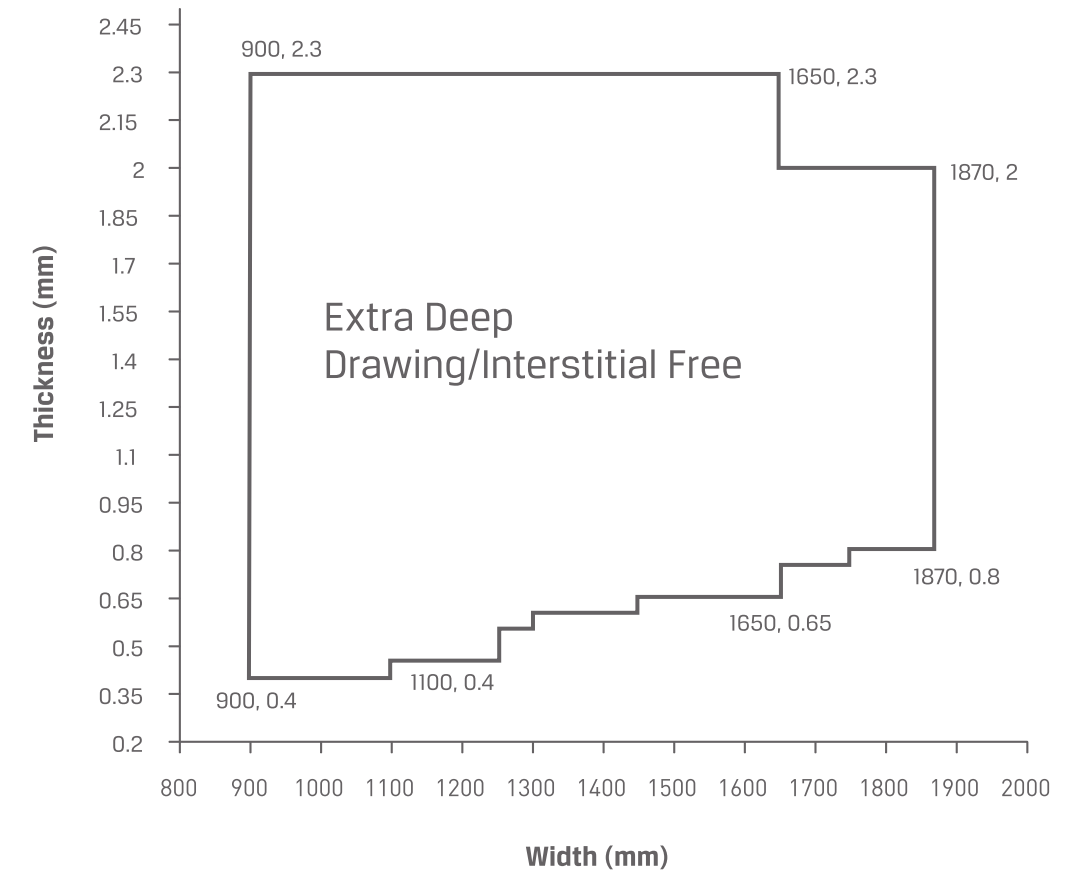
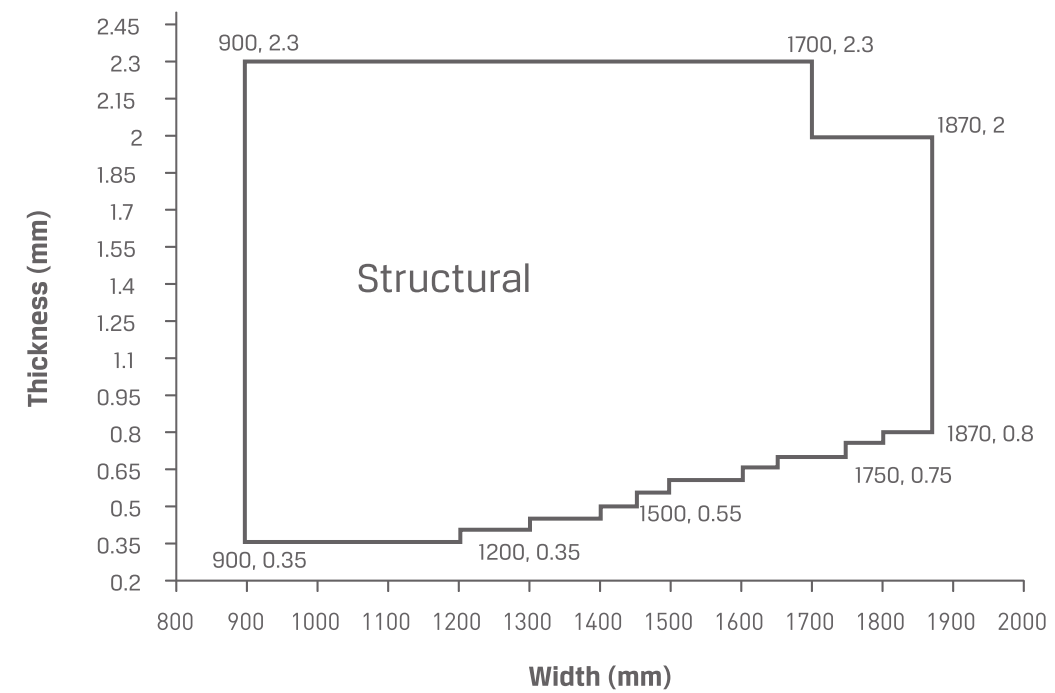
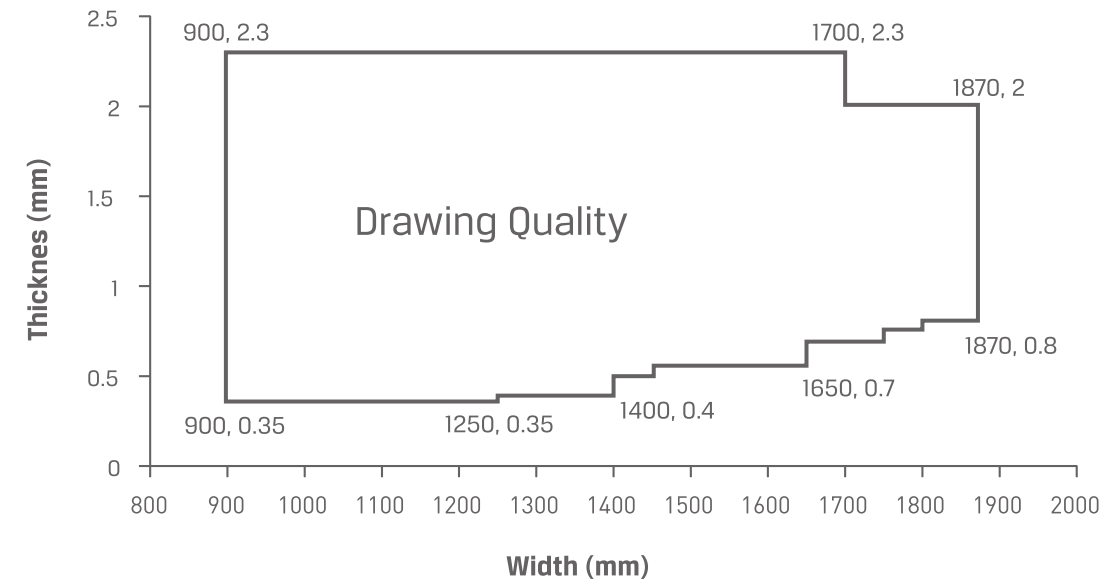
## The Seven Fold GalvEco Advantage

- 1 Uniform and superior coating adhesion**
  - Achieved through electrolytic cleaning of steel substrate before coating & Bend Test for coating adhesion conducted as per relevant standards
  - Prevents coating peel-off & grazing (pebbly surface) during fabrication, thereby ensuring end-product durability & finish
- 2 Higher corrosion resistance**
  - Higher corrosion resistance is provided by zero spangled, skin-passed surface with uniform zinc coating in GI and additional protection offered by Aluminium in GL
  - Ensures that the end products manufactured from it not only meet but also exceed their life expectancy
- 3 Excellent surface finish and flatness**
  - Improved surface texture & superior shape retention are manifested by truly zero spangled surface of GI & minimized spangled surface of GL
  - Ensures better finish of the end-products
- 4 Superior paint adhesion**
  - 'Ra' varying between 0.6 & 2 microns provides best surface finish in painting applications, compared to the finish offered by ordinary spangled GI/GL
  - Ensures lower paint consumption, lower cost and better end-product finish
- 5 Consistent thickness**
  - Automatic Gauge Control (AGC) mechanism commissioned at its state-of-the-art Tandem Cold Rolling Mill ensures uniform and close thickness tolerance.
  - Ensures higher yield in end applications - meaning more number of parts per kg compared to ordinary Galvanised/Galvalume products
- 6 Assured product quality**
  - Best quality substrate steel achieved by applying close controls on process parameters right from Raw Material stage to steel production, ensures optimum formability
  - Special oils are provided on certain grades of steel for superior stamp-ability and die-forming properties
- 7 Eco-friendly**
  - Unlike ordinary coated steel, GalvEco is produced using "Lead-Free" coating Chemistry making it ROHS compliant and a safer product
  - Use of superior grade zinc lowers the default lead content in the bath & use of chrome free passivation ensures that GalvEco is truly environment friendly

# Technical details

## Galvanised:

Zn coating range GSM - 70-350







### Particulars

Coil weight T	8-30
Coil id mm	508/ 610

Spangle	Zero
Surface Treatment	Tri-valent Chrome (as per RoHS norms), Chrome free Organic coating
Oiling	Oiled/Unoiled
Surface Roughness (For Skin Passed)	0.7-1.6 microns
Post Treatment	Stretch Leveled/Non Stretch Leveled/Skin Passed
Edge Condition	Trimmed/Mill edge

### Thickness tolerance

CR_Thk Min mm	CR_Thk Max mm	Thk tol (+)* μm	Thk tol (-) μm
0.35	0.79	70	0
0.8	0.99	90	0
1	1.24	110	0
1.25	1.59	130	0
1.6	1.99	150	0
2	2.29	170	0

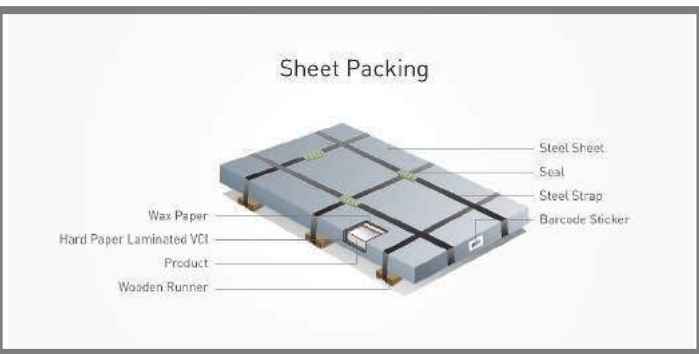
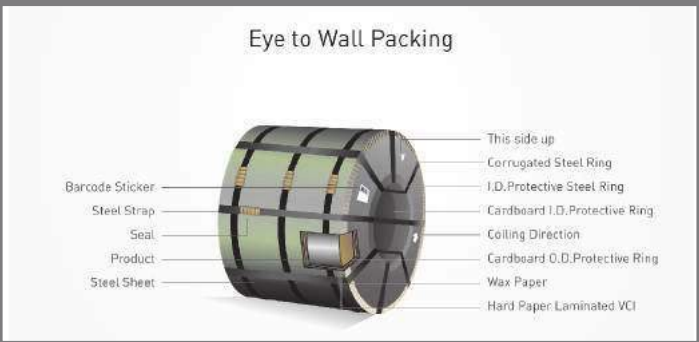
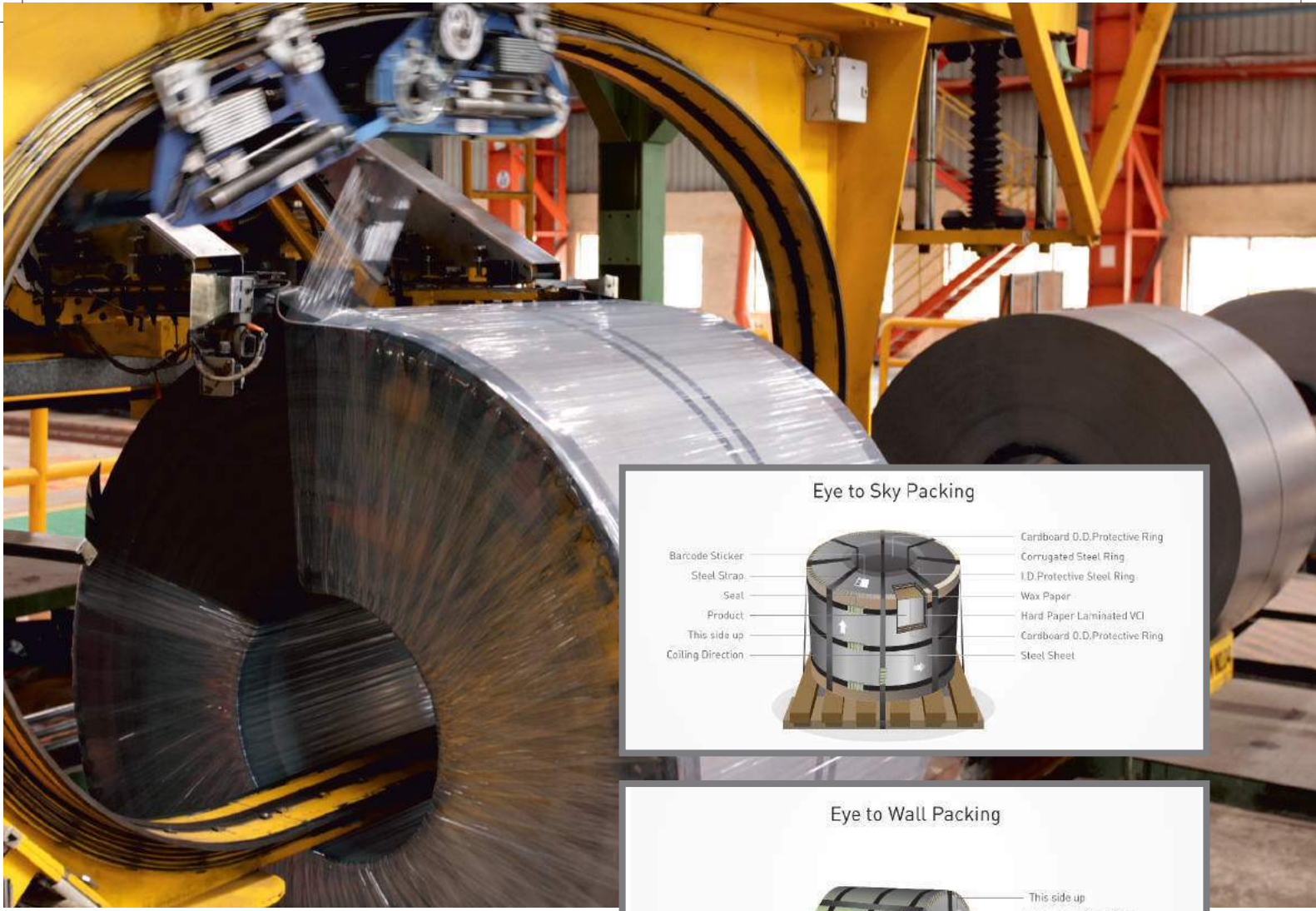
\*Only widest tolerances for every range have been mentioned

### Width tolerance

Width Min (mm)	Width delta (mm)
Mill Edge	+5/-0
Slit/trim	+3/-0

### Grade specifications

Grade	Specification	Designation
Low carbon (drawing, deep drawing, extra deep drawing)	EN 10346 - 2009	DX51D (Z), DX52D (Z), DX53D(Z), DX54D+Z, DX56D+Z, DX57D+Z
	ASTM A653 - 2006	CS Types A,B & C, DDS Types A & B, EDDS
	JIS G 3302 - 1998	SGCC, SGCD1, SGCD2, SGCD3
Structural	EN 10346 - 2009	S220GD(Z), S250GD(Z), S280GD(Z), S320GD(Z), S350GD(Z), S390GD(Z), S450GD(Z)
	ASTM A653 - 2006	SS 230, SS 255, SS 275, SS 340 Class 1,2,3 & 4, SS 380
	JIS G 3302 - 1998	SGC340, SGC400, SGC440, SGC490, SGC570



# 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.

# RoHS

## What is RoHS?

RoHS is the acronym for Restriction of Hazardous Substances. RoHS, also known as Directive 2002/95/EC, originated in the European Union and restricts the use of specific hazardous materials found in electrical and electronic products.

## Which are the restricted materials mandated under RoHS?

The substances banned under RoHS are lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBB) and polybrominated diphenyl ethers (PBDE) flame retardants.

## What are the downsides to having additional lead in the bath?

Yes, the additional lead in the bath has the following negative effects on the performance of coated steel

- **Impaired aesthetics of the coated steel**
  - Addition of lead leads to darkening of the spangles over time
- **Delayed adhesion failure**
  - Being immiscible with zinc, lead solidifies at the spangle boundaries to form corrosion cells in humid climates. After some months this results in cracking and peeling of the coating when the product has been formed using sharp bending.
- **Unsuitable for applications requiring painting**
  - Poor adhesion of paint to its surface
- **Poses severe health risk for humans**
  - Particularly when used in applications that have direct contact with human beings or indirect contact that may reach humans through air, water and soil, such as storage tanks, water pipe lines and HVAC ducts or other similar applications

## Why is RoHS compliance important?

The restricted materials are hazardous to the environment and pollute landfills, and are dangerous in terms of occupational exposure during manufacturing and disposal. At JSW Steel we take our certifications seriously, from our ISO 9001 certification to our RoHS compliant manufacturing facility, we pride ourselves on taking a vested interest in our clients and delivering high quality products and services while being environmentally conscious.

## Which companies are affected by the RoHS Directive?

Any business that sells applicable electronic products, sub-assemblies or components directly to EU countries, or sells to resellers, distributors or integrators that in turn sell products to EU countries, is impacted if they utilize any of the banned materials.

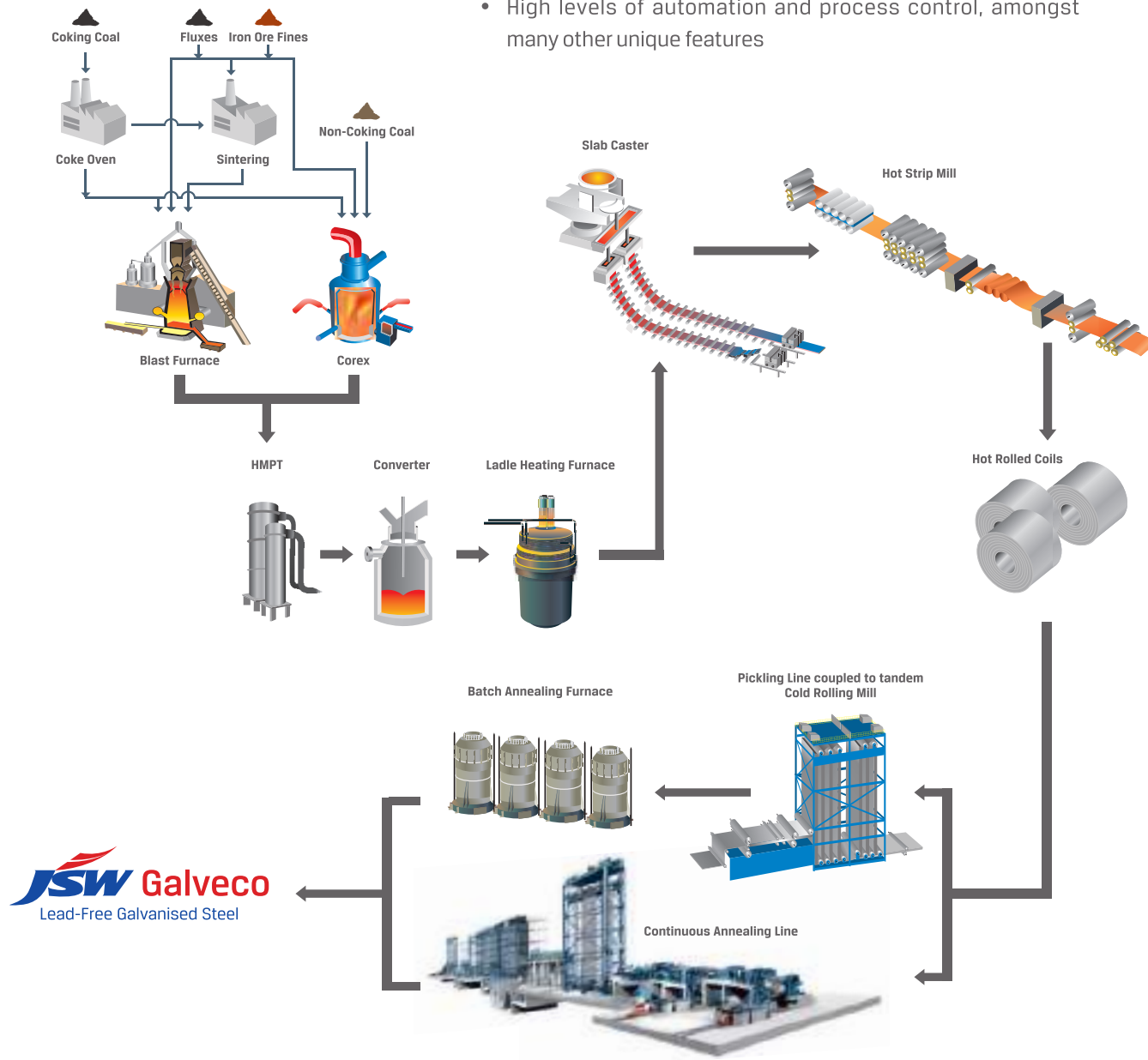
For some companies, compliance is for Corporate Social Responsibility, or "CSR," also known as "good PR."

# Our state-of-the-art manufacturing facilities

JSW's commitment to proven and emerging technologies has resulted in a steelmaking operation that is among the most advanced in the world. The addition of GalvEco coated steel to our extensive product mix enables us to serve our General Engineering customers more effectively and efficiently today and provides us with a technological platform to serve them even better in the future.

## Salient Features:

- Electrolytic cleaning section for high degree of strip cleaning
- Online wet Skin Passing and Tension Levelling
- High levels of automation and process control, amongst many other unique features



## Vijayanagar Works

JSW Steel Vijayanagar plant is the first integrated steel plant to reach 10 MTPA capacity at a single location in India. It is the first plant in India to use the Corex technology for hot metal production.

The first hot strip mill at Vijayanagar was commissioned in 1997. Since then it has grown exponentially and now has an installed capacity to produce 10 MTPA of steel. Located 380 kms from Bengaluru at a village, Toranagallu North Karnataka in the Bellary-Hospet iron ore belt, is a fully integrated steel plant well-connected with both Goa and Chennai ports.

## Unique Features

- Houses one of India's largest blast furnace and the widest hot strip mill
- The only plant in India with paircross technology and twin-stand reversible cold-rolling mill
- The highest productivity steel plant in India, producing 800-plus tonnes per person per annum
- Recognised for its 'zero-effluent discharge' status; it reuses more than 95 per cent of process waste
- Low carbon footprint as it recycles 96% of coke oven gas for power generation
- Uses sophisticated ambient air control infrastructure beyond and has reduced gas flaring to lower levels.

## Product Portfolio

- Hot Rolled Steel
- Cold Rolled Steel
- Galvaneal & Galvanised Steel
- TMT bars
- Wire rods

# Awards & Recognitions

## AWARDS

1. JSW Vijayanagar won the Award in the Innovation Category 2016 at World Steel Association's STEELIE AWARDS
2. JSW Steel Coated Products won the IMC RBNQ Performance Excellence Trophy 2016 in the Manufacturing Category
3. JSW Steel accredited with Level-5-Exemplary Rating by Total Cost Management Maturity model by CII 2016 (highest in category)
4. JSW Steel wins the National Supply Chain And Logistics Excellence (SCALE) Award by CII 2016
5. JSW awarded prestigious PORTER Prize 2015
  - i. JSW Group for Creating shared value
  - ii. JSW Steel for Leveraging unique activities
6. JSW Steel (Vijayanagar plant) awarded PM Trophy for being the 'Best Performing Integrated Steel Plant' in the country during the performance year 2012-13
7. JSW Steel bags Construction World Award 2015 for Fastest Growing Steel Company
8. JSW Steel won Frost & Sullivan's "2015 India Steel Manufacturing Competitive Strategy and Innovation Leadership Award"
9. JSW Steel awarded Industry Leadership Award at Global Platts Metal Awards 2015
10. JSW Steel (Vijayanagar Works) awarded CII-ITC 2015 Sustainability Award

## Recognitions

1. Letter of Appreciation by Whirlpool (2016)
2. Best Vendor Award 2015 & Best Contribution Partner of the Year 2015 by Samsung
3. Star Performer 2014 by Haier Appliances
4. Zero defect supplies by Toyota Kirloskar Motors
5. Best Supplier award by Tata Motors
6. Best Delivery Supplier by FAG Schaeffler

# Contact us

Our goal is to deliver positive customer and stakeholder experiences with our product and in all aspects of our business. Please get in touch and let us know how we can help.

# Sales Offices

## Corporate Head Office

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