

STAINLESS INDIA



A MAGAZINE PUBLISHED BY

**Indian Stainless Steel
Development Association**

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A Magazine Devoted to Stainless Steel Applications

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Public Sanitation Facilities in Stainless Steel : The Need of the Hour



A comprehensive, affordable, sustainable and hygienic solution aimed to cater to the basic and diverse sanitation needs of the common man is the need of the hour. A country of the size of India with huge population and rapidly expanding cities has been lacking in the public sanitation facilities at all fronts. Though the efforts have been made in past to build and improve upon yet the problems on account of difficulty in maintenance, periodic breakdowns and maintaining a standard of hygiene, when using conventional kind of sanitation facilities, has remained a challenge for successive governments.

Under this context, Eram Scientific Solutions (ESS), a home grown social enterprise based in Kerala, has introduced toilets which effectively addresses the challenges faced at sanitation front. Having identified the dimension of issues prevalent in sanitation, ESS has ensured the

soundness and reliability of the innovation by integrating new technologies and better materials at affordable cost for catalyzing better hygiene and sanitation practices.

eToilets are built of Stainless Steel enclosures and have electronic systems for enhancing user experience and for tracking the health status of these toilets. eToilets have automated access control systems, sensor enabled water minimization, self-washing and floor wash mechanisms.

The custom-sized Stainless Steel enclosures are extremely durable, corrosion-resistant and are unswerving in the long run.

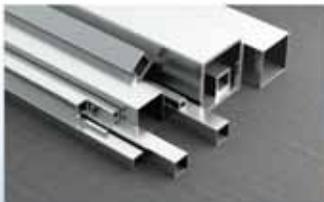
Built with 304 stainless steel enclosure, the eToilet SS Panel offers added rigidity and robustness and is reliable under all weather conditions. The SS closet is provided with P-trap facility to ensure better hygiene and cleanliness in

stainless is our passion

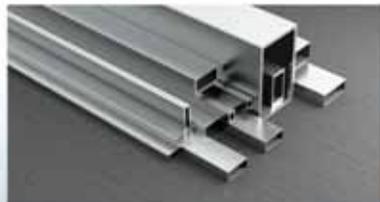


A Group with International Reputation for its Quality Manufacturing. Manufacturing of Stainless Steel Hollow Sections in Compliance with International Standards.

- Annual production capacity of 6000 MT.
- Raajratna Group has annual turnover of USD 200 million.
- We deal in Austenitic, Ferritic, Duplex and Lean Duplex materials and also manufacture Welded SS Hollow Sections/Tubes for special grades on demand.



Welded Square Hollow Sections/Tubes
Size : 12 x 12 mm to 150 x 150 mm
Thickness : 1.0 mm to 6.5 mm



Welded Rectangular Hollow Sections/Tubes
Size : 20 x 10 mm to 200 x 100 mm
Thickness : 1.0 mm to 6.5 mm



Welded Round Tubes
Size : OD 12.70 mm to OD 76.20 mm
Thickness : 1.0 mm to 5.0 mm



Slotted Tubes (Single / Double Slots)
Size : OD 42.40 mm to OD 76.20 mm
Slot Size : 15 x 15 mm to 27 x 30 mm
Thickness : 1.2 mm to 2.0 mm



ACHIEVEMENTS

- Export to international markets like Germany, the Netherlands, Finland, Turkey, Russia, the USA, Australia, South East Asia and others.
- **ISO: 9001-2008, ISO: 14001:2004** and **OHSAS:18001-2007** certification for best manufacturing and operational practices.

TECHNOLOGY

- **TIG-PLASMA –TIG** welding technology for precision.
- State-of-the-art manufacturing facilities with advanced technology tube mills, online polishing machines and belt polishing machines.
- The Company has installed the '**Direct Cage Forming Mill**' which is first-of-its-kind capacity in Asia, to manufacture Stainless Steel Hollow Sections / Tubes

AREA OF APPLICATION

- Construction and Architectural Design, Food and Pharmaceutical Industries, Offshore and Marine Industries, Metro Train, Railways and Bus Body Building, Process Machinaries, Nuclear Plants etc.

Raajratna Ventures Ltd.

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Website : www.raajtubes.com

the squatting pan. The P-trap also helps to prevent foul smell inside the toilets and thus ensures cleanliness round the clock. Unlike the ceramic or plastic closets, the SS closet structure is strong enough to withstand heavy weight and major damages. One eToilet SS Model weighs approximately 310 Kgs.

Benefits of Stainless Steel Structure

1. Robust structure
2. Ease of assembly at field
3. Aesthetics and high ambience
4. Highly modular
5. Withstand extreme weather in Indian context
6. Ensures serviceability and ease of cleaning
7. Environment-friendly
8. Sustainable in coastal areas

Besides offering a menu of most modern technology options the eToilet has a facility of pre-flushing before entering, automatic flushing once usage is done, in-built water tanks, sensors for water and electricity conservation, automatic platform, cleaning and power back-up with coin operated entry. Keeping in mind individual needs these toilets are programmed to flush 1.5 litres of water after three minutes of usage or 4.5 litres if usage is longer. The performance status of the units can also be monitored



An Installation at Public Place in Delhi

via web using GPRS connectivity of the units. This innovation involves unmanned operations and thus ensures easy and continual operation of the toilets while minimizing unnecessary maintenance costs.

Having geared up to respond to a demand-led approach in sanitation to meet the basic sanitary needs of the common man, a range of interventions in the form of various product variants such as eToilet General Public Model, Civic/School Model and She Toilet has been introduced for the benefit of the communities, at large.



Easy to Clean Inside

School Model eToilets :

Considering the sanitation grounds in India, it is quite obvious that the existing sanitation amenities prevailing in schools have largely failed to deliver and promote a sustainable sanitation model especially in capacities of sustenance, health and hygiene for the students.

Rethinking traditional CSR guidelines, ONGC has set an example through the implementation of it in a local school in Malappuram District in Kerala. ONGC has set up 3 eToilets in Government Higher Secondary School Karuvarakundu, the only government run school in this village in Malappuram. Home to 4096 students and 110 staffs, the school has come under the limelight with this social intervention undertaken by ONGC.

Now since the newly elected government in India has taken a pledge to build and improve on public sanitation facilities as a tribute to Great Mahatma Gandhi whose 150th birth anniversary will be celebrated in 2019 under Mahatma Gandhi Clean India Programme. It is most likely that efforts will be made to install more and more of extremely durable and maintenance free sanitation facilities around the country.

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Huge Boost for Stainless Steel Milk Tankers in Indian Railways

Stainless Steel milk tanks have been used for past several decades to transport milk since it offers strength, corrosion resistance, longevity and ease of cleaning and remains hygienic. In countries where the production of milk is very intensive and the volumes are very high, railways are used to transport it from the areas having surplus in production to the areas deficit in milk production and far from the production site.

In the month of July 2014, the newly elected government of India presented its first railway budget and Union Railways Minister made a very important announcement that Indian Railways will run full-fledged trains in collaboration with Amul and the National Dairy Development Board to carry milk and milk products through rail route, which is speedier, cheaper and pilferage proof, from one part of the country to another.

Railways is the best mode of transporting milk because it is faster and there are no chances of pilferage on route and it also helps the farmers to earn a better price and the consumers also gets good quality milk.

In early 70's & 80's, NDDB had a fleet of stainless steel rail milk tankers including some gifted by



New Zealand Dairy Board. Now with the new government stating a clear vision it is hoped that soon Indian railways will start running full fledged stainless steel milk trains across the country. This is a good news for stainless steel industry since it has a good potential to increase the usage of stainless steel in this sector.



Stainless Steel for Human Safety in Mines

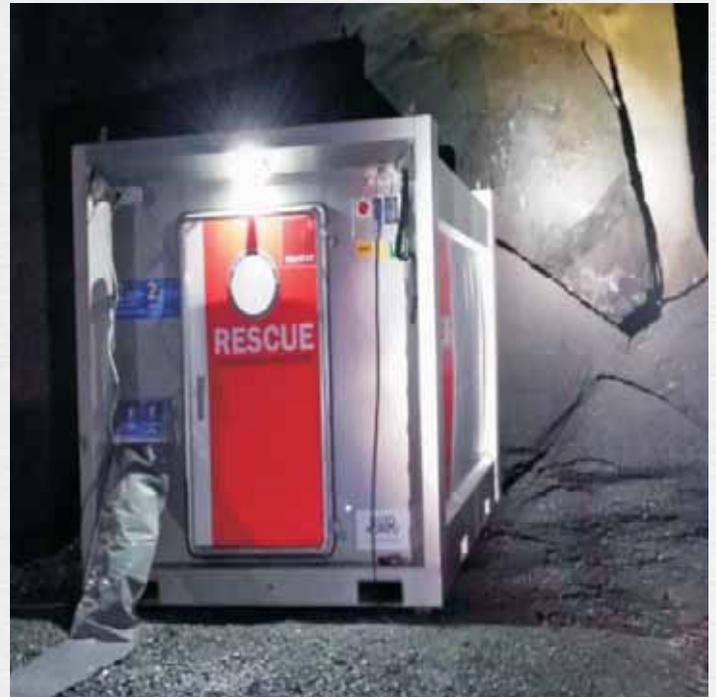
Fire or explosion in the mine area can create many severe life threatening circumstances and rescuing employees from underground mine can be very difficult. The mine is demanding environment for any material, but stainless steel has many advantages, which no other material can beat. This was also the reasons, why HEAT-IT Oy from Rovaniemi, Finland selected a new high chromium ferritic stainless steel 4622, developed by Outokumpu as the building material for their RESPETRA rescue chamber.

The RESPETRA rescue chamber is a stainless steel cabin used in underground mines and construction sites. It provides shield and protection for miners for example in case of fire for as long as four days. HEAT-IT makes two different size chambers. The smaller cabin is for eight persons and the larger one is available for 14 persons. The rescue chamber operates independently and it contains full equipment for persons, such as seats, tables, beds, toilet and washing facilities.

Natural choice for the rescue chamber

Outokumpu 4622 is high-chromium ferritic stainless steel developed recently in Outokumpu Tornio Research Centre and it contains 21% chromium. This is improved grade from high-chromium ferritics currently available in the market and it was designed based on customer needs.

Stainless steel 4622 is a natural choice for a rescue chamber, because it is a perfect fit for the demanding environment in the mine. Stainless steel is practically maintenance free, which leads to low life cycle cost. Besides good weldability, corrosion and heat resistance 4622 has lower and stable cost than few austenitic stainless steels.



Low life cycle cost

Stainless steel surface doesn't require any coating. As the wall of the chamber are not painted, the air in the surface chamber stays fresh. This grade of Stainless Steel is very suitable for the rescue chamber due to its good combination of strength and toughness and can thus handle pressure relief well. The walls of the rescue chamber are curved to provide protection against pressure and gases.

Development based on customer needs

The Outokumpu 4622 is Outokumpu's first high chromium grade. The grade offers tangible benefits to customers for example in corrosion resistance, strength and formability. It is competitive alternative in terms of alloying.

This grade can be used in a broad range of applications from home appliances, to exhaust systems, process equipment and cladding panels. It is a standard ferritic stainless steel by its technical properties. The new ferritic stainless steel grade fulfills already ASTM UNS S44330 requirements, and work is in progress for EN standardization.

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FABRINOX Adding Color to your Imagination



Copper PVD Stainless Steel Handrail at Hard Rock Café , Gurgaon. Architect: Bobby Mukherjee & Associates.

Good News for Architects and Designers!

Prestigious projects demanding special finishes of stainless steel for better appearance and higher resistance to corrosion and abrasion have led to stainless steel producers adopt new techniques of polishing, acid etching and coating.

Stainless steel (Grade 304) sheets, serving as the base, are polished to No. 8 mirror finish, acid etched to any design and coated. This coating of 1-2 micron thickness does not fade, flake nor chips off on the bend edge. Titanium-coated Gold color stainless steel sheets are a perfect substitute to real gold, brass or bronze as it is much stronger and reflective as glass mirror and cost effective. These products are very versatile indoors or outdoors allowing a great degree of creativity to imaginative thinkers:

- Furniture
- House Hold Interiors
- Architectural fields
- Front Elevation of Apartments
- Doors and Windows
- Escalators, Elevator Doors & Capsule Lifts Doors
- Ceiling

- Pillars Claddings
- Partitions
- Racks
- Main gates & Entrance
- Signages & Sculptures
- Canopies & Many More

International quality PVD (Physical Vapour Deposition) coated sheet and tube is now indigenously manufactured and available at reasonable prices.

Architects and fabricators who had difficulty sourcing the exact shade of colour, specific stainless steel grade, requisite sheet thickness, surface finish, quantity and shorter delivery period can now rejoice.

The bonus is that the cost of these products would be far lower than the rates quoted by importers who are constrained to sell things at a far higher price than it is due. While the cost is attractive, you are also assured of the highest international quality of PVD coating.

The problem with specifying PVD colour coated stainless steel sheets has been the problem of sourcing specifically

what is required for the project, in adequate quantities and at a reasonable price. Architects and designers have so far been forced to use what is available with the trade and have had to compromise on many important design and specification issues. **FABRINOX** based in Delhi have installed a high quality imported PVD coating machine to cater to the Indian Market. Fabrinnox ARC Pvt. Ltd can supply made-to order PVD coated stainless steel sheets and railings of your liking and specification.

Recently **FABRINOX** has launched a new and innovative, high-quality designer **PVD COLOURED STAINLESS STEEL RAILING and BALUSTRADES**. Their products function as supports and handrails along steps and stairways, and as safety barriers around balconies and between floor levels. You can use their railing systems and balustrades in homes, shops and malls, offices, public buildings, museums, stadiums, airports and swimming pools with perfect finishes and fitting accuracy which avoids fabrication at site with all machined modular components.



Copper PVD Satin Finish Stainless steel Wall Paneling and Staircase Railing at Hard Rock Café , Gurgaon. Architect: Bobby Mukherjee & Associate



Black PVD Mirror finish stainless steel wall cladding at Hotel THE LALIT, Chandigarh, Architect: Bobby Mukherjee & Associates.



Copper PVD Mirror finish Stainless steel as Pillar Cladding at Crown Plaza, Greater Noida. Architect/Design : 3C Company.

For Details and query kindly contact:

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Stainless Steel : Ideal Solution for Leak Proof, Maintenance Free Plumbing

Today stainless steels are used more and more in potable water systems. Although, in India, stainless steel pipe works and fittings has been available for many years and used in sectors such as in chemical, pollution control, pharmaceutical and food processing industry but now it has started gaining acceptance for potable water supplies particularly in institutional and commercial buildings.



Stainless Steel is known for its good corrosion resistance, strength and longevity. Leaking roofs, bad quality of water because of extreme corrosion & bacteria growth, loss of pressure, high maintenance cost and difficulty in repair

work is forcing users to look for an alternative and stainless steel is winning hearts day by day. Stainless steel plumbing not only offers trouble free operation but it also does not dilute quality of water, flow of water and offer immense life-cycle costing advantages.

Over the last two decades, the merits of using stainless steels in potable water systems have been clarified and enhanced. A full range of joining methods and types of fitting are available at competitive cost. Stainless steel tubing can now readily be manipulated and welded.

Stainless Steel is sometimes seen as expensive and crafty to work with but the new 'Press Fit Technology' has made stainless steel to be cost effective and easy to install alternative to most systems. This technology saves labor cost and project time with estimated 75% reduced installation time.

Slowly and steadily stainless steel is establishing a successful track record in areas of plumbing in the country and its usage is likely to increase in near future.



Central University of Jammu

In a recent project done at Central University of Jammu, District Samba, stainless steel has been preferred for plumbing at high altitude cold region area.

Also, very recently Canadian Embassy in New Delhi has gone for a fully state-of-art stainless steel plumbing.



Brahma Kumaris in Mount Abu

At the spiritual headquarters of Brahma Kumaris in Mount Abu, one of the place reputed for its ancient heritage and regarded as a sacred destination by many in search of spiritual rejuvenation and empowerment, almost three thousand meters of stainless steel plumbing has been installed. They choose 304 grade stainless steel for its longevity and its ability to maintain purity.

For details on project mentioned, contact:

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www.jindalsteelway.com

Stainless Steel Sculpture : Inspiring Minds



Mr. S. D. Sharma an Eminent Architect based in New Delhi has designed and installed Monumental Sculpture in the National Institute of Plant Genome Research (NIPGR), New Delhi. This sculpture has been made in Type 304 Stainless Steel known for its longevity and aesthetics. 'Stainless India' is very happy that Mr. S. D. Sharma has very appropriately chosen stainless steel as the medium for such a beautiful monument which could inspire generation, to come to this beautiful institute.

Contact :

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SD Sharma & Associates
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We are pleased to introduce M/s Alope Alloys, an ISO 9001-2000 company which is solely dedicated to the manufacture of **Stainless Steel, High Nickel and High Cobalt Based Alloy Castings**. Their state of the art factory is located at MIDC Dombivili, Thane District near Mumbai with an installed manufacturing capacity to produce 1000 Tons per year of finished castings of Single Piece of 1 kg to 1550 kg.

The company specializes in the manufacture of castings in **stainless steel alloys, super alloys, duplex & super-duplex alloys** such as M-35, CY-40, CW12MW, High Cobalt Chrome Alloys, CN7M, CD4MCu, CE8MN, CE3MN and 17.4 PH amongst many others by the **No-Bake Sand and Centrifugal Casting Process**. It also produces **High Alloy Steel Castings** such as Ni-Resist, 40% Ni Alloy etc. tailor-made to desired compositions.

galvanization chemicals and fertilizers, paper, pharmaceuticals, water treatment & sanitation, ship building, etc.

By integrating people, materials, processes and equipments into a powerful and well managed production house, **company promises to deliver castings tailor-made to customer specifications, in either rough or machined form**, to companies within India and also overseas to countries such as **Canada, Egypt, Germany, Hungary, Indonesia, Kenya, Malaysia, Netherlands, Saudi Arabia, South Africa, Tanzania and United States of America (USA)**.



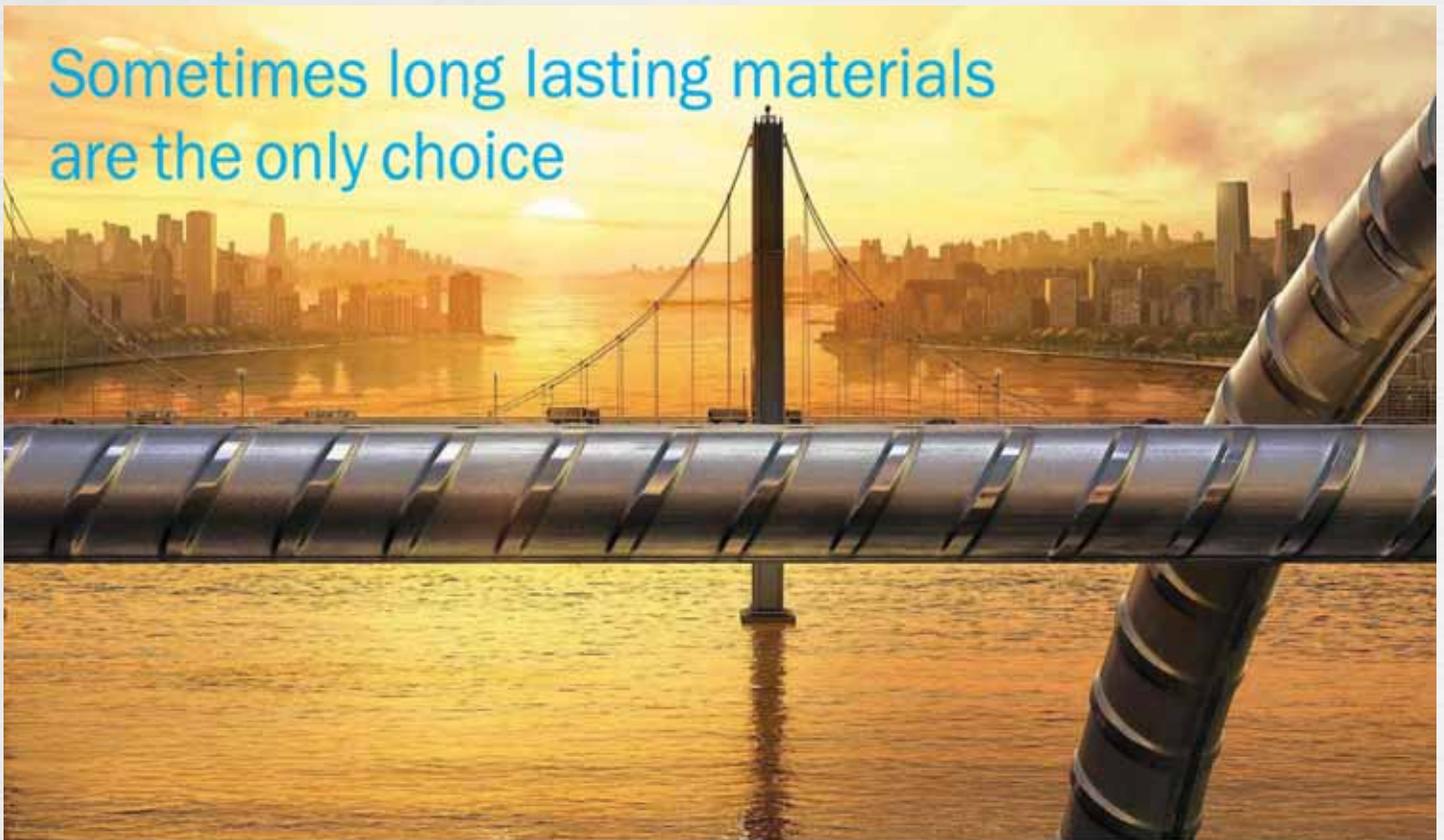
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These castings are used for corrosion, heat and wear resistant applications and are used by **machinery manufacturers and their user industries** such as **mechanical seals, steel &**



Sometimes long lasting materials are the only choice



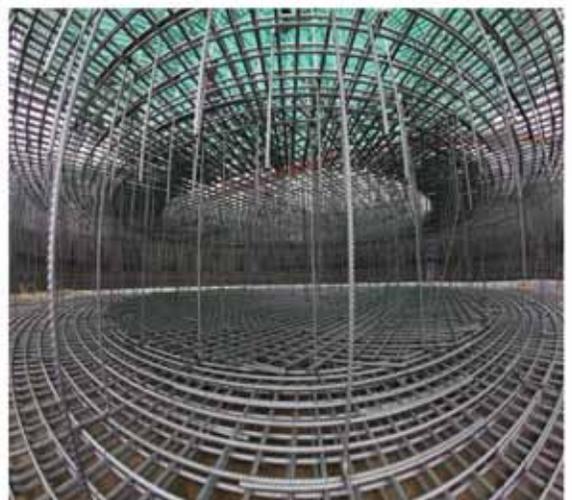
THE PROBLEM: Carbon steel is showing its age

Reinforced structures have shown early signs of deterioration. Coastal highway bridges corroding early through chlorides in atmosphere Spalling result due to the explosive effects of the corroding carbon steel reinforcement.



THE SOLUTION: Stainless steel is cost effective - for life

Stainless steel reinforcing bar is highly resistant to chloride-induced Corrosion, Meets design managers' requirements for increased design life beyond 100 years. Stainless steel is inherently maintenance-free for life. Selective use of stainless steel in place of carbon steel reinforcement makes perfect sense. With selective use of stainless, the overall increase in material cost is negligible.



The strength and stability of a global market leader

Wherever our partners are, we will be there with long lasting materials designed to meet the most extreme demands under the harshest conditions. Because the first step towards a world that lasts forever is making today's architectural & structural solutions as dependable and sustainable as possible.

Yatinder.suri@outokumpu.com
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high performance stainless steel

INDIAN STAINLESS STEEL DEVELOPMENT ASSOCIATION



Celebrates 25th Anniversary

6th - 7th, NOVEMBER 2014 | THE GRAND, NEW DELHI

DAY 1 - 6th NOVEMBER 2014

Gala Dinner : 7:00 pm, Hosted by Mr. Ratan Jindal at 'Jindal House', 5 Aurangzeb Road, New Delhi

DAY 2 - 7th NOVEMBER 2014

9:30 - 10:00 : Registration
10:00 - 11:45 : Inaugural Session
Welcome address by Mr N C Mathur, President, ISSDA

Address : Shri Rakesh Singh, Secretary, Ministry of Steel
: C S Verma, Chairman, Steel Authority of India Ltd.
: Ratan Jindal, CMD, Jindal Stainless Ltd.
: Tim Aiken, President, Nickel Institute,
: Subhrakant Panda, President,
International Chromium Development Association

Keynote Speaker : Markus Moll, MD, SMR - Steel & Metals Market
Research "Stainless Steel Strategy 2020 : The Indian Way, the Chinese Wayor a Third Way"

11:45 -12:00 : Tea Break / Networking

SESSION 1

12:00 - 1:30 : Pramod Kumar, GM, Rail Coach Factory, Kapurthala
: Vijay Sharma, Vice President, Marketing, Jindal Stainless Limited
: Neeraj R Kochhar, CMD, Viraj Profiles (I)
: S S Mohanty, Director (Technical) SAIL
: Yogesh Agarwal, Managing Director, Rimjhim Ispat Ltd.

1:30 - 2:30 : Lunch Break

SESSION 2 & 3

2:30 - 5:00 : Dr. Vivekanand Kain, Bhabha Atomic Research Center, Mumbai
: Richard Matheson, Executive Director, ASSDA, Australia
: Mr. Neeraj Borwankar, Head of the Laboratory and the Metallurgy Department, Larsen & Turbo
: Sanjay PV, Director, Sulzer India Ltd
: Mr. K. Syed Amir Basha, Chief Technology Officer, VA Tech Wabag Ltd
: A M Kulkarni, CEO, Mukand Limited
: Mr Hitendra Bhalaria, Bhalaria Metal Craft /
Mr R L Choudhary, Steel Market Info

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Registration Fees

- Rs. 7,500 including taxes per delegate (Confirmation by 30th September 2014)
- Rs. 8,500 including taxes per delegate (Confirmation by 31st October 2014)
- Rs. 10,000 including taxes per delegate (Spot Registration)

**To download registration form,
please visit our website
www.stainlessindia.org**

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