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Development Association L-22/4, G Fir, DLF Phase-II, Gurgaon 122 002



Tel :+91-124 4375 501, 502 & 503 Fax: +91-124 4375 509 E-mail: nissda@gmail.com, issdastainless@gmail.com Web: www.stainlessindia.org

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Stainless Steel Sculpture Representing India

A Delhi based space designer, Preksha Baid (Y-walls Design) has completed two art installations in stainless steel, '*The Niche Peacock*' and the '*Alphabet Tree*' for the Ministry of External Affairs. These permanent art installations are installed at Jawahar Lal Nehru Bhawan, Janpath, New Delhi.

THE NICHE PEACOCK

The designer has taken an inspiration from her childhood memory where for the first time she spotted a peacock with its feathers open. The design intent is to represent beautiful form of peacock, the national bird, on the facade of a government building. The stainless steel peacock is 6 meter in height and 3 meter wide. It's a 3D peacock where every part of the form is stylized with hand drawn patterns.

According to Preksha Baid, she used stainless steel for two reasons: first, since it is an outdoor installation; therefore stainless steel (AISI 316 Grade) is great to withstand the affects of the weather and secondly she wanted to play with the contrast of a strong and durable material and use it to represent a very delicate form like peacock.

Spotting a peacock in an urban city in India is rare now. So the designer intent is to remind people of the beautiful form of the peacock. The contrast of metal against the red dholpur stone building creates a visual delight for the viewer.

All the patterns were hand drawn and then hand crafted on to the stainless surface. Different textures and patterns have been applied on the stainless steel surface using hand crafting tools and processes. The peacock also has integrated fiber optic lighting design that would help each feather and other parts to illuminate





Installation work



The Niche Peacock in Stainless Steel AISI 316

in the dark. The team of Y-Walls design did an extensive 3D planning and engineering to make sure that all the different parts of the pieces are well integrated and no hardware or screws are visible from the front.

Ms Baid feels that stainless steel is underexplored from a craft point of view and there is immense potential of its use in space design such as facades, landscapes and interiors. Y-walls Design is working extensively with architects to integrate design of stainless steel in artistic applications in various projects.

ALPHABET TREE

The designer got inspired from the beautiful calligraphic style of the regional languages in India and had tried to showcase unity in diversity of India through her sculpture.

The art piece is an abstraction of a tree where letters from different regional languages are placed together on the branches of the abstract stainless steel tree. A tree symbolizes growth with a hope that the installations help people to connect with their roots and motivate the younger generations to learn their regional language.

Alphabet Tree is a 3D form and 360 degree installation. The branches are arranged in an arc form placed on the circular disc so as to get the visual placement right.

According to the designer, being an outdoor installation, which required long life and durability, a good corrosion resistant material was required and therefore stainless steel (AISI 316 & 304) was chosen for this art piece.

This outdoor installation is 5 meter in height and 5.2 meter in width. The bottom disc is 4.3 meter wide.

Unlike the peacock installation, here no surface decoration is done. The installation is a clean looking abstract tree form with the contrasting yellow stones. The uniqueness is the large seamless surface that is achieved in the production. It is installed from bottom to top and back to front in a sequence based installation.

According to Ms Baid, "Materials have their own mind. The more we explore them, more they will surprise. A stainless steel peacock just reminds us that perhaps there is a softer side of stainless steel as a material that has not been explored enough yet. Whereas, Alphabet Tree, we



Alphabet Tree in Stainless Steel AISI 316 & 304

experimented by taking a complex form and mixed another material with it. In future, Y-walls Design would continue to innovate newer applications of stainless steel in space design".

Contact details :



Ar. Preksha Baid Founder and Creative Director Y-walls Design 38 A/1, Second Floor Shahpur Jat, New Delhi 110 047 India. info@ywalls.com www.ywalls.com Tel:+91-41644074 Mob +91 - 9818689951



Alphabet Tree in 3D form

Coming Soon! An Indian Standard for Stainless Steel Milk Can

Presently, there is no BIS Standard for stainless steel milk cans. The existing IS 1825: 1983 is only for aluminium milk cans. In order to reclaim this situation and increase the use of stainless steel milk cans in India and also enhance exports, ISSDA has initiated efforts to establish an Indian standard for stainless steel milk cans. In the absence of standard for SS milk cans, manufacturers have developed their own specifications for various capacities, along the lines of National Dairy Development Board (NDDB) specification for 40 litres. Naturally, there are variations in the individual specifications.

Towards this, ISSDA participated in the eleventh meeting of Dairy Products and Equipment Sectional Committee, Food & Agricultural Department 19 of the Bureau of Indian Standard, held on 15th October, 2012 at NDRI, Karnal. The committee unanimously agreed that there was indeed a need for an Indian standard for stainless milk cans. It was



decided that ISSDA will prepare a draft specification for 5, 10, 20, 30 & 50 litre stainless steel milk cans aligned with the existing 40 litre stainless steel milk can specification of the National Dairy Development Board (NDDB) and submit it to the BIS.

To bring uniformity in the cans produced by different manufacturers, ISSDA called for a meeting of four leading stainless steel milk can manufacturers, M/s KK Cans and Allied Products Pvt Ltd, Krishna Industries, Shri Navkar Metals Ltd and Geeta Industries. The meeting was held at Mumbai on 18th December 2012 with the representatives of these manufacturers. A draft standard was meticulously made and 'was' submitted to BIS for comments and circulation. It is hoped that this standard will also help exporters of milk can to convince importers that they are supplying materials complying with the Indian Standards.

New Rail Coach Factory for the production of Stainless Steel Coaches -First Phase Completed

The foundation stone for the construction of a new rail coach factory at Rae Bareli in the state of Uttar Pradesh was laid on February 13, 2007. The factory is the third facility in India that produces railway compartments besides the Integral Coach Factory at Perambur in Tamil Nadu and the Rail Coach Factory at Kapurthala in Punjab. The factory will cater to Indian railways' increasing demand for coaches by annually rolling out about 1,000 LHB (Linke Holfmann Busch) coaches made of stainless steel.

20 LHB type stainless steel coaches produced in the factory which would be used in Rajdhani and Shatabdi trains were flagged off from the factory in the month of November 2012. Currently, the factory is engaged only in assembling of LHB coaches. Once fully functional (scheduled April 2014), factory is expected to roll out 1,000 coaches annually. The factory will also have inbuilt capability to roll out 14 types of coaches with state-of-the technology. Improved coach designs for safe, comfortable, jolt and noise free and riding at high-speeds are planned to be manufactured from this plant.

<image>

ISSDA's participation at HARDWARE SHOW 2013, Ahmedabad, Gujarat

ISSDA participated in "The Hardware Show 2013", organized by Kevin Infomedia, which was held in Ahmedabad from 4 - 7 January 2013. Hardware sector is one of the rapidly growing markets where stainless steel is fast replacing the conventional materials. Gujarat is hub of hardware manufacturing Therefore, this exclusive exhibition on Builder's Hardware brought together hardware manufacturers, architects and interior designers in large numbers from all over India.

Many architects, designers, traders, students and people from different walks of life interested in new products available in stainless steel visited ISSDA stall. Posters highlighting the applications of stainless steel in building hardware and construction industry were displayed in the stall. Visitors were informed that ISSDA, having wealth of information and technical resources, can help them to resolve their queries on stainless steel free of charge.

Special issue of A+D magazine which showcased the new and innovative applications of use of stainless steel in the Architecture Building and Construction sector were distributed to architects and interior designers visiting our stall. They were also encouraged to visit ISSDA's website <u>www.stainlessindia.org</u> and browse through Supply Chain link to source various stainless steel products and services, including fabricators / contractors.



ISSDA receiving the Memento from Kevin Infomedia



Interacting with visitors at ISSDA stall

Nickel Institute's new publication 10 073 <u>Corrosion Resistant Alloys in the Oil and Gas Industry –</u> <u>selection guidelines update</u>.

Corrosion Resistant Alloys (CRAs) are essential for providing long term resistance to corrosion for many components exposed to oil and gas production environments. Components include downhole tubing and safety critical elements, wellhead and Xmas tree components and valves, pipelines, piping, valves, vessels, heat exchangers and many other pieces of equipment in facilities. There are many CRAs to select from, and they can be characterised by their resistance to specific environments.

This guide, by Bruce Craig and Liane Smith (consultants to the Nickel Institute), for selection of CRAs for particular environments was originally published in 1998 and authored by Bruce Craig. It was one of the first to attempt to show that a material's corrosion properties are influenced by many environmental parameters simultaneously.

The publication has stood the test of time and its third edition continues to provide reliable guidelines on materials performance.

To download the pdf please visit : http://www.nickelinstitute.org/MediaCentre/News/ 10073CorrosionResistantAlloysIntheOilandGasIndustries3rdEd.aspx

continued from..page 3

Stainless steel coaches are expected to have greater resistance to corrosion with extra carrying capacity but reduced coach weight and superior riding index at high speed.

The factory has been constructed by Rail Vikas Nigam Limited (RVNL).

It has been reported that the capacity of the factory will be gradually increased to reach a peak production capacity of 2500 coaches per annum since the railway has decided to gradually replace the existing mild steel coaches by high-quality stainless steel coaches (LHB coaches), as used in the Rajdhani and Shatabdi type trains.

Modernized Public Sanitation in Stainless Steel

In India, the Public Sanitation system has lingered devoid of any remarkable groundbreaking innovations. The lack of public sanitation in the country is not exclusive to rural sector, but is clearly visible in well developed cities also.

Though there have been numerous conventional systems of public sanitation such as traditional brick and mortar toilets available across the country, the lack of proper cleanliness on account of improper planning, monitoring and use of unsustainable material of construction have been a grave concern all this while.

Under this context, Eram Scientific, a home-grown social enterprise based in Kerala, has introduced an **eToilet** which effectively addresses the challenges faced at sanitation front.

This eToilet is a web-mobile-electronics convergence product, featuring automated door opening, power flushing, automatic closet washing, sterilization, automatic platform cleaning mechanism with an anaerobic solution used for sewage treatment.

Stainless steel has been selected as a preferred choice of material to address factors like durability, safety of the toilet units and hygiene. It was informed that Stainless steel was an obvious choice of material since the units are exposed to extreme climatic conditions depending on the geographical conditions.

The use of stainless steel in the unit ensures high resistance to the units by preventing it from corrosion in addition to the excellent aesthetic appearance, fire and heat resistance, vandalresistance, strength, toughness and hygiene it provides. Furthermore, stainless steel stands out since it can be recycled and disposed assuring no major health hazards.

This eToilet defined as "a reverberating change maker" in public sanitation has been manufactured using stainless steel as its major build-on component such as sliding doors, ceiling covers, closet with thickness varying from 0.8 to 1.5 mm. The closet used in eToilet is made of stainless steel grade 304. The interior panels and ceiling of eToilet are made of SS 304 brush finish. The automated sliding door is made of SS 304 tubes.





FRP Platform with SS Closet



Cloth Hanger

The flexible design of this eToilet allows mass customization and facilitate off site production and on-site installation.

The use of stainless steel as the major eToilet component has added to the below cited benefits:

• Corrosion free property aids in maintaining the interiors and exteriors of the eToilet always clean and hygienic

• The longevity factor of stainless steel makes it more durable and sustainable.

• Stainless steel needs less maintenance and does not require harsh cleaners to maintain the hygienic aspects. eToilets can be dismantled and re-assembled at any given location. The SS panels used in the eToilets provides stability and better finish during reassembly.



Hand Pipe



SS Inside walls

There have been more than 400 installations of eToilet across the country under the aegis of various local bodies and government departments. This sustainable intervention in the sanitation sector will go a long way in addressing the sanitation challenges faced in the country.

Contact details: Ms. Bincy Baby, He

Ms. Bincy Baby, Head- Convergence Business Group, Eram Scientific Solutions, +919747756100 bincy@eramscientific.com



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Surface Finish is as important as the longevity of stainless steel itself, both for allowing continuous passivation to prevent corrosion and it's aesthetic quality.

For applications like bathroom accessories, furniture, gym equipments, architectural products like handrails etc. pre-finished tubes are increasingly becoming popular.

One of ISSDA's member companies, M/s Loeser Arm India Pvt. Ltd has recently introduced a fully automated finishing and packing line for the Indian market after it's success at various locations worldwide from USA to Russia by it's Joint Venture partner, Loeser Group, Germany.

Some of the benefits of this technology are;

- repeated grinding & polishing in industrial quantities
- just in time flexibility
- reduction of stock cost
- reduction of manpower
- elimination of reworks/rejects
- increase in sales and margins
- one pass finishing concept
- different finishes possible including Mirror Finish



It is envisaged that with such a technology, now available in India, the importance of aesthetics along with material handling and good fabrication techniques will assist the industry partners to be able to deliver best of the quality products matching Global Standards from the Indian Subcontinent.

Contact details are:

LOESER ARM INDIA PVT. LTD. 23-B, Sector 31, HSIIDC Industrial Estate, Faridabad 121003. Haryana. Phone: +91-129-4048900 Fax: +91-129-4038900 Email: info@loeserarm.in www.loeserarm.in / www.loeser.com Contact: Siddharth Kaul +91-783-829-3360



SSP BAGS NATIONAL SUSTAINABILITY AWARD 2011-12

Salem Steel Plant has won the prestigious National Sustainability Award for the year 2011-12 from the Indian Institute of Metals (IIM). Shri DRS Chaudhary, Secretary, Ministry of Steel, gave away the award in the presence of Shri Beni Prasad Verma, Hon'ble Minister of Steel, which was received by Shri SS Mohanty, Director (Technical), SAIL and Shri SK Khare, GM (Works), SSP, at a glittering function during the 50th National Metallurgists' Day celebrations held at Jamshedpur on November 16, under the aegis of Govt of India, Ministry of Steel. Chairman SAIL, Shri CS Verma, and CEO Bhilai Steel Plant, Shri S Chandrasekaran, were also present on the occasion.

SSP has won the first prize among the Secondary Steel Plants / Alloys Steel Plants category for the year 2011-12. Salem Steel Plant has bagged this award consecutively for the 9th time and 16th time since inception of this award in the year 1991. The award symbolizes SSP's commitment to quality and further enhances the value of its brand, Salem Stainless.

The Ferrous Division of the Indian Institute of Metals has been organising the National Quality Competition since 1991 to encourage and recognise the quality control aspects in the steel sector.



(L to R) Shri SK Khare, General Manager (Works), SSP, Shri HM Nerukar, President, IIM, Shri DRS Chaudhary, Secretary, Ministry of Steel and SS Mohanty, Director (Technical), SAIL

Stainless Steel Centenary celebrated at Jodhpur, Rajasthan

On the occasion of '100 years of stainless steel' the Rajasthan Stainless Steel Re-Rollers Association celebrated it with an event in their 'Steel Bhavan' Conference Room at Jodhpur. People from stainless steel re-rollers industry and utensil manufacturers participated in the event. Senior office bearers and Pastpresidents of the association welcomed the chief guest of the event Mr. N C Mathur, President, Indian Steel Stainless Development Association (ISSDA).

On this occasion, Mr. Mathur briefed the audience on historical hundred years of journey of stainless steel and updated them with a global perspective on stainless steel market. He also emphasised on the need to increase the usage of stainless within the country considering the fact that the whole world is looking up to India as a fast growing market.

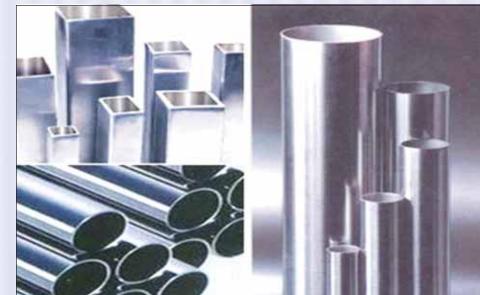


Mr N C Mathur, President, ISSDA, addressing the audience

He also cautioned the audience by presenting the facts on how China is exporting stainless steel items in India replacing locally made similar items of 'patta' and 'circles' in huge volume, which can have serious impact on the health of local producers. His sentiments were echoed by Mr. R L Chowdhary, Editorin-Chief of Steel Market Info, the cohost and other members and participants present there. The event ended with a vote of thanks followed by dinner.



Mr N C Mathur, President, ISSDA, receiving Memento



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Stainless Steel Plumbing: Guaranteed supply at minus 40 °C

The Indian "Bharati" research station in the eastern Antarctic, with an area of approximately 2000 m² and up to 50 inhabitants, has been commissioned in March 2012. This "New Indian Research Station Bharati" was commissioned by the National Centre of Antarctic and Ocean Research (NCAOR), which belongs to the Indian Ministry for Geoscience. IMS Ingenieurgesellschaft mbH (Hamburg) were responsible for the basic design. KAEFER Construction GmbH, with its headquarters in Bremen, was entrusted with the task of the detailed planning and completion of the building. Viega GmbH & Co. KG was responsible for installation of piping system for heating and drinking water.

The year-round provision of heat and drinking water to the 134 containers of the "Bharati" research station is essential in the extreme Antarctic conditions.

This eastern part of Antarctic has to face extreme weather conditions where temperature can fall as low as minus 40 °C. This posed a great challenge in maintaining water supply used for heating and drinking and required a proper selection of piping system and material of construction.

Hygienically reliable drinking water installation

When it comes to the drinking water system, hygiene requirements play a decisive role in material selection. Stainless steel is an ideally suited material for potable water applications. Apart from hygiene, stainless steel offers maintenance free life, corrosion protection, low resistance to flow, light weight and ease in installation. The demands were all met by the high grade piping system "Sanpress Inox" made of stainless steel 1.4521 (AISI 444). Grade 1.4521 (AISI 444) is a dual stabilized Molybdenum alloyed ferritic stainless steel. This grade offers excellent corrosion resistance coupled with resistance to stress corrosion cracking making it an ideal material for hot water systems. This grade is also approved worldwide for drinking water applications.

Viega is one of the leading companies in the field of plumbing and heating systems. Viega offers their expert solution in all fields of building services:



In March 2012, the new Indian "Bharati" research station was officially commissioned at the Larsemann Hills on the eastern Antarctic coast. (Photo: KAEFER)



The utmost care was taken in preparing for the assembly in the Antarctic: Openings for the drinking water installation realised with the Viega "Sanpress Inox" system made of stainless steel 1.4521. (Photo: Viega)



The best tool for the Antarctic: Problem-free pressing of pipes at ambient temperatures around freezing and in the tightest of spaces – with the help of press rings. (Photo: Viega)

drinking water and heating installations, pre-wall and drainage facilities, gas, solar and compressed-air installations for buildings, industrial plants and shipbuilding.

Contact: Mr C S Gupta, M/s Viega GmbH & Co. KG, Office No. 612 Suncity Business Tower, Golf Course Road, Sector -54, Gurgaon 122 002 Mob : 98101 56083, Direct : +91 124 349311, Fax: +91 124 4263766 www.viega.com

Stainless Steels – Economic Benefits and Cost-efficiency for the Biofuels Industry

Stainless steels are widely used in the global biofuels industry. Stainless Steels have an excellent track record and are the materials of choice for numerous applications in bioethanol, biodiesel and biogas production facilities. Stainless steels offer excellent corrosion resistance in the biofuels industry's various process conditions coupled with good strength, ductility, toughness and ease of fabrication.

Stainless steels are readily available worldwide in a wide variety of product forms. In addition, stainless steels are easily maintained to give an attractive, hygienic, high tech appearance. The 100% recyclability of stainless steel supports the biofuels industry's long term sustainability concepts and goals. steel for a considerable share of the production equipment. Often using stainless steels allow designers to use lighter walled piping systems, or thinner walled tanks and process vessels. This results in construction, handling and fabrication costs which are frequently lower when stainless steels are used compared to much heavier carbon steels.

Standard austenitic stainless steels Type 304(L) and Type 316(L) are capable of meeting most of the corrosive conditions encountered in ethanol, biodiesel and biogas production and handling equipment, and are therefore widely used and recognized as cost-effective and reliable materials solutions for superior corrosion resistance in certain more corrosive applications, duplex, super compound annual growth (CAGR) of 4.4% in the next 8 years. Biodiesel production in the world reached 23.6 million liters and is forecast to grow at 3.5% CAGR, translating into some 32 million liters by 2020 (source, Global Data).

Many industry participants believe that the future lies in bio refineries which integrate biomass conversion processes and equipment to produce fuels power and chemicals from biomass. Industrial bio-refineries have been identified as the most promising route to the creation of bio-based industry in many countries.

The trend is clearly towards stronger awareness of cost efficiency in these industries, which will take more and



Although the cost of stainless steel products such as pipe, weight for weight, is significantly higher than for carbon steel and other possible materials, there is sometimes a perception that they are "too expensive", and that they should be confined only to the most corrosive applications. However, the advantages of stainless steels allow them to be used cost-effectively. This has been demonstrated extensively and successfully in both ethanol and biodiesel plants in all main geographic production region.

An increasing number of biofuels process engineering companies specify stainless austenitic and nickel alloys will be suitable. Some high temperature applications in cellulosic ethanol production may also require special stainless or nickel alloys.

The growth prospects of ethanol, biodiesel and biogas industries are considerable. Laws, mandates and government policy and incentives facilitating their development policy and incentives facilitating their development and growth are in place in numerous countries in the world, in various ways. Global ethanol production in 2011 was 105.6 million liters (33.5 million liters in 2003) and market analysts predict more notice of such issues as it grows and develops. Biofuels plants will be looking for reliability, low maintenance costs and long lasting production equipment. Stainless steels actively contribute to these objectives and bring considerable value to the biofuels industry.

(An extract from the Nickel Institute Technical Series No: 10 090 titled STAINLESS STEELS Cost –Efficient Materials for the Global Biofuels Industries by Kristina Osterman) read more www.nickelinstitute.org/ publication.)

Massive Push to SS316L Retention Tanks for Processing Waste in Railway Coach Toilets

The April 2012 issue of STAINLESS INDIA magazine featured an article on the retention tanks for processing waste in Railway Coach Toilets. The article informed the readers about how Defence Research & Development Establishment (DRDE) designed a customised toilet for railway coaches on the request of the Research Design and Standards Organisation (RDSO), Lucknow. Made of AISI 316L stainless steel, it is rectangular in shape and does not require any special maintenance, except routine cleaning. It has two basic chambers, one for biological and the other for chemical treatment.

The combination of these two treatments results in odourless effluent for safe discharge.

A major push to the application of such bio digester type of waste management has come from the Indian Railways. The single toilet bio-digester was fitted in at



least eight long-distance trains. Now riding on the success from these trials, railway is planning to install 10,000 bio toilets based on the DRDO bio digester technology as proposed in 2012-13 Railway Budget Considering the fact that railway regularly uses more than 40,000 coaches for passenger service, this could translate into huge market potential.



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Indian Stainless Steel Development Association (ISSDA), with • the growing demand from the industry, has commissioned a detailed market research report.

This report is an extensive study of the ever changing dynamics of growing Indian market with emergence of new applications, shifts in consumption from its traditional utensil and population oriented sectors. India is witnessing a exceptional growth in the recent years ushering in new manufacturing capacities and new product requirements for special applications. This report envisages to capture the very essence of unique Indian market phenomenon and present opportunities for business.

OBJECTIVE OF MARKET RESEARCH

- To clearly map the Indian and International market to assist members of ISSDA to effectively negotiate the Market opportunities.
- To Showcase the Indian Stainless Steel supply capabilities and present Indian market capabilities.

To identify existing and new usage market trends both in India as well as in the International markets.

Launchi

April 2013

- To forecast the demand for SS by various sub segments over the next 10 years
- To bring out the gaps in supply and marketing infrastructure.
- To act as an Information Guide for current suppliers and new entrepreneurs

For more information and reservation of a copy in advance:

Contact

India Stainless Steel

Market Report:2013

Indian Stainless Steel Development Association L-22/4, Ground floor, DLF Phase-2 Gurgaon 122 002 Tel : 91-124 4375 501, 502, 503 Fax: 91-124 4375 509 Email :nissda@gmail.com www.stainlessindia .org

Retirements



Mr Ramesh R Gopal, Executive Director ISSDA, serving Nickel and Stainless Steel Industry for last 25 y e a r s, t o o k retirement on 31st December 2012.

A metallurgist by training from IIT Bombay, he was known for his experience in market development activities in the field of stainless steel. He joined NIDI in 1987 and was part of the core team instrumental in formation of ISSDA in 1989.

Reader's of this magazine have always appreciated his efforts and enthusiasm in keeping them informed and updated on the recent happenings in the applications of stainless steel in the country and around the world. His expertise and commitment to the overall development of stainless steel industry in the country will truly be remembered. We wish him a prosperous health and life ahead.

Mr. Rohit Kumar promoted as Deputy Director in ISSDA

Mr. Rohit Kumar joined as Senior Manager in ISSDA from May 16, 2012 and has been promoted to Deputy Director with effect from November 21, 2012. Mr. Rohit



Kumar brings with him a wealth of experience in various aspects of the stainless steel industry and is a valuable asset to the Association. With his help, ISSDA would be able to honorably execute its responsibilities to the Indian stainless steel industry and market.

Prior to joining ISSDA, Mr. Kumar was associated with M/s Sunflag Iron & Steel Ltd for over three years in various capacities. He also served in M/s Jindal Stainless Ltd, in the R &D section for over four years. Mr. Kumar is a postgraduate in metallurgy from the IIT (Kanpur).

Attention Readers !

You can receive your personal copy of 'Stainless India' by sending your complete postal address and contact details to: nissda@gmail.com

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