## Visit to Jindal Stainless, Hisar (05 August 2017) – A Brief Review

The Indian Institute of Metals – Delhi Chapter regularly organizes visits to eminent industries in and around NCR, for benefit of its members. In this series, a team of IIM DC members visited Jindal Stainless Ltd., Hisar on 05Aug.2017, on invitation of IIM Hisar Chapter. The visiting members went around state of art facilities of JSL Stainless and had extensive deliberations with the office bearers of IIM Hisar Chapter.

Founded by Shri O P Jindal in 1970, Jindal Stainless Ltd. is one of the largest stainless steel conglomerates in India and ranks amongst top 10 makers stainless steel in world. producing stainless flat steels products Austenitic, Ferritic, Martensitic and Duplex grades. The product range

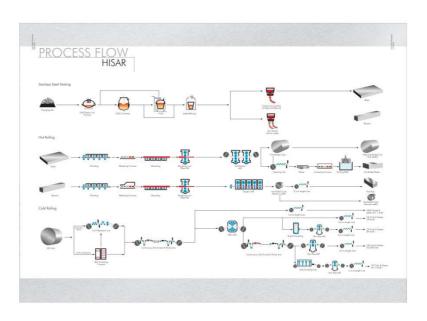


comprises different grades of stainless steels including Slabs & Blooms, Hot Rolled Coils, Plates, Cold Rolled Coils and Special products like Razor Blade Steel, Precision Strip and Coin blanks. Its market share in India is ~ 45%. With the commissioning of its forthcoming integrated Orissa project at Jajpur, JSL Stainless will achieve a capacity of 2.5 MTPA (from present installed capacity of 1.8 MTPA), further consolidating its position as the largest producer in the country with wide product mix covering austenitic, Ferritic, Martensitic, dual phase and super-dual phase quality steels catering to critical requirements of defence, nuclear energy, automobile sector in domestic markets and exports.

At the outset a presentation of facilities available in Hisar Unit and its various functions was made jointly by Dr. Arijit S. Podder, Head-HRD & Mr. Manoj Gupta, DGM, Quality Assurance. Thereafter IIM DC members were taken around all the facilities of the Plant

## **MANUFACTURING UNIT**

The plant at Hisar has state-of-the-art facilities for manufacture of high quality Stainless Steel. Steel is melted in ultrahigh powered Electric Arc Furnaces with co-jet facility. For refining, it utilizes top and bottom blown Argon-Oxygen Decarburization (AOD) Converter. In addition, it



is also endowed with Vacuum-Oxygen Decarburizing (VOD) unit for achieving very low contents of Carbon, Hydrogen and Nitrogen. De-oxidation is carried

out by high speed multiple wire-injection units and refined steel is continuously cast in slab and bloom caster.

Cast slabs are Grit-Blasted/Ground using constant power grinding machine. Hot rolling of slabs is carried out in a unique Steckel mill provided with Walking Beam Reheating furnace, Roughing Stand and Twin Steckel Stands. Blooms are hot rolled in a 5-stand Semicontinuous Hot Strip Mill.

Hot Rolled coils are annealed & pickled in continuous Annealing-Pickling lines having scale breaker, shot blasting unit, Electrolytic Sulphuric Acid and Mixed Acid bath.



Annealed and Pickled coils are cold rolled in Sendzimer cold rolling mills provided with shape meter for high degree of flatness.

Annealing & Pickling of cold rolled coils is carried out utilizing Neutral Electrolytic Salt Bath followed by Electrolytic Nitric Acid and Mixed Acid Baths.

There is provision of online/offline Skin Pass Mills and Tension Leveller to produce world class lustrous products. Other facilities include Bright Annealing units in cracked ammonia atmosphere and Strip Grinding line to produce desired surface finishes.

Batteries of Bell Annealing furnaces for annealing ferritics & martensitic grades and Slitting & Shearing lines are provided for finishing the products.

A dedicated facility for manufacture of very thin gauge, narrow precision strips with very high flatness, close tolerances and excellent surface finish exists in Hisar unit with large no of rolling mills, bright annealing lines, tension leveller & precision slitters enabling Hisar unit to



produce cold rolled products in the wide range of 0.05 to 4 mm thickness.

Hisar Unit of Jindal steel has unique facilities for for making blanks for Stainless steel & bi-metal coins (10,000 tpy) for India & France and Stainless Steel razor blades steel (12,000 tpy)

## R&D

The R & D division plays a pivotal role in retaining and consolidating company's leadership position in the Stainless Steel industry. This is achieved through continuous up-gradation of quality, processes, services and through product innovation to develop new products at competitive costs. Crossfertilization of knowledge between production, quality control and

commercial units in order to maintain global standards has been the guiding principle of the R&D function at Jindal Stainless. Some of the focus areas are:

- Development of high value products to serve niche markets
- Quality up-gradation of existing products to enable enhanced global acceptance
- Cost reduction by process development, optimization and refinement
  - to provide a consistent competitive edge
- Technology enhancement to increase quality production
- Foster growth and develop new market segments through knowledge sharing with customers and to assist them in their operations and



applications of Company products

In addition to the above, the R&D division closely interacts with reputed national and international laboratories/scientific institutions/Universities to

avail expert services & knowledge for critical investigations.

Understanding customer requirements supplying products as per their requirements is ensured with the help of Quality Assurance and Quality Control groups. Across the entire business chain of supplies, operations and marketing, appropriate auality assurance systems are in place to



ensure correctness at each step of the cycle. ISO 9001-2000 Certification of the plant is a testimony to this. ISO 14001 and OHSAS 18001 Systems Certification of the plant assure environment protection and for providing a safe workplace for employees. Other Unit Certifications are AD 2000-Merkblatt W0 for Pressure Equipment Certification (EU); ISO/IEC 17025:2005 for Chemical Lab accreditation in accordance with ISO/IEC by NABL; PED/97/23/EC for Pressure Equipment Directive (EU); MD00/3110/0004/1 for Approved Manufacturer in accordance with Lloyds's Register for SS Plates: CPR/89/106/EEC for (CE Marking) Manufacturing in accordance with Directive 93/68/EEC of the Council the European Communities for the Products to be used in construction industries etc.

For ensuring quality at every step, the production processes are constantly monitored and controlled to ensure that the finished products are as per customer's requirements. The plant has well equipped laboratories with a battery of modern equipment viz. Optical Emission Spectrometres, X-Ray Fluorescence Analyser, Carbon Sulphur Analyser, Hydrogen Analyser, Nitrogen and Oxygen Analyser, Corrosion & Stress Corrosion Testing facilities, Universal Testing Machine, Ultrasonic Testing Unit, Impact Testing machine, various types of Hardness testers, Surface Roughness tester, Optical & Scanning electron microscope, Dilatometer, Ferritoscope, Reflectometer, Profile projector and E-cupping testing machine, etc. Well documented procedures ensure correctness in testing and certification of the products.

## Interaction with Office bearers of IIM Hisar Chapter

Detailed discussions were held with the office bearers of IIM Hisar Chapter. Mr. Sandeep Maheshwar i, Chairman IIM Hisar Chapter welcomed



regular interactions with IIM Delhi Chapter

The issue of regular participation of Hisar Chapter members in the activities of IIM Delhi Chapter was discussed in detail.

JSL Hisar was invited to participate in the exhibition of forthcoming MMMM-2018 Event during Aug. 2018 in Pragati Maidan, New Delhi. Adequate interest was shown by officials of JSL and the same would be followed up jointly by ITEl and IIM Delhi Chapter.

The visit to JSL Stainless Ltd. Hisar ended with thanks to JSL Stainless Ltd. and IIM Hisar Chapter for facilitating this visit.