

STAINLESS INDIA

100
YEARS
OF
STAINLESS
STEEL

A MAGAZINE PUBLISHED BY

**Indian Stainless Steel
Development Association**
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The Softer Side of Stainless Steel An Art Installation at Bangalore International Airport



Next time when you walk through the arrival section at Bangalore International Airport you will pause for a moment to appreciate a 20 feet by 10 feet art installation named '**Flight**'.

This stainless steel artwork is an ideal reflection of the modernity of an airport and represents the city's heritage as the aerospace hub of India.

The creator of this art, Mr. Yusuf Arakkal is a Bangalore based internationally acclaimed artist. He is engaged in creating site-specific

large sculptures, installations and murals. His creations are in a wide variety of materials including stainless steel.

He says ***"I love to work with stainless steel for its aesthetics, long life, ability to be formed into intricate shapes and freedom to experiment in combination with other metals."***

Mr. Arakkal drew inspiration from his twenty year old association with Hindustan Aeronautics Limited

(HAL), Bangalore, where he designed aircraft components as a machinist. This stainless steel and copper art work, mounted on synthetic granite has fifty-five separate pieces joined together to bring alive the '**Flight**'.

Mr. Mai M Mani, CEO of M/s RD&M, an Architectural firm, who is also a painter, Tamil film actor and a versatile designer helped Mr. Arakkal in converting the designs into the final form.

Contact details of Mr Yusuf Arakkal, email: yusufarakkal1@gmail.com

ISSDA's Interactive Programme with Students & Faculty & Launch of 'Stainless Steel - Online Specialty Course'

ISSDA has expedited its regular interactive programme with students & faculty of leading technical institutes to increase the awareness on stainless steel. These future engineers, architects, designers were updated on the latest advancement in the use of stainless steel in various sectors. They were also educated on how to do the free online interactive course designed to improve their knowledge of stainless steel.



Mr N C Mathur, President, ISSDA at the Indian Institute of Technology (Banaras Hindu University) Varanasi, making presentation to the student community and faculties of the Metallurgical Engineering Department.



Mr N C Mathur & Mr Rohit Kumar of ISSDA, after an interactive meeting and presentation to the post graduate students of Industrial Design Centre (IDC) and Faculty of Product Design and Mobility at IDC of IIT, Mumbai.

ISSDA's Participation at the Stainless Steel Centenary Symposium SSCS 2013



Section of Audience



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ISSDA participated in the “**Stainless Steel Centenary Symposium SSCS 2013**” held from August 12-14, 2013 in Mumbai. The symposium was organized by the Indian Institute of Metals, Mumbai Chapter and the Department of Atomic Energy, IIT, Mumbai and supported by ISSDA. Part of the event was an exhibition which was simultaneously going on with the event.

Mr N C Mathur, President of ISSDA, presented a paper titled ‘**Present Status of Stainless Steel Industry in India and its Future Prospects**’ at this event. His presentation was well received by the participants. Mr Mathur was also part of the National Advisory Committee of SSCS 2013.

This symposium brought together all those who are involved with stainless steel – making, shaping, treating, uses in research and development etc. Mr Rohit Kumar, Deputy Director of ISSDA was part of the National Organizing Committee for the Symposium. Around 82 technical papers were presented experienced personnel’s from the stainless steel and related industry.

During the exhibition, ISSDA enlightened the visitors about the availability of ‘**Online Speciality Course in Stainless Steel**’ and encouraged them to take up the course. A+D magazine, which showcased the use of stainless steel in ABC sector from around the world, along with ‘**Stainless India**’ magazine was distributed to the visitors at the stall.





Stainless Steel Water Storage Tanks: The Right Choice

Potable water is a very serious problem not only in India, but the world over. Water quality has been drastically deteriorating over the years due to pollution and environmental degradation. The purity of water significantly depends upon the characteristics of material in which it is stored and used.

The property of Stainless Steel in maintaining the purity and hygiene of food and drinks is well known to everyone. We are already using Stainless Steel extensively, for milk and food processing, cooking, serving and eating purposes in the form of utensils, containers and various household appliances.

Stainless Steel water tanks offer the following advantages over the other materials:

- Hygienic – Water remains in its natural form and 100% microbiological safe.
- Reduces risk of water borne disease
- Compact and aesthetic design
- No algae/fungus formation
- Value for money for years
- Easy to clean and practically maintenance free
- Total drain out provision provided at bottom of tank for easy cleaning.

Available in 100, 250, 400, 500, 1000, 2000, 3000 plus litres capacity.

Water Heats less in SS water tank

There is a misconception that water will heat up more if stored in a SS tank exposed to sunlight compared to conventional plastic water tanks. ISSDA has regularly been disseminating information on why water stored in SS tank is cooler compared to that stored in plastics and galvanized tanks. In a recent study done by market development team of Jindal Stainless Ltd. and M/s Maruti Mechanical (one of the manufacturers of SS water tanks) it has been re-established that water heats less compared to that stored in plastic made tanks. The team of Mr. C. P. Agrawal and Mr Gaurav Gupta from JSL, who personally monitored this experiment, informed us that this experiment was done by recording temperature of the water at regular interval stored in tanks made of different materials and finishes. On account of its high reflectivity, stainless steel surface rejects almost 50% of sunlight preventing the



water to be heated up during the day and it cools faster during evenings and night because of high thermal conductivity. The detailed results can be analyzed from the graph which states that even in the case of different surface finish SS tanks performs better than plastic tanks.

Market Potential :

An independent assessment of market size of popular plastic (High-density polyethylene - HDPE) tanks estimates it at ~15,00,000 tanks per annum which can be translated into a huge market potential for stainless steel water storage tanks. In future, rapid urbanization, decreasing resources and erratic supply of water will force the citizens to depend more on stored water. Even today mostly plastic tanks are in use because of its low initial cost over looking some inherent disadvantages such as fast wear and tear, less environment friendly, poor hygiene. But over the years of knowledge sharing has empowered people to understand the benefits of using the right kind of material based on Life Cycle Costing of a product.

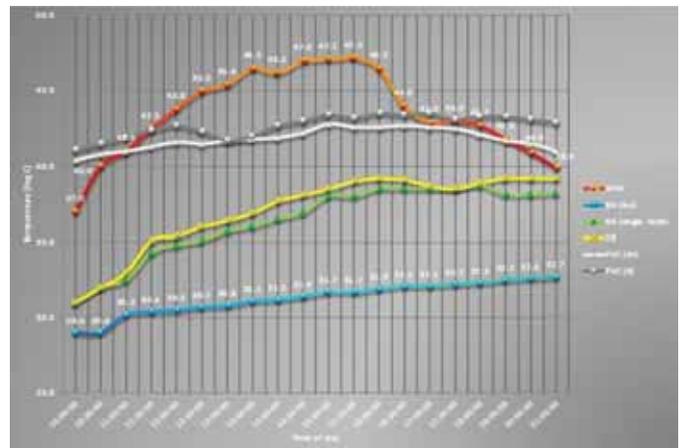
Value for Money, Save More:

Although the price of stainless steel water tank made of quality AISI 304 grade is twice that of plastic water tank, you are assured of a very long and maintenance free service life. Stainless Steel is fully recyclable and has a good scrap

value where as plastic tanks has no scrap value. The life of stainless steel water tank is considered to be 5 times more than any plastic tank.

ISSDA is happy to inform you that now stainless steel water tanks for storage purpose have started gaining wide recognition. To tap its potential to the fullest, ISSDA and manufacturers of SS water tanks have initiated their efforts to help Bureau of Indian Standard (BIS) in making a separate BIS standard for stainless steel water storage tanks in various capacities. A new standard will help the manufacturers to offer further guarantee to their customer of a certified product and will also instill confidence in the customer.

Those seeking more information and resourcing on the product are requested to contact M/s Amarwood Industries-Hyderabad, M/s Trivedi Groupe - Mumbai, M/s Sreevatsa Stainless - Chennai and M/s Maruti Mechanical, Delhi the major manufacturers of SS water storage tanks.



Modern and Maintenance Free Car Parking Structures in Stainless Steel



M/s Jindal Architecture Ltd has designed, fabricated and installed the first of its kind made in stainless steel car park structure at the office premises of Central Vigilance Commission (CVC), an autonomous body under the Government of India at New Delhi.

Car Park Shades made in stainless steel have gained appreciation for high strength and durability. **The high strength of stainless steel helps the designer to use lighter and thinner structures in designs which offers more access to driveway with easily accessible entrance. High corrosion resistance material like stainless steel reduces the requirement of regular maintenance and painting.**

Above car parking has been made of quality stainless steel grade AISI 304. Approximately, 8.5 tons of Stainless Steel has been used. The total length of the car parking is 68 MTR. The Arch design of the parking is a contemporary design which blends perfectly with the architectural beauty of the building.

The use of stainless steel in car park structures is becoming increasingly popular as it proves to be economically advantageous and aesthetically pleasing. We are likely to see more of such beautiful designs coming up in places such as malls, hospitals, apartments, stadiums, even in homes etc.

Fabricators contact details :

Mr Kuldeep Singh,
JSL Architecture Pvt Ltd
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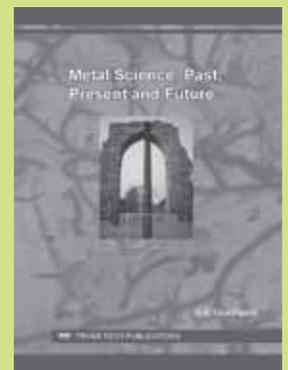
The book '**Metal Science : Past, Present, Future**' is the latest publication in English dealing with the history of metal science. It is published by Trans Tech Publications, Zurich-Durten, Switzerland (2013, ISBN 978-3-03785). The author of the book is Professor Dr. G.S. Upadhyaya, formerly Professor at IIT Kanpur, whose academic profession spans over more than five decades.

This book also covers the history of stainless steel under the major section of Alloy Steels. The author has very rightly mentioned, how in case of high cost of scrap/ raw material, alternative process has been developed, where chromium ore and hot metal from blast furnace or some other iron making unit are converted to reduce the ore, followed by decarburization in another converter and subsequent vacuum treatment.

The author believes that science and technology history teaching should be an integral part of education. The current text book fulfils this gap.

Contact : Prof. G. S. Upadhyaya, email : gsu@iitk.ac.in

Latest Publication



online speciality course

STAINLESS STEEL

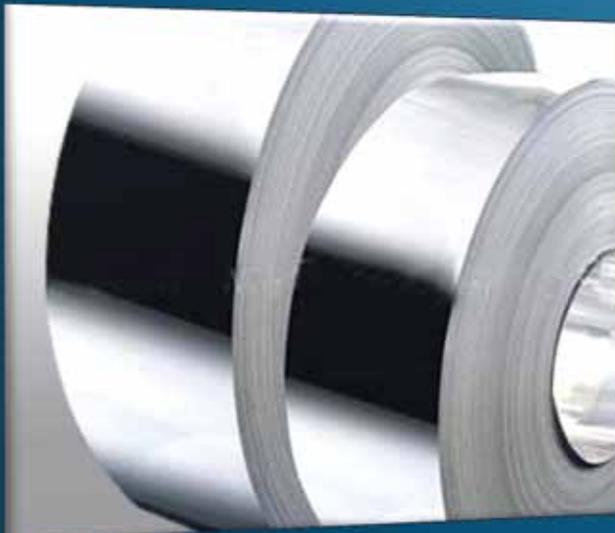
ISSDA launches a special **free** online STAINLESS STEEL Speciality course in collaboration with **International Stainless Steel Forum (ISSF)** to create knowledge about Stainless Steel.

The ISSF Training Portal is home to our Stainless Steel Specialist Course, which is designed to improve your knowledge of stainless steel, its properties, performance and uses. It contains interactive e-learning modules for fast, rewarding training.

Whether you are an engineer, an architect, a student, in stainless steel sales or in manufacturing, the course is essential training for anyone working with stainless steel. The course provides **a standard level of knowledge** and recognized level of achievement. This means a higher level of understanding of stainless steel for existing and new workers.



**ENHANCE YOUR KNOWLEDGE
ON STAINLESS STEEL**



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PROCEDURE ON HOW TO DO THE COURSE

ISSF TRAINING PORTAL

"EVERYTHING YOU NEED TO KNOW ABOUT STAINLESS STEEL"



Welcome

The ISSF Training Portal is home to our Stainless Steel Specialist Course, which is designed to improve your knowledge of stainless steel, its properties, performance and uses. It contains interactive e-learning modules for fast, rewarding training.

Whether you are an engineer, an architect, in stainless steel sales or in manufacturing, the course is essential training for anyone working with stainless steel. The course provides a standard level of knowledge and recognised level of achievement. This means a higher level of understanding of stainless steel for existing and new workers.

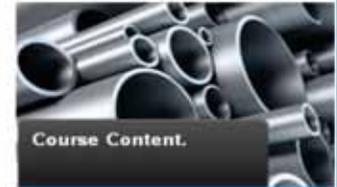
To find out more about this course and how it is delivered, explore the information in the side panels.

To begin you will need to provide your details by registering.

REGISTER

If you have already registered, please log in here.

LOG IN



Follow the instruction below:

1. Go to the URL: <http://www.issftraining.org/in/>.
2. Click on REGISTER icon on the homepage. (for new users).
3. You will be redirected to a page wherein you need to select a username and password and give a valid e-mail id.
4. Check your mailbox and click on the activation link. After clicking on the activation link, you will be redirected to a homepage wherein on the extreme right hand side of the page you will see the icon MY LEARNING.
5. Under the icon MY LEARNING you will see MY COURSES and on clicking it, you will see the next screen with the five modules.
6. You are requested to choose the first module and click on enroll. You can bulk enroll too.
7. After confirming enrollment you will be asked for two options:
 - a) Online Interactive (You are requested to chose online interactive as it has demonstrations, video, animation to assist in learning.)
 - b) Text based version
8. Follow the instruction to complete the module. Complete the Q&A to get the grading.
9. After completion of course write to us for getting report card/certificate.
10. Write to us at nissda@gmail.com, in case you face any difficulty.

Modern Plumbing Systems in Stainless Steel Gaining Popularity

Plumbing systems have a huge impact on our modern lives, though we rarely ever think about them until something goes wrong. Plumbing systems distribute water throughout the building by pipes fitted in or around walls to valves and knobs that control water flow to your sinks, tubs, water pumps, washing machine and toilets.

A good water piping system increases the life and safety of the building. The most commonly used material for water piping is carbon steel but it tends to corrode heavily over a period of time and can cause leakages and subsequent damages to structure.

With increasing awareness Indian Architects, designers and plumbing consultants have started looking for alternatives to galvanized iron, PVC or copper to meet the demanding performance requirements from customer going for state-of-the art buildings.

Stainless Steel plumbing is often seen as expensive and crafty to work with but the new and innovative "Press Fit Technology" has made stainless steel to be cost effective and easy to install alternative to most systems.

Apart from the material benefits on account of very low corrosion rate in water, better hygienic, high flow rates and high strength, there are some direct economic benefits of it, such as :

- Expected lifetime of stainless steel system is more than 50 years way ahead of many competing materials
- It requires no additional coating
- No maintenance and replacement results in cost saving
- Lower thickness of pipe on account of high strength thus lower material cost
- High flow velocity allows to use lower diameter pipes thus reducing cost
- With press fit technology (75% less installation time) savings in labor cost

- Savings in installation time results in saving in project overruns.

In two very recent projects decision to use stainless steel plumbing systems was taken on account of above all benefits.

Project 1 Housing Society of CPWD:

Central Public Works Department (CPWD) under the Ministry of Urban Development, Government of India has gone for fully state-of-art stainless steel plumbing in one of their residential projects in New Delhi. It is very first time when CPWD will be using SS plumbing system in their projects. In three multi story towers AISI 304 grade stainless steel pipe system with press fit technology has been used. This project has also introduced various stainless steel



Press fitted piping system



products, including plumbing system in the Delhi Schedule of Rates.

Delhi Schedule of Rates (DSR) is a benchmark for the construction industry. For any construction work, Schedule of Rates plays an important role in preconstruction stages. CPWD has released The DSR 2013 edition and stainless steel has been included in many items.

Project 2: New Convention Centre cum Lecture Hall at IIT Delhi

The Indian Institute of Technology (IIT), Delhi is building a five story lecture hall in their campus in which SS plumbing system is being used. AISI 304 grade stainless pipe system with press fit technology has been used.



Fabricators details :

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IIT Delhi Convention Centre cum Lecture Hall

3rd Indian Stainless Steel Houseware Show/Tube Pipe Expo by Steel Market Info in Mumbai



Mr Rohit Kumar and Mr P. Nagaraj (JSL) at ISSDA booth

We are pleased to inform you that the 3rd Indian Stainless Steel Houseware Show was held at Bombay Exhibition & Convention Centre, Goregaon, Mumbai from 23-25 August, 2013.

Your association participated in the exhibition by having a booth and created awareness to the visitors to our stall about ISSDA and its activities.

Stainless India magazine along with the flier of 'Online Speciality Course in Stainless Steel' launched by ISSDA in collaboration with ISSF was distributed. People were informed about the benefits of this free online course.

The special issue of A+D magazine showcasing innovative applications of stainless steel in ABC sector was also distributed to create the awareness about the newer applications of this excellent engineering material to the people.

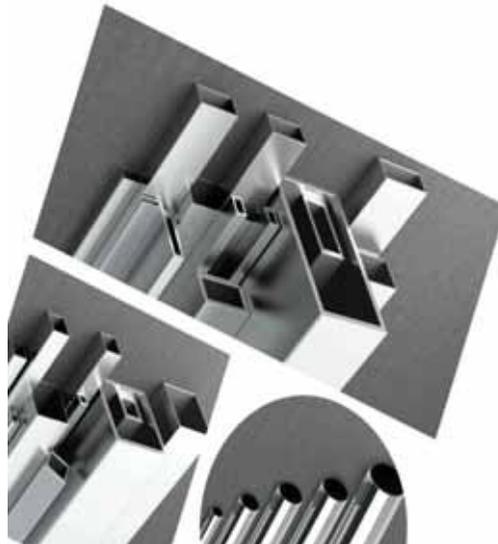


Raajratna Ventures Limited (Tube Division) is a leading manufacturer of Welded Stainless Steel Hollow Sections/ tubes.

Since its inception in year 2011, company is dedicated to supply the best quality Welded Stainless Steel Hollow Sections/ tubes to the industries like Building & Constructions, Food & Beverages, Pharmaceuticals, Architectural Design, Off Shore & Marin Industries, Nuclear Plants to name a few.

Raajratna Ventures Limited (Tube Division) has an annual production capacity of 6000 MT.

With the team of well qualified and experienced technicians, engineers, operators and sales people the company is ready to take up any kind of challenges to fulfill customer's requirements domestic and globally. By producing high quality tubes complying with ASTM A554



standards, Company has effectively etched an eminent domestic recognition.

Company has also its global presence in countries like Australia, Germany, Netherlands, Finland, Turkey, Russia, South East Asia, UK and The USA.

The Company is certified by **ISO: 9001-2008**, **ISO: 14001:2004** and **OHSAS: 18001-2007** for its best manufacturing and operational practices.

Raajratna Ventures Ltd-tube division offers following product range to fulfill customer requirements:

- Square Hollow Sections/Tubes (15x15mm to 150x150mm & thickness from 1.0mm to 6.5mm)
- Rectangular & Flat Hollow Sections/ Tubes (20x10mm to 200x100mm & thickness from 1.0mm to 6.5mm)
- Round Tubes (OD 12.7 mm to 76.2mm & thickness from 1.0mm to 4.5mm)
- Slotted Tubes (Single & Double Slots) (OD 42.4mm to OD 76.2mm with Slot Size 15 x 15 mm to 27 x 30 mm) with Thickness from 1.2mm to 2.0mm
"Trust us to build better."

Contact details :

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Email : domestic@raajtubes.com/
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We are pleased to introduce M/s Aperam Stainless Services & Solutions International SAS India Liaison office of Aperam stainless services & solutions international Saint-Denis France is representing the interest of group companies in the Indian market. They offer a complete range of stainless steel products including Slabs, Black and White coils, Tubes, CMP (Coil Mill Plate), PMP (Plate Mill Plate), Cold Rolled Coils and Sheets in various finishes.

Aperam Stainless Europe offers :

- **Thickness from 0.3mm up to 14mm in all Austenitic, Ferritic, Martensitic and Heat Resisting**
- **Grades with widths up to 2000mm**

Aperam South America:

- **Thickness from 0.3 mm up to 50.8mm in all Austenitic, Ferritic and Martensitic Grades.**
- **Tubes in size range of 25.4mm (OD) to 76.2mm (OD) for the automotive & the sugar industry.**

Contact Details:

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STAINLESS STEEL IN SMALL QUANTITY

**YOUR QUANTITY
YOUR GRADE*
YOUR SPECS**

**JINDAL'S
STAINLESS
STEEL**

Large or small! Now you can get any requirement of Stainless Steel at your doorstep.

Your quantity. Your grade. Your specifications.

And the stainless steel you get is backed by the Jindal guarantee!



different finishes, customised etchings and mirror finish stainless steel are also available

* conditions apply



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Durable Stainless Steel at Newly Built Rapid Metro, Gurgaon



Riding on the success of Delhi metro the city of Gurgaon (NCR of Delhi) has built India's first privately financed Metro system named 'Rapid Metro' connecting NH-8 to Delhi. This interlinking of Metro will help commuters to travel and reach the cyber city coming from far off places in Delhi. Rapid Metro line has six stations in phase -I.

The developers of Rapid Metro required the station architecture to have "an aesthetic form and external appearance which is unique, iconic and can reflect the identity and character of the urban neighborhoods."

The architectural division of M/s Canon Fasteners was awarded the work for Architectural finishing works for Rapid metro stations. Since these stations will attract thousands of commuters everyday a great combination of strength and corrosion resistant material was needed with an aesthetic appeal and the obvious choice was to use Stainless steel.

AISI 304 grade SS railing, Cladding, Gates, Grill and Dividers of approximately 125 tons has been used for this project.

The high quality SS promises to sustain the graceful charm of Rapid Metro Stations for a long time and will shine forever.

Contact Details:

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Business Development Manager

M/s Canon Fasteners

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Facts of Indian Stainless Steel Market 2013

This report covers India's stainless steel production, imports, exports and usage trends in established, emerging and nascent market sectors. The report is based on extensive data collection and interviews with a wide spectrum of producers, traders, importers, exporters and end-use product manufacturers all over India.

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