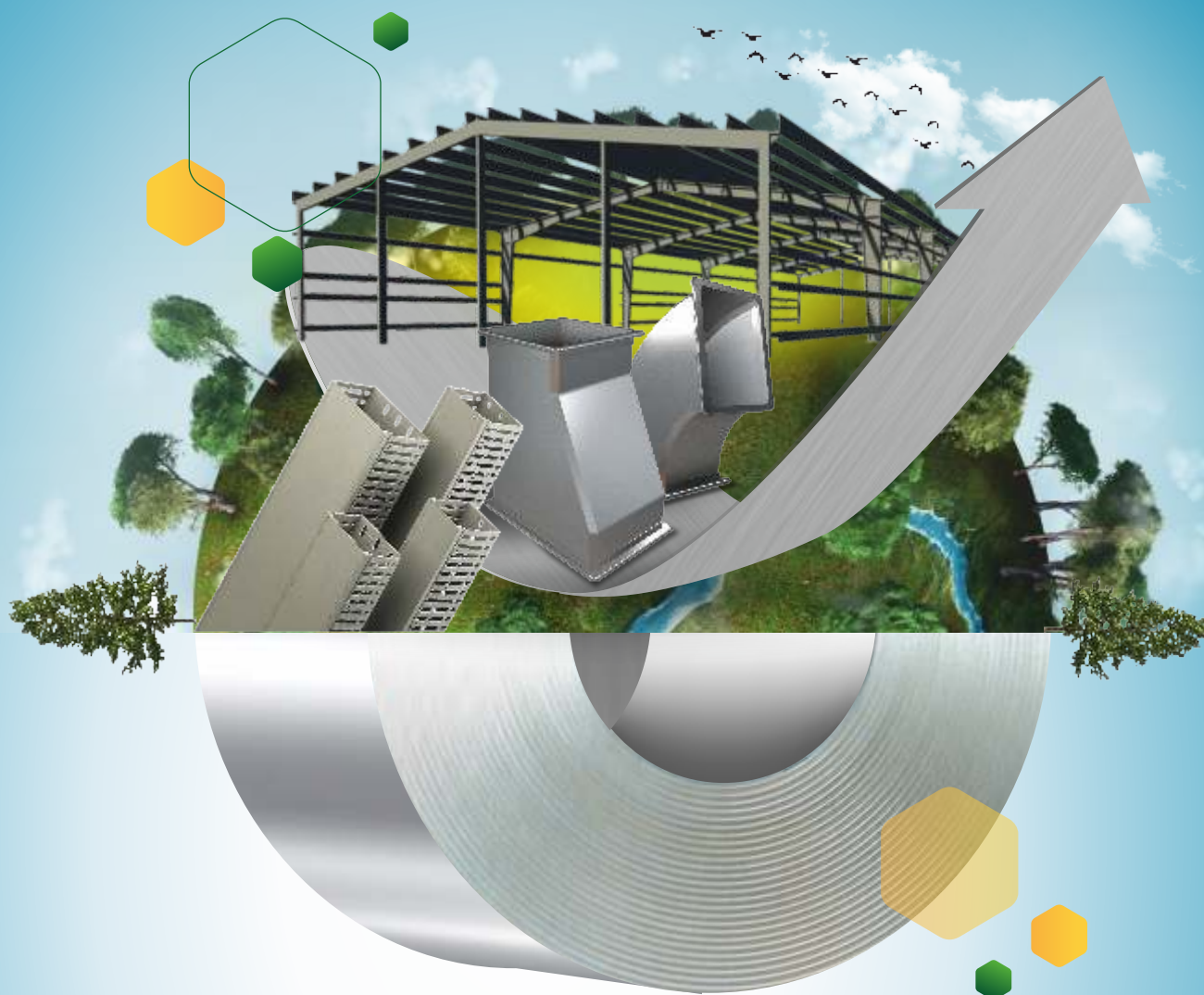


Introducing
GalvaRoS



SUSTAINING
the quest for value

CREATING REAL VALUE IS THE CORE OF SUSTAINABILITY...

The ability to last well into the future is, perhaps, the simplest way to describe sustainability. While sustainability is about the future of our society, for today's businesses, it is also about commercial success, that enables a business to sustain in the years to come. As a result, it becomes imperative to innovate on strategy, design and production of steel products that offer opportunities for end-users to compete and adapt to a rapidly evolving world.



...AND THE FOUNDATION FOR TOMORROW

Tomorrow's enduring businesses must be responsive and smart, GalvaRoS - RoHS compliant product is the new generation, regular spangled galvanised steel product. It is geared to meet the needs of value-creation, helping customers to navigate the sustainability journey.



CONTENTS

01	Tata Steel Ltd.
02	Manufacturing Facilities
03	Tata Steel's Coated Products Offerings
04	Process Flow of Coated Line
05	GalvaRoS Product Guide
06	Specifications
07	Spectrum of Applications
08	Advantages of GalvaRoS
09	GalvaRoS Product Packaging
10	Product Authentication
11	Storage Instructions
13	Product Guarantee Norms
14	Transportation Norms
15	Tata Steel Research Laboratory & Testing Facility
17	Network of ACE⁺⁺ Service Centres
19	Sales Offices

Tata Steel Ltd.

Tata Steel Limited is a leading player in the steel industry, manufacturing hot rolled, cold rolled, galvanized, galume and colour coated products. The mill capabilities of Tata Steel, has always been very advanced; producing quality products across plants and serving a plethora of segments.

Tata Steel is known for being customer centric. Post acquisition of Bhushan Steel Ltd. by Tata Steel Limited, the synergy between both the companies has resulted in excellent quality, flexibility and reliability in all its products and services. Tata Steel has its manufacturing units in three locations – Meramandali (Odisha), Sahibabad (UP) and Khopoli (Maharashtra).



MANUFACTURING FACILITIES



SAHIBABAD

At the Sahibabad plant of Tata Steel in Ghaziabad, Uttar Pradesh, it has a 1700 mm mill, which produces the widest sheets in India for the automotive industry. It has highly automated systems.



KHOPOLI

The second unit of Tata Steel started at Khopoli, Maharashtra, with narrow and wide CRM, tube and power plans. This plant of Tata Steel in Maharashtra was commissioned in 2004 and has been producing colour coated sheets, high-tensile steel strappings hardened and tempered steel strips for the first time in India, along with CRCA steel to cater to the needs of the automobile industry.



MERAMANDALI, DHENKANAL

Tata Steel has made a name for itself in the list of top suppliers of Steel & Stainless Steel Products, Components and Coils in India. The supplier company is located in Meramandali, Dhenkanal and is one of the leading sellers of listed products.

TATA STEEL'S COATED PRODUCTS OFFERINGS



Zero spangled Galvanized Plain Product (Galvano)



Galvanized Plain Regular Spangle (GPRS)



55% Al Zn alloy coated steel (Aluminium Zinc Coated Steel)



Color Coated Steel (Pre-painted Galvanized)

Tata Steel coated products* add values such as strength, durability, versatility and elegant aesthetics to every spectrum of applications in which they are used.

*GalvaRoS, Galvanova and Colornova produced from Tata Steel Plant.



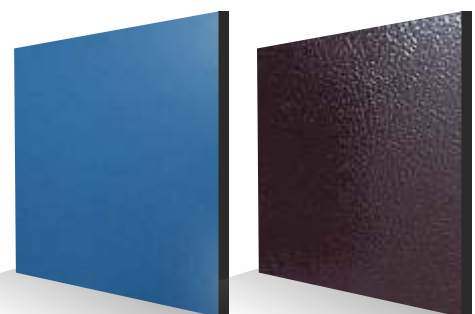
Galvano –
Zero spangled
Galvanized
Plain Product



GPRS –
Galvanized Plain
Regular Spangle

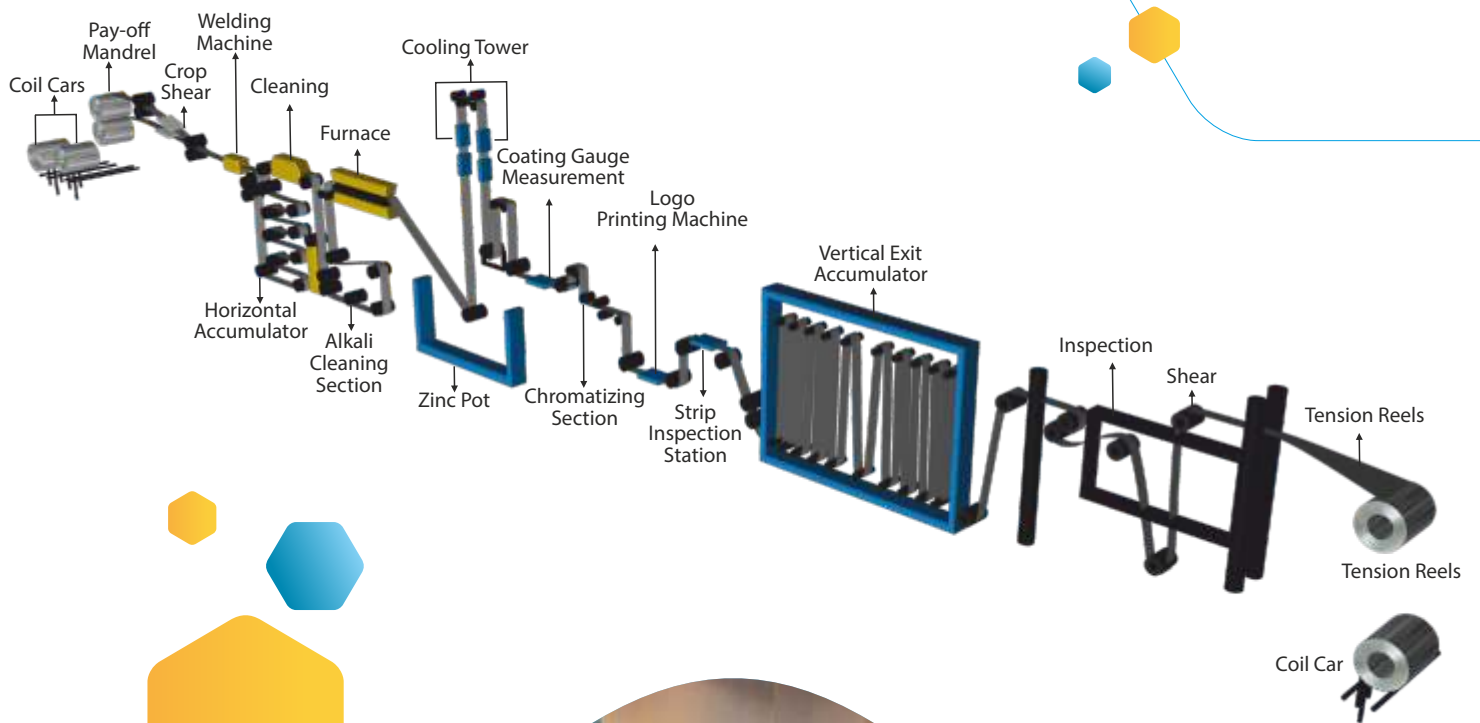


Galvanova –
Aluminium
Zinc Coating



PPGI –
Pre Painted Galvanized

PROCESS FLOW OF COATED LINE



Galvanized Plain Regular Spangle is hot dipped galvanized steel which has a pattern of 'spangles' that are visible to the naked eye.

Tata Steel offers GPRS from all the three mill locations, serving customers across India

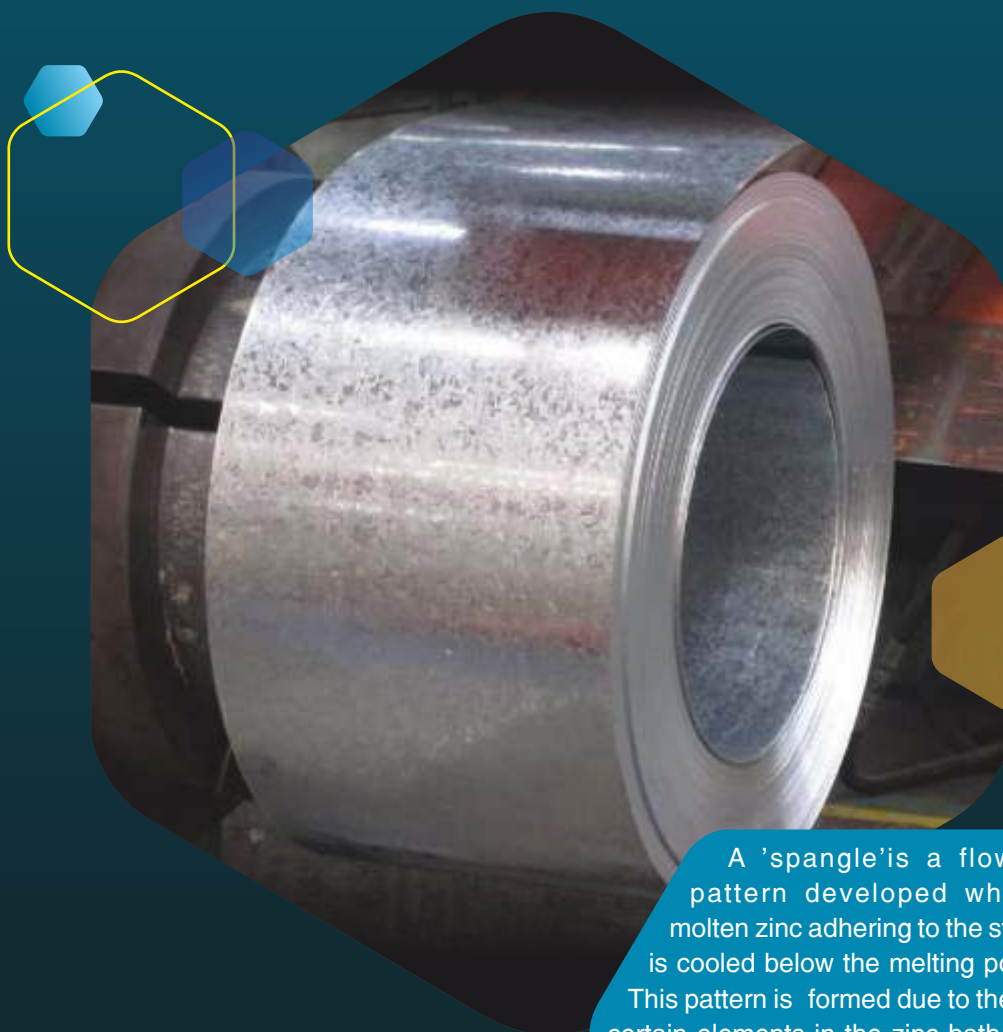
Reference Standards –
IS277:2018, IS513:2016,
/ASTM A653M – 19a
(For High
Strength Galvanized)

Other Standards
JIS G3302 / AS1397 /
EN10327 / IS15961

Substrate
Cold rolled low
carbon steel

Coil Weight Max
12 MT

Coil Inner Diameter
508 mm



A 'spangle' is a flowery pattern developed when the molten zinc adhering to the steel sheet is cooled below the melting point of zinc. This pattern is formed due to the presence of certain elements in the zinc bath like Antimony. As the solid zinc grains grow larger, individual atoms of zinc arrange themselves into the often visible hexagonal symmetry of the final spangle.

Mechanical Properties

Grade	GSM	Thickness Range (mm)	Width Range (mm)	Yield Strength (MPa)		UTS (Mpa)		Min Elongation	Hardness (HRB) (max)	Secondary Passivation (YES/NO)			
				Min	Max	Min	Max			Acrylic coating	Oiling	Chromated	TOC
CQ	80-275	0.25-2.00	900-1250	250	–	360	–	20	55-65	NO	NO	YES	NO
DQ	80-275	0.25-2.00	900-1250	–	280	–	430	27	55-65	NO	NO	YES	NO
DDQ	80-275	0.25-2.00	700-1250	–	260	–	430	36	50-55	NO	NO	YES	NO
EDD	80-120	0.25-2.00	900-1250	–	240	–	370	42	45-50	NO	NO	YES	NO
HSQ	80-275	0.25-2.00	900-1250	350	–	420	–	13	68-81	NO	NO	YES	NO

Thickness Tolerance

Thickness/Width	Width <1000 mm	Width >=1000, <1250mm
0.25 mm to 0.49 mm	±0.025	±0.03
0.50 mm to 0.59 mm	±0.025	±0.03
0.60 mm to 0.79 mm	±0.03	±0.04
0.80 mm to 0.99 mm	±0.03	±0.04
1.00 mm to 1.29 mm	±0.03	±0.04
1.3mm to 1.59 mm	±0.04	±0.04
1.6 mm to 2 mm	±0.04	±0.05

Width Tolerance

Width Tolerance	
Width Tolerance- Min	0 mm
Width Tolerance- Max	5 mm

Edge Condition Tolerance

Edge Condition	Trimmed Edge
Edge wavy coils	3 mm, 3 waves / metre
Edge wavy sheets	4 mm, 2 waves / metre
Edge Camber	2 mm max. In 2 metre leng

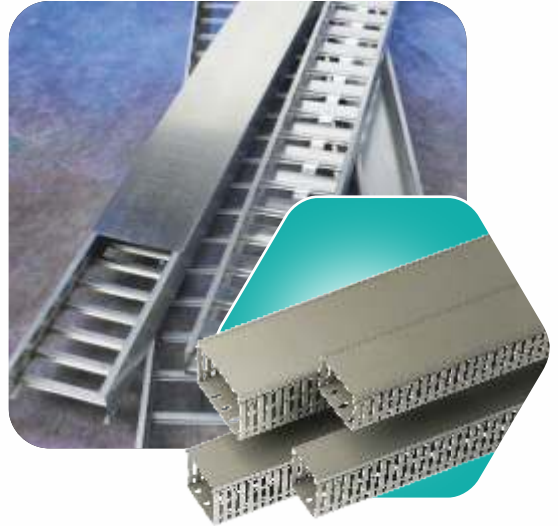
SPECTRUM OF APPLICATIONS

GALVANIZED PLAIN REGULAR SPANGLE (GalvaRoS)

1. Ducting



2. Cable Trays



3. Heating, Ventilation and Air-conditioning (HVAC) systems

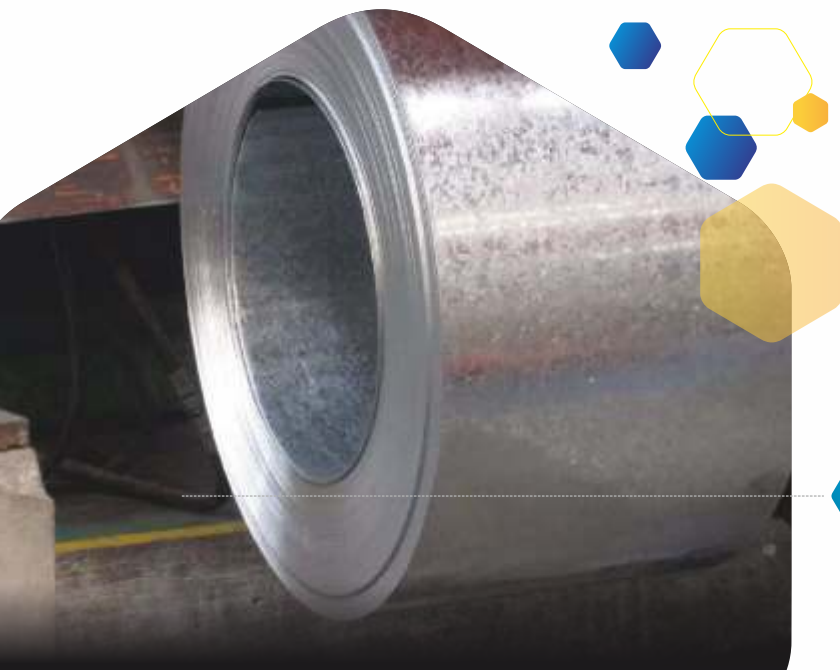


Availability of processed and customized material

4. PEB Structures



5. Refrigerator Back Panels



ADVANTAGES OF GalvaRoS



**Better
Yield**



**Environment
Friendly**
100% RoHS
compliant



Authenticity
Brand name
printed
on the product



**Superior
Corrosion
Resistance**
Salt Spray test



**Uniform Coating
Thickness**
Uniform Zn
coating adhesion



**Strict
Tolerance
is maintained**



**Better Return
on Investment**
By offering
customised product



**Superior
Flatness**
Superior flatness
guaranteed



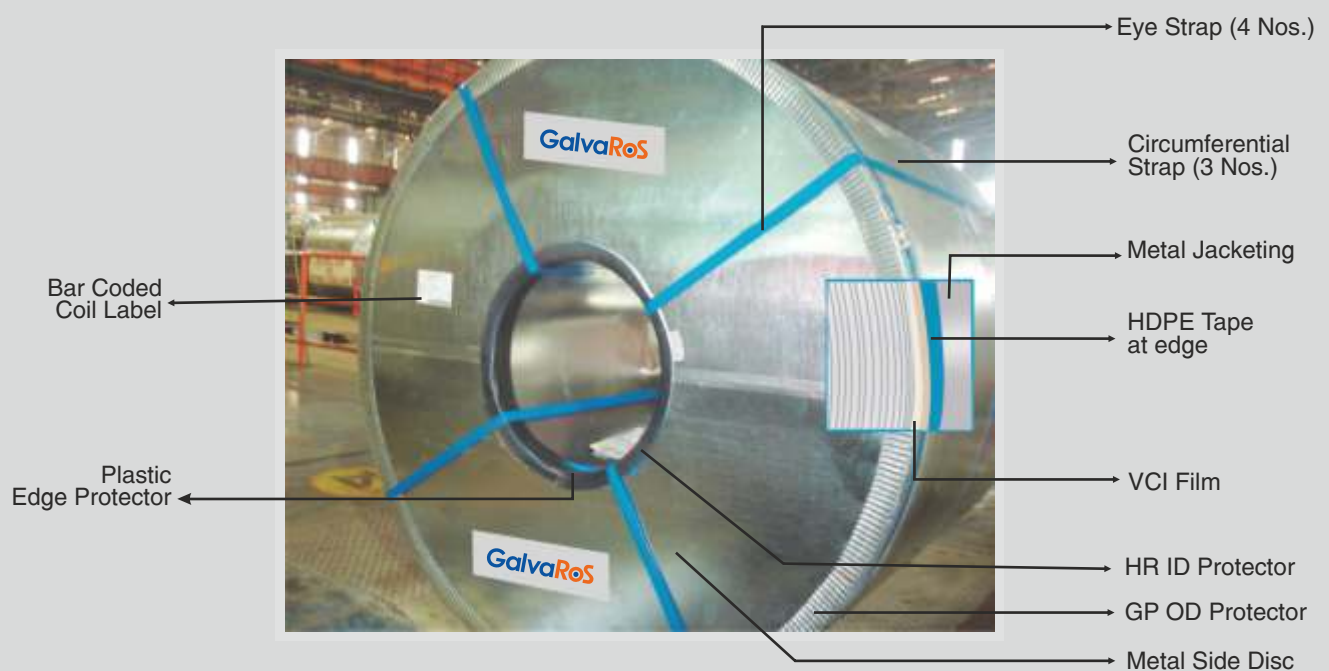
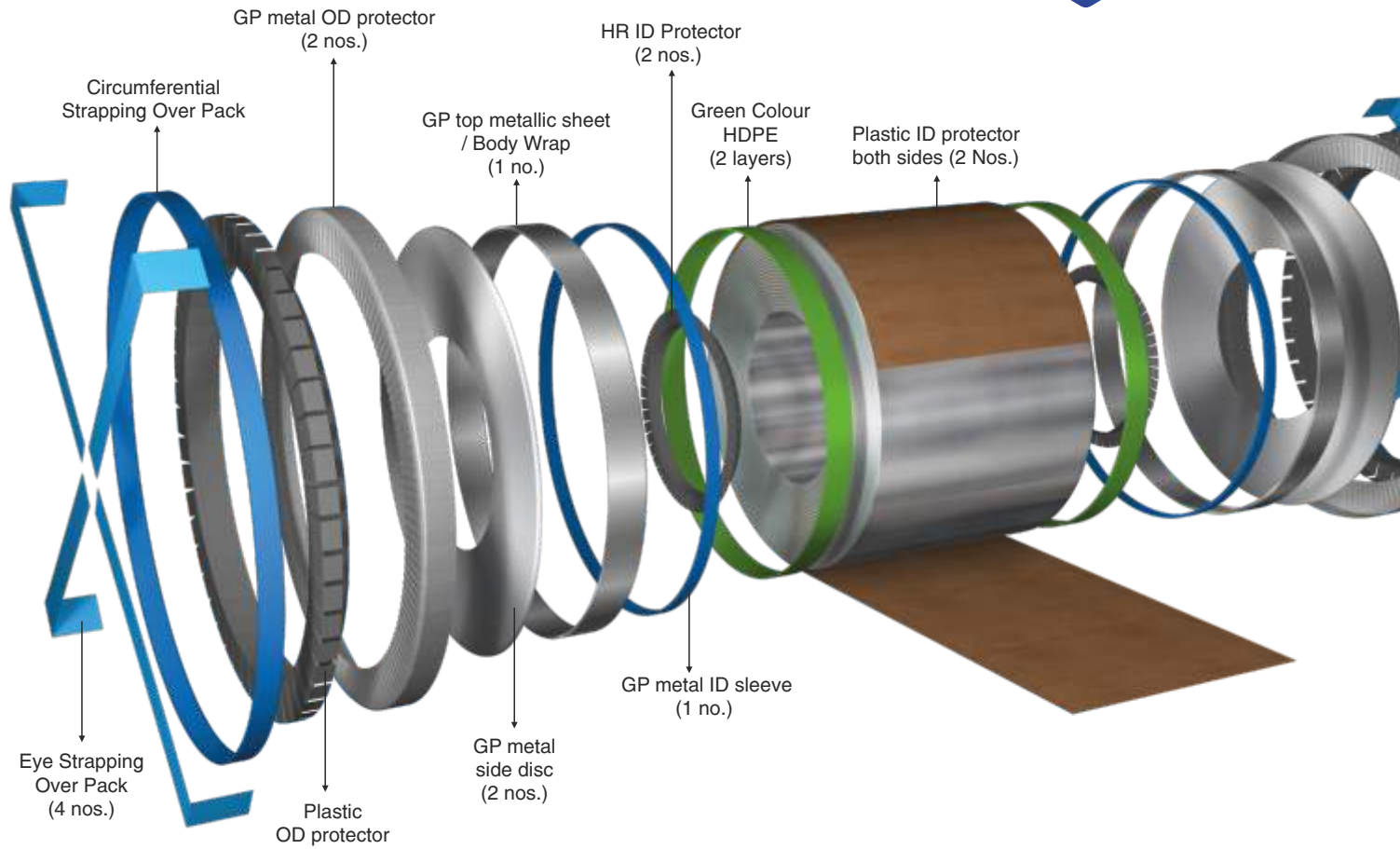
**Various
grades' availability**



**Superior
Packaging**



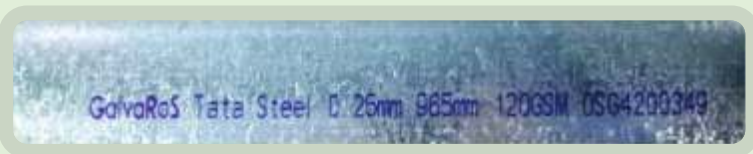
GalvaRoS PRODUCT PACKAGING





PRODUCT AUTHENTICATION

Each coil/bundle has a label carrying the consignment & material details. It ensures proper identification and traceability.



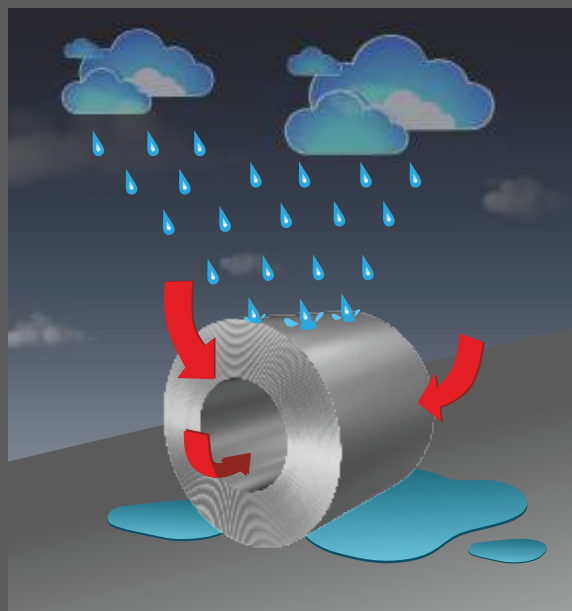
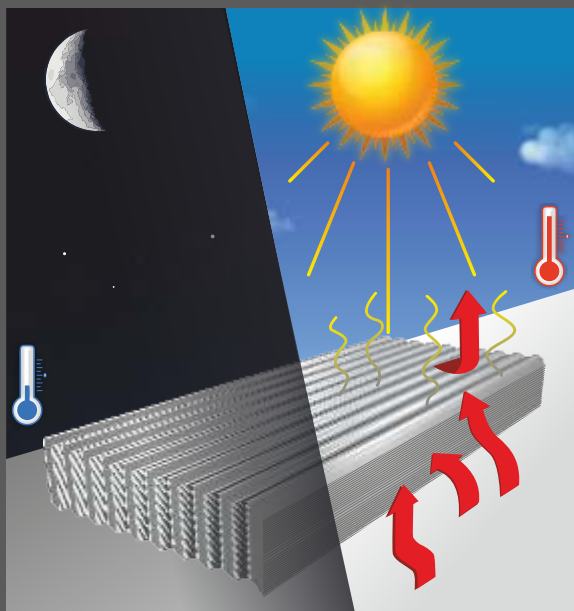
				
CUSTOMER			LOGO OF SERVICE PARTNER	
LOCATION				
COIL NO.				
PACKET NO.				
THICKNESS			XYZ LIMITED 30B, LAKE ROAD, FARIDABAD 121001 Ph 0129 4098200	
WIDTH				
LENGTH				
SIZE				
TDC				
GRADE				
NET WEIGHT				
GROSS WEIGHT				
NO OF SHEETS				Authorised Signatory

STORAGE INSTRUCTIONS

STORING INSTRUCTIONS

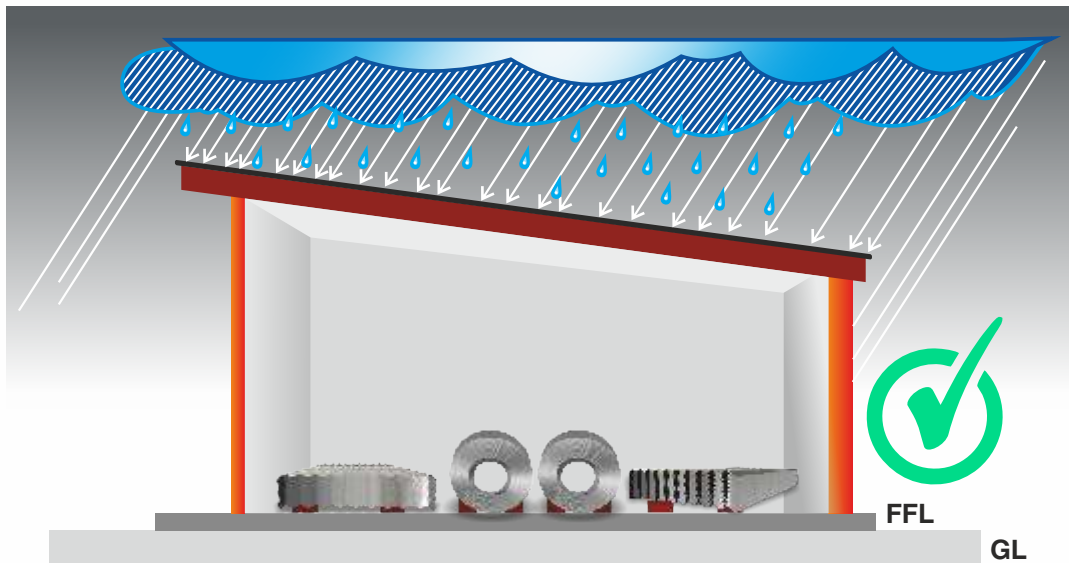
1. Keep the material in dry and well ventilated condition (indoors)
2. After receiving, ensure the coils and sheets are dry.
3. If found wet, open the pack immediately, separate & wipe the sheets/coils with a clean dry cloth and stack them to allow air to circulate and help in keeping material in prime condition.
4. Avoid contact with wet concrete.
5. Store off the ground in a sloped manner to drain water.
6. Do not leave uncovered stacks of sheets/coils lying in the open.
7. Do not allow water / moisture to get entrapped bundles/coils
8. Use only dry untreated timber for block stacking
9. For outside storage, erect simple scaffolding and cover bundles / coils with loose fitting tarpaulin or waterproof sheets while allowing air to circulate.
10. Inspect the storage site regularly to ensure that moisture has not penetrated into the stack.
11. Do not keep the coils near the protruded portions of objects to avoid damage.

WRONG METHOD OF STORAGE

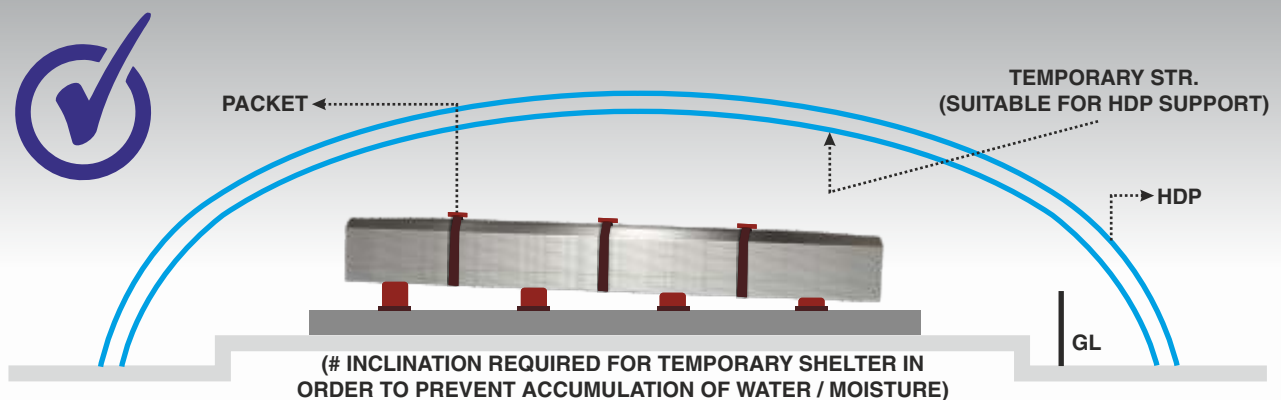


MOISTURE MAY GET ENTRAPPED





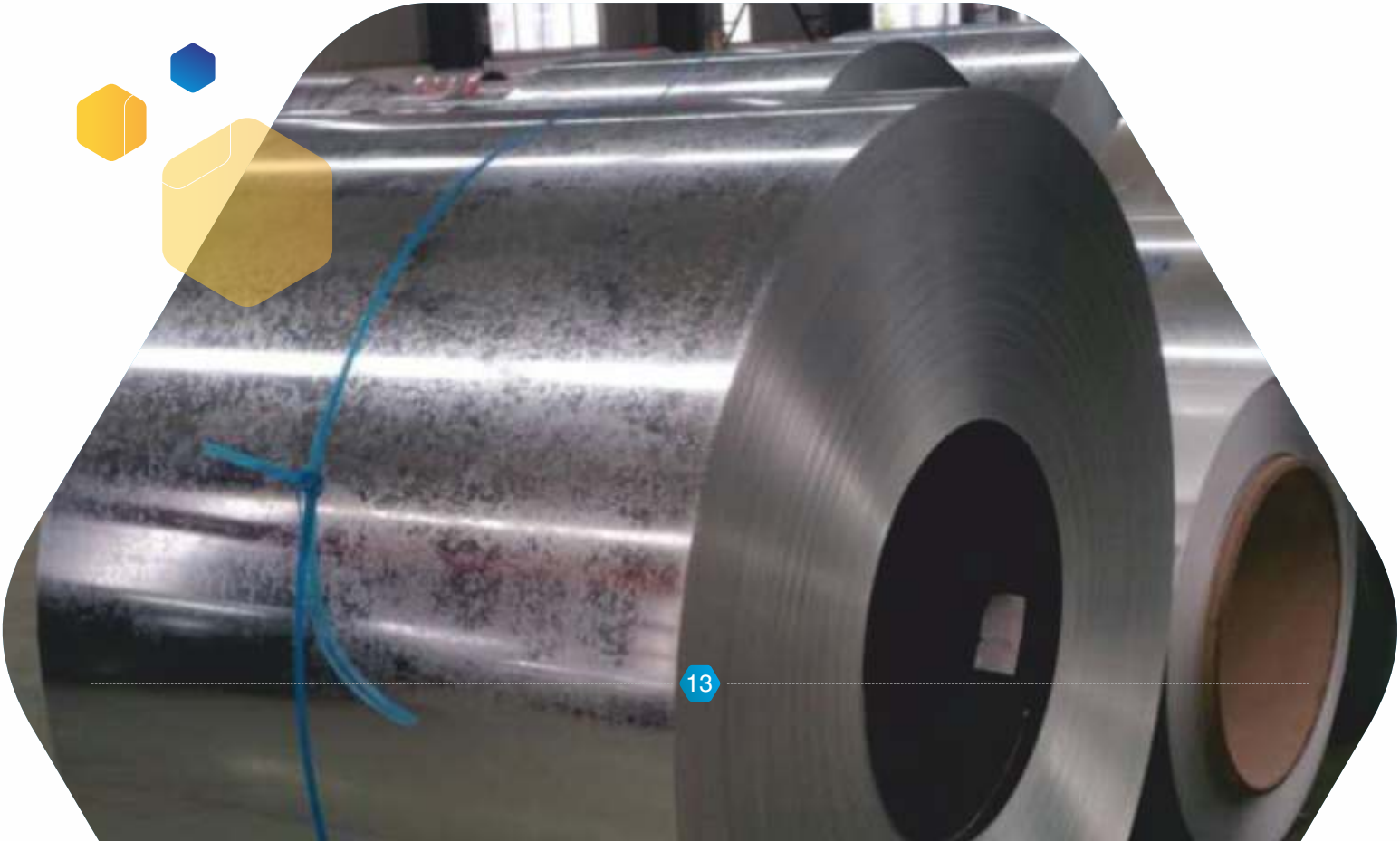
ALTERNATE CORRECT METHOD OF STORAGE



ON RAISED PLATFORM COVERED WITH HIGH DENSITY POLYETHYLENE COVER
SO THAT WATER / MOISTURE DOES NOT ENTER THE BUNDLE

PRODUCT GUARANTEE NORMS

GALVANIZED PRODUCT GUARANTEES			
Product Parameters	Grades		
	CQ	DQ	HSLA 340
Guarantee of Mechanical properties (months)	1	3	3
Guarantee of stretcher strains (months)	-	3	-
Guarantee against white rust and storage stains for chromated (in months)	3	3	3
Guarantee against oiling coverage, yellowish patches, pin rust (months)	3	3	3
Guarantee against "crazing" for 120 GSM coating	3	3	3
Guarantee against "crazing" for 275 GSM coating	3	3	3
Guarantee of surface defects on one surface	√	√	√
Yield loss at coil ends due to conversion from coil to Blanks #	1.5 % of the length of the coil		
Notes: The time starts with the date of delivery of the coil to the customer # Needs specific discussion and agreement with customers			





TRANSPORTATION NORMS

1	Packing of coils/sheets should be carried out in a dry area
2	Wet coils should be scheduled for production as soon as possible
3	Do not store in areas with fluctuating temperatures such as in open or in high humidity areas
4	If the sheets/packets are not to be used the same day then keep them wrapped in proper packaging material. This is necessary as the moisture enters the sheets through capillary reaction
5	Do not use plastic material. Non-breathing materials tend to trap the moisture
6	Store the bundles on racks at least one foot above the ground level. Do not use uncured lumber
7	Elevate one end of the bundle to allow moisture to run off rather than puddle on the top of the bundle
8	Avoid scratches/abrasion. Surfaces abraded by hard soled shoes or objects sliding over the surface give a darkened coating. This should be avoided
9	Oily hands can put impressions on the sheets. Clean gloves should be used while handling the sheets
10	If sheets are darkened, then they can be cleaned with mild detergent or Alkaline cleaners and then thoroughly rinsed and dried
11	During fastening the packets and coils on a truck, use the belts or rubber pieces in between the material and the chains to avoid edge damage
12	The coils should be dispatched in an Eye Vertical position. Else there will be fretting corrosion on the surface and that will make the sheets unsightly
13	We should assess the facility of unloading at the users' places.

TATA STEEL'S RESEARCH LABORATORY & TESTING FACILITY

Tata Steel's in-house quality control laboratory is fully equipped with the latest testing equipment. Dedicated chemists ensure conformance to specifications on every coil and documentation of all test records.



Metallurgical Microscope

A metallurgical microscope refers to a high power microscope used for the purposes of viewing opaque objects (objects through which light cannot pass) these types of microscopes are different from the typical biological microscopes in that they use the principle of reflected light microscopy.



Computerized UTM-Tensile Testing Machine

In a simple tensile test, a sample is typically pulled to its breaking point to determine the ultimate tensile strength of the material. As they pull materials apart, ADMET testing machines accurately calculate mechanical properties such as tensile strength, peak load, elongation, tensile modulus, and yield.



Roughness Tester

A roughness tester is used to quickly and accurately determine the surface texture or surface roughness of a material. A roughness tester shows the measured roughness depth (Rz) as well as the mean roughness value (Ra) in micrometers or microns (μm).



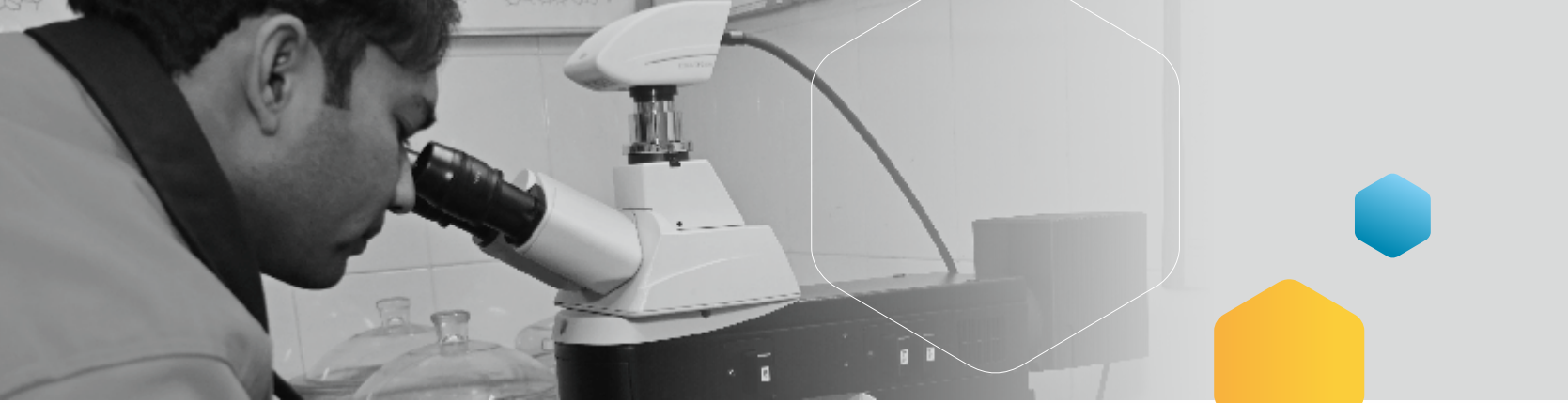
Hardness Tester

A Hardness Tester is a device that indicates the hardness of a material, usually by measuring the effect on its surface of a localized penetration by a standardized rounded or pointed indenter of diamond, carbide, or hard steel. Hardness tester. Materials testing.



Cold Bend Test

The Cold Bend Test is conducted according to IEC 60811-504 and is designed to assess the performance of electrical cables at low temperatures. The test must be carried out on samples of insulation and sheathing material no more than 16 hours after the extrusion or cross-linking process has been carried out.



Bend Test

The bend test is a simple and inexpensive qualitative test that can be used to evaluate both the ductility and soundness of a material. It is often used as a quality control test for butt-welded joints, having the advantage of simplicity of both test piece and equipment.



Impact Testing Machine

Impact testing machines evaluate an object's capacity to withstand high-rate loading and it is commonly used to determine the service life of a part or material. Impact resistance can be among the most challenging qualities to measure. There are two standard kinds of impact test: Charpy and IZOD.



Drop Weight Tester

Drop weight testers are used to determine the energy required to physically damage test specimens and pre-damaged specimens for compression after impact tests (CAI). This investigate damage that can happen to vehicles and airplanes after being struck by an object.



Surface Grinder

A surface grinder is a machine tool used to provide precision ground surfaces, either to a critical size or for the surface finish. The typical precision of a surface grinder depends on the type and usage, however ± 0.002 mm (± 0.0001 in) should be achievable with most surface grinders.



Vertical Milling Machine

In vertical mills, the spindle axis is vertically oriented. Vertical turret mills have a stationary spindle and the table is moved both perpendicular and parallel to the spindle axis to execute cutting. They often have a quill that allows the milling cutter to be raised and lowered in a manner quite like a drill press.



NETWORK OF ACE⁺⁺ SERVICE CENTRES*

DISTRIBUTOR	LOCATION	SERVICE CENTRE
NORTH ZONE		
Bhagwati Steel Processor	Chandigarh	ACE ⁺⁺
G R Gupta & Bros	Ghaziabad	ACE ⁺⁺
Mangla Sons	Mohali	ACE ⁺⁺
R S Steel	Ghaziabad	ACE ⁺⁺
TSPDL Uttarakhand	Pantnagar	ACE ⁺⁺
EAST ZONE		
Bubna Commercial Private Limited	Hooghly	ACE ⁺⁺
Sagar Steels	Guwahati	ACE ⁺⁺
WEST ZONE		
ANM Ispat Pvt Ltd	Ahmedabad	ACE ⁺⁺
Naresh Steel Industries Pvt Ltd	Mumbai	ACE ⁺⁺
Rohit & Company - Ahmedabad	Ahmedabad	ACE ⁺⁺
SKM Galva (A div. of SKM Steels Ltd)	Mumbai	ACE ⁺⁺
SKM Indore	Indore	ACE ⁺⁺
TSPDL Pune	Pune	ACE ⁺⁺
SOUTH ZONE		
GK Steel	Bengaluru	ACE ⁺⁺
Govindaraja Mudaliar Sons (P) Ltd	Chennai	ACE ⁺⁺
Kummenchery Steels	Cochin	ACE ⁺⁺
Ramsaroop & Sons	Bengaluru	ACE ⁺⁺
Shiva Ferric Private Limited	Bengaluru	ACE ⁺⁺
Shree Sai Krishna Steels	Secunderabad	ACE ⁺⁺

ACE⁺⁺ * Distributor owned Service Centre





Tata Steel coated products meet the diverse needs of its customers through strong channels of distributors and through a service centres.

With ACE⁺⁺, it has taken its service capabilities to the next level and set a benchmark in the industry. This is a service centre development programme, a first in the steel industry, to enhance capability to deliver excellence in product and service customisation across a network of service centres. Each authorised service centre is equipped with state-of-the-art facilities and processes for world-class handling, storage and processing to deliver on the highest parameters of quality and minimise wastage.

SALES OFFICES

North Zone

Delhi

Tata Steel Limited
Ground Floor, Plot 1&2, Mira Corporate Suites, Mathura Road
New Delhi, India

Ghaziabad

Tata Steel Limited
Plot No. 1227-1229, GT Road, Lalkuan, Ghaziabad 201 001
Phone: 0120-2866780

Faridabad

Tata Steel Limited
2nd Floor, Business Centre 33-B NIT, Faridabad 121001
Phone: 0129-4098321

Chandigarh

Tata Steel Limited
SCO -16, 1st Floor, Sector 26, Madhya Marg, Chandigarh 160 019
Phone: 0172-2791047/2790932

Kanpur

Tata Steel Limited
16/97, Navroz Building, The Mall, Kanpur 208 001
Phone: 0512-2316605

Ludhiana

Tata Steel Limited
C/44-47, Phase II, near Majestic Auto,
Punjab, Ludhiana 141 010, Phone: 0161-5022805

Jaipur

Tata Steel Limited
D -34, Subhash Marg, Near Agrasen, Circle, Jaipur 302 001
Phone: 0141-2225244

East Zone

Kolkata

Tata Steel Limited
43, Jawaharlal Nehru Road, Kolkata 700 071
Phone: 033-22821778/22281348

Tata Steel Limited
Jasmine Towers, 31, Shakespeare Sarani Road,
Mullick Bazar, Park Street, West Bengal, Kolkata - 700017

Bhubaneswar

Tata Steel Limited
Marketing & Sales, 2 - B, Fortune Tower, Chandrasekharpur
Odisha, Bhubaneswar 751023, Phone: 0674-6651007

Jamshedpur

Tata Steel Limited
Opposite Chummery Guest House
B Road East, Northern town, Bistupur, Jamshedpur 831001
Phone: 0657-6500511

Guwahati

Tata Steel Limited
Guwahati Sales Office
4th floor, Subham Velocity, Honuram Boro Path, Opp. Wallford
G S Road, Guwahati 781005, Phone: 0361-2130959

Patna

Tata Steel Limited
4th Floor, Orchid Mall, Opposite AN College, Boring Road
Patna 800 001, Phone: 0612-2570094.95/96

West Zone

Mumbai

Tata Steel Limited
3rd Floor, One Forbes 1, Dr V B Gandhi Marg
Fort Mumbai 400001, Phone: 022 67494600

Ahmedabad

Tata Steel Limited
2nd Floor, Premchand House Annexe, P.O. Box No. 4096,
Ashram Road, Old High Court Way Ahmedabad 380 009
Phone: 798012306

Indore

Tata Steel Limited
3rd Floor, NRK Business Park, Block B -1, PU-4,
Scheme No. 54 Vijay Nagar Square, A B Road Indore 452010, MP
Phone: 0731-6450688/691

Nagpur

Tata Steel Limited
Museum Road, Civil Lines Nagpur 440 001
Phone: 0712-2520170/2533209

Pune

Tata Steel Limited
Office Nos. 6 & 7, Second floor Wing B,
Great Eastern Plaza (Bajaj Allianz Building)
Airport Road, Pune 411001, Phone: 020 66407580

Raipur

Tata Steel Limited
Office No-539, 5th Floor Magneto Office, Raipur 492001

Khopoli

Tata Steel Limited
At- I Po-Khalapur, Via- Savroli, Dist- Raigad 410203
Maharashtra, India

South Zone

Chennai

Tata Steel Limited
(Formerly known as BHUSHAN STEEL LIMITED)
No.190, Unit-1, 3rd Floor, Mount Chambers, Anna Salai
Chennai - 600 002, Tamil Nadu, India

Bengaluru

Tata Steel Limited
A Wing, 2nd Floor, Jubilee Building, 45, Museum Road,
Bengaluru 560 025, Phone: 080-66950001

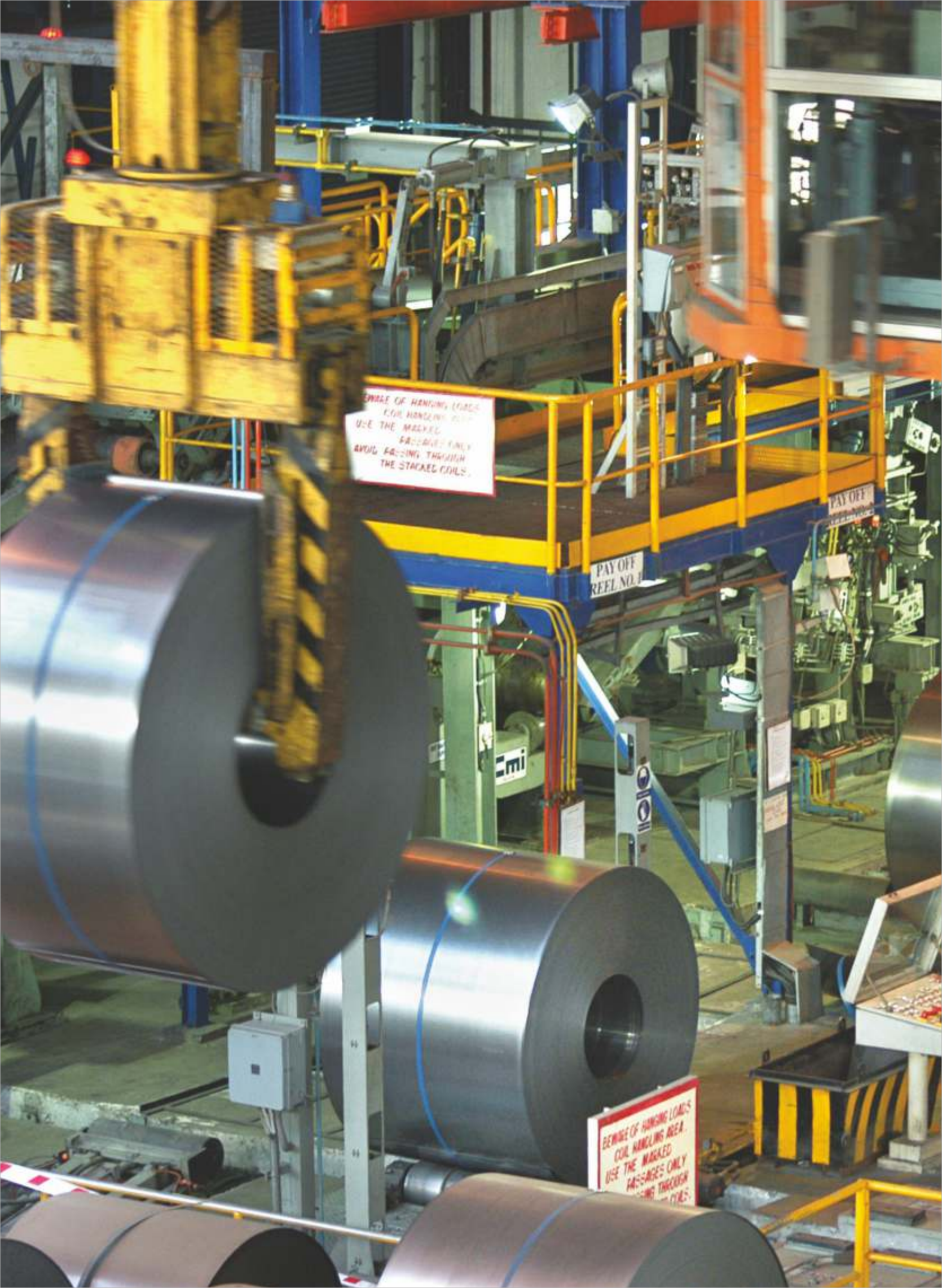
Hyderabad

Tata Steel Limited
6th Floor, Gummidelli Towers 1-10-39 to 44,
Begumpet Airport Road, Hyderabad, Telangana 500016
Phone: 040-67040300

Coimbatore

Tata Steel Limited
No:6, New Damunagar, Pulaikulam, Coimbatore-641036

Customer helpline **1800 108 8282** (toll free)



BEWIDE OF HANGING LOADS
FOR HANDLING COILS
USE THE MARKED
PASSAGES ONLY
AVOID PASSING THROUGH
THE STACKED COILS.

PAY OFF
REFEL NO. 1

PAY OFF

BEWIDE OF HANGING LOADS
FOR HANDLING AREA
USE THE MARKED
PASSAGES ONLY
AVOID PASSING THROUGH
THE COILS.



Tata Steel Limited, Tata Centre, 43, Jawaharlal Nehru Road,
Kolkata 700 071

Customer helpline **1800 108 8282** (toll free)