



Essar Steel Limited



A Tradition of Excellence

Essar Steel is part of the Essar Group, a key player in several core sector industries such as Steel, Power, Shipping, Telecommunications, BPO, Oil and Gas and Constructions. With an asset base of over Rs. 200 billion (US\$ 4.4 billion) in businesses that are at the heart of the Indian economy, Essar is an important contributor to the country's infrastructure.

Essar Steel - A Versatile Steel Producer



Essar Steel, the group's flagship company, has emerged a fully-integrated steel major. With its robust chain of production and downstream processes, Essar Steel has raised itself above the rest – making 24 Carat Steel the benchmark of quality steel for its customers.

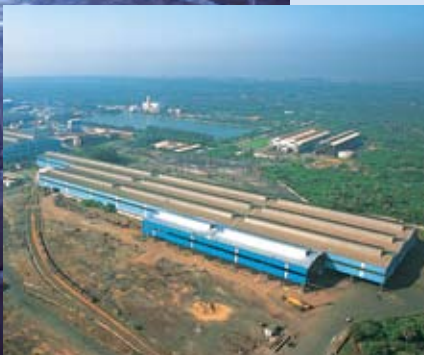
Essar Steel's cutting-edge Midi Mill technology enables unmatched versatility and greater flexibility in its processes, thus ensuring excellent product quality and a higher level of product customisation. A blend of sophisticated automation levels and an inspired workforce has helped it emerge as one of the most productive and cost-efficient mills the world over. All this while, being one of the most environment-friendly manufacturing facilities in the steel world.

An Integrated Steel Giant

Essar Steel's dominion begins at its iron ore beneficiation plant in Bailadila, Chhattisgarh. Refining iron ore to its purest form for use at its steel mill, the iron ore slurry is transported along a 267km-long slurry pipeline – the 2nd longest in the world – through very difficult terrain, to the pellet-making

facility in Visakhapatnam. Here, Essar Steel's 4 MTPA pelletisation plant (en-route to being augmented to 8 MTPA) produces iron ore pellets for use at the steel complex. The pelletisation plant, situated at a natural all-weather port, facilitates low-cost transportation of the raw material to Essar Steel's complex at Hazira.

This port-based complex houses the world's largest Hot Briquetted Iron (HBI) plant of 3.4 million tonnes per annum (MTPA) capacity that feeds a state-of-the-art steel mill which has a capacity of 3 MTPA.



Integrating processes further downstream, the plant is equipped with some of the finest technologies. The complex houses a 1.3 MTPA HRPO (Hot Rolled Pickled and Oiled) facility, 0.9 MTPA Cold Rolling and 0.5 MTPA Galvanising lines for catering to value-based customers. The state-of-the-art service centre includes India's only Hot Skin Pass mill of 1.2 MTPA capacity along with Shearing and Slitting lines capable of handling capacities of 0.6 MTPA and 0.4 MTPA respectively. Moreover, PT Essar Indonesia - Essar's 0.4 MTPA cold rolling and 0.15 MTPA galvanising facility in Jakarta - adds international muscle to Essar Steel.

All the processes, from raw material acquisition to its downstream processes, come together in a perfectly synchronised, yet flexible integration that makes Essar Steel a low-cost and customer-focussed steel producer. With products ranging from hot rolled coils, plates and sheets to normalised, galvanised and shot blasted steel, Essar Steel truly sets the gold standard in steel.

Strategic Location

From its location on the West Coast, about 260-kms north of Mumbai, Essar Steel has a major advantage with respect to the inward movement of raw materials and the outbound movement of finished goods. The captive port – capable of handling 6 MTPA of cargo annually – is loaded with facilities like sea-going floating cranes, articulated barges and other marine equipment.



The Technological Advantage

Essar Steel employs the world's most advanced technology from the best equipment suppliers. Its many firsts include an indigenous Hot DRI charging system, the largest DC electric-powered steel plant and India's first Continuous Tandem Cold Mill (CTCM). Level II automation aided by one of the largest ERP installations in India by SAP and an Integrated Marketing and Production System (IMPS) from UEC of USA make Essar Steel completely future-ready.



Answering the World's Need for Steel

With technology that surpasses global benchmarks, Essar Steel produces grades that many Indian steel mills can only aspire to. The market



leader in many niche segments in the domestic market, Essar Steel is one of the leading suppliers for pipelines, automobile manufacturers, construction and other sophisticated industries, as it provides a competitively priced, yet superior quality, alternative to high-grade imports.

In the international market, Essar Steel is positioned alongside prime European and Japanese steel producers. Little surprise then, that Essar Steel is the largest exporter of flat products from India. Moreover, Essar Steel is a leading supplier of API grade steel in the world for pipelines in the oil & gas sector, having helped create pipelines that stretch 8500kms across 5 continents.

Quality that the World Approves

What makes Essar Steel the world's preferred steel maker is the wide product range that is completely customisable to unique customer needs along with flexible delivery options.

Essar Steel's strong standing in domestic and international markets is also due to its lofty quality standards. Ever the leader, Essar Steel was the first integrated steel plant in the country to obtain the prestigious ISO 9001 for all operations. In addition, it was the first Indian steel plant to achieve the ISO 14001 accreditation for Environmental Management System.

Obviously, quality-driven processes would only create products that surpass international quality standards as well. Certifications for its products include Lloyds Register (UK) for exports, IRS (Indian Registrar of Shipping), DNV, ABS, TUV, BIS (Bureau of Indian Standards), OITC and IBR (Indian Boiler Regulation Act).

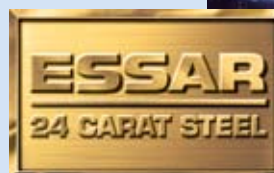


The 24 Carat Edge

To develop a unique identity and differentiate its products, Essar Steel launched 24-Carat Steel, the first branded steel of its kind in India. 24 Carat Steel defines the core properties of Essar Steel as well as the total offering from the company in terms of product quality, standards, delivery systems and customer service. 24 Carat Steel today finds application in diverse specialised and demanding industries – from general engineering to automotive and shipbuilding.



Superior production processes, world-class technology and a committed workforce has helped Essar Steel develop value-added steel and placed the company in the league of a select few world-class steel manufacturers - thus casting the 24 Carat promise in concrete.



Some prominent grades that Essar specialises in:

Hot Rolled Products	Indian Standards	International Standards
Cold Rolling	IS 11513	JIS G3131 ASTM A569 BS 1449
Deep Drawing	IS 1079	JIS G 3132 ASTM A621
Corrosion Resistance	IRSM 41	JIS G 3125 ASTM A588 EN 10155 S
Boiler Quality	IS 2002	JIS G 3103 ASTM 515 / 516 ASTM A537
General Engg fabrication	IS 5986 IS 8500 IS 2062	JIS 3101 EN 10025 ASTM A36, 53, 283
Pipes & tubes	IS 10748 IS 10748	API Specification SAE 1008
Automobile		JIS G 3113 SAPH 310-340 QSTE 340-380 EN 10149

Product Form - Coils, Plates, Sheets * **Thickness** - 1.60-20 mm
* **Width** - 180-2000 mm * **Length** - 2000-12000 mm

Cold Rolled Products		
Commercial Quality	IS 513 Gr O	ASTM A-366 JIS SPCC
Drawing	IS 513 Gr D	BS CR - 4 ASTM A - 619 JIS SPCD
Deep Drawing	IS 513 GR DD	BS CR - 3 ASTM A - 620 JIS SPCD
Extra Deep Drawing	IS 513 GR EDD	CR - 2 / CR - 1 ASTM - 620 JIS SPCE
Super EDD	IF	IF

Product Form - Coils, Sheets * **Thickness** - 0.14-3.2 mm
* **Width** - 200-1625 mm * **Length** - 600-4800 mm

Galvanised Products		
Commercial Quality	IS 277 Gr CQ / O	BS 2989 Z1
Drawing	IS 277 Gr D	ASTM CS - A, B, C JIS 3302 SGCC
Deep Drawing	IS 277 Gr DD	ASTM FS - A, B JIS 3302 SGCD 1
Extra Deep Drawing	IS 277 Gr EDD	ASTM DDS JIS 3302 SGCD 2
Extra Deep Drawing (AI Killed)	IS 277 Gr EDD	ASTM EDDS JIS 3302 SGCD 3

Product Form - Coils, Sheets * **Thickness** - 0.15-3.2 mm
* **Width** - 600-1370 mm * **Length** - up to 4800 mm

Harnessing world-class technology

4 - 150 tonne DC Electric Arc Furnaces	- Clecim, France
4 - 150 tonne Ladle Furnaces	- Davy, United Kingdom
1 - 150 tonne Vacuum Degasser	- Standard Messo, Germany
3 - Single Strand Slab Casting Machines	- Mannesmann DemagAG, Germany
Hot Strip Mill Mechanicals	- SMS Schloemann Siemag Engineering, USA
Hot Strip Mill Electricals and Automation	- General Electric, USA
2 Reheating Furnace	- Stein Heurty, France
Hot Skinpass Mill	- Clecim, France
3 Shearing Lines	- Bronx, UK ; SMS, USA
2 Slitting Lines	- Bronx, UK
6 Hi Reversible Cold rolling mill	- Hitachi, Japan
4 Hi Continuous Tandem Mill	- VAI Clecim, France
Auto Cut to length line	- FIMI, ITALY
DMS Slitting cum recoiling line	- DMS
LIR Inspection cum trimming line	- LIR
Batch Annealing furnace	- LOI, Germany
Skin pass mill for CR unit	- VAI Clecim, France
Skin pass mill for galvanizing line	- BWG, Germany
Furnace for galvanising line	- Selas, France
Tension leveler for galvanising line	- Herrvoss, USA

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