

# STAINLESS INDIA

A NEWSLETTER PUBLISHED BY



INDIAN STAINLESS STEEL DEVELOPMENT ASSOCIATION, NEW DELHI

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## Gleaming Stainless Steel Interiors for Hyderabad's Metro



*Stainless steel furnishings for Hyderabad's Multi Modal Transport System.*

*Fabricated at the Integral Coach Factory (ICF), Chennai, stainless steel in various finishes such as honeycomb, canvas, moon rock have been used for the side wall panel, roof panel, end wall panel, flooring in vendors compartment, luggage rack for Hyderabad's Multi Modal Transport System (MMTS). Stainless steel was chosen for ease of maintenance, improved aesthetic appearance and safety against fire. The material was supplied by M/s Salem Steel Plant-SAIL. Approximately 2 tonnes of stainless steel have been used per coach. Of the 48 coaches (8 rakes) which have been ordered, 18 coaches (3 rakes) have been manufactured by ICF and are ready for despatch. ICF will be supplying another 48 coaches for MMTS during 2003-2004. MMTS is expected to be operational sometime later in 2003. Information and photograph courtesy: Integral Coach Factory, Chennai - 600 038.*

### **Indian Stainless Steel Development Association**

K - 36 (FF), Hauz Khas Enclave, New Delhi - 110 016.

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## Airoli Railway Platform also gets Stainless Roof



*10,000 square metre of roof has been covered with stainless steel for the Airoli railway platform in Navi Mumbai.*

The Thane to Turbhe expressway is right now the epicenter of a technological revolution. Strength, durability, freedom from periodic maintenance and aesthetics have been the logic for this valuable engineering experience. Close on heels of the Koparkhairane Railway Station, the City and Industrial Development Corporation of Maharashtra Ltd (CIDCO) have implemented their second railway station platform at AIROLI with stainless steel roofing.

Akin to a painter's palette weaving hues of exotic shades, the stainless steel roofing has lent appealing and contrasting shades to the pristine environment. The new Airoli station will have a copper tan shade on the exterior, unlike the Koparkhairane station, which sports a Korean blue shade. Crafted out of SS 304 grade stainless steel in 0.50 mm thickness, which was supplied by Salem Steel Plant of SAIL, the Airoli station was designed by M/s Consulting Engineering Services (Pvt) Ltd. Salem Steel Plant had supplied over 50 MT of stainless steel for this project.

M/s Teknoworks (India) who have to their credit quite a few landmarks in building projects in Mumbai have completed the erection of this stainless steel roofing for Airoli in a record time.

**Why stainless steel?** Stainless steel has been a preferred roofing material worldwide on account of its long life, higher strength to-weight ratio, aesthetic edge, corrosion resistance. Other metallic options like pre-painted steel sheet roofing and galvalume roofing were not opted for in the case of Airoli in

view of their vulnerability to corrosion from cut edges and holes drilled for erection of roofing sheets. Particularly in marine locations and industrially polluted atmosphere, stainless steel roofing has been the most preferred roofing option worldwide with a guaranteed life that can go upto 100 years without any maintenance. Detailed techno-economic studies and cost benefit analysis finally tipped the decision in favour of stainless steel.

**Life-Cycle Cost:** Life-Cycle Cost (LCC) has been a scientifically evolved tool that facilitates evaluation of alternative investment options. Aggregating all the costs that would be incurred since inception through the life of each of the options, discounting it to the present value and then selecting the cost-effective option – is a technique well engrained elsewhere in the world while evaluating alternative options. CIDCO had adopted the LCC method of evaluating stainless steel versus the galvalume option while deciding to opt for the former. The LCC in case of stainless steel roofing becomes considerably cheaper (around 65%) of the galvalume option.

The Airoli project symbolizes the happy convergence of missions – the continuing obsession of CIDCO to create lasting landmarks in Mumbai and the persistent application development efforts of SAIL's Salem Steel Plant for promoting new and diverse stainless steel applications in the country.

*Information & photographs courtesy:* M/s SALEM STEEL PLANT, Steel Authority of India Ltd., Salem – 636 013, Tamil Nadu.

About 1.5 lac pieces of stainless steel self-drilling and self-tapping screws in various sizes were supplied by M/s Kundan Industries Ltd, Mumbai for this project.

## Police Memorial in Stainless Steel



*An artist's impression of the National Police Memorial .*

The Central Public Works Department (CPWD), Govt. of India is building a National Police Memorial at Chanakya Puri, Delhi. This memorial is being built to commemorate the services of the police force for the services rendered to the nation.

Projected to be taller than Delhi's India Gate, the memorial consists of a double arch, supporting a globe at its summit. The arch height is expected to be about 45 metres and the diameter of the geodesic (*relating to the geometry of the earth's surface*) globe will be about 12 metres.

Stainless steel has been specified for cladding the external surfaces of the arch. The globe is expected to be clad with coloured stainless steel. About 50 to 60 tonnes of stainless steel will be used in this project.

It would be worth noting that as early as December 2002, stainless steel was not under consideration for this project. The Nickel Development Institute (NiDI) and member companies of ISSDA were instrumental in explaining to CPWD engineers how stainless steel best suited their requirements of long life (hopefully more than a century), minimal maintenance and imparting a prestigious ambience to this national memorial for the policemen and security agencies who put their lives on the line for the security of the nation.

In particular, we are grateful to NiDI consultants who constantly provided expert advice on various technical matters relating to the use of stainless steel in this project.

The Police Memorial project is expected to be completed by the end of this year.

### **NiDI publication:**

#### **The Construction Specifier (NiDI Reprint Series No. 14 057) – Catherine Houska**

Metal has become increasingly popular because it provides unique design opportunities, strength, and corrosion resistance. Each metal family has unique characteristics. Performance over time depends on the designer understanding the advantages and limitations of each metal and taking these into consideration during the design process. *Free copies of this publication can be had from: NiDI-India, K – 36 (FF), Hauz Khas Enclave, New Delhi – 110 016; Fax: 011 – 2686 3376; E-mail: [nidissda@del3.vsnl.net.in](mailto:nidissda@del3.vsnl.net.in) (please give your postal address while sending your request).*

### **New Appointments at Centro Inox, Italy**

New office bearers have been appointed in Centro Inox (the Italian Stainless Steel Development Association). Dr Giuseppe Marzorati (Cogne Accia Speciali) replaces Dr Attilio Angelini as the Chairman with Dr Ernesto Amenduni Gresele (Acciaierie Valbruna) and Dr Timoteo Di Maulo (Ugine & Alz Italia) taking over as the Vice President and Treasurer respectively.

*Information courtesy:* CENTRO INOX, Piazza Velasca 10 – 20122 Milan, Italy; Tel: +39 02 86450559, 86450569; Fax: +39 02 860986; E-mail: [centinox@tin.it](mailto:centinox@tin.it)  
Web: [www.centroinox.it](http://www.centroinox.it)

### **Address Change Notice**

Change of subscriber postal address may kindly be notified immediately to ISSDA. Please enclose the recent mailing label alongwith the new postal address with your request.



## Stainless Steel Motorcycle Rims

M/s Autonix Auto Industries Pvt Ltd has developed stainless steel motorcycle wheel rims. These rims come in varying diameters from 60 cm, 70 cm and 54 cm, thus covering ranges of rims from mopeds to motor cycles. The stainless steel is being sourced from M/s Salem Steel Plant-SAIL. A 70-cm dia wheel rim uses about 2.2 kg of stainless steel.

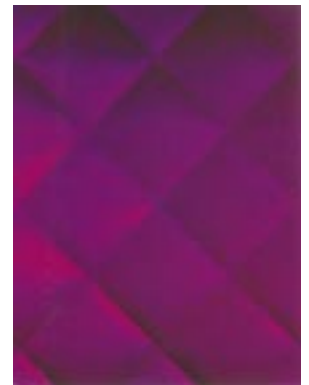
Besides wheel rims, Autonix produces other stainless steel items like trim rim exhaust (fitted at the end of the silencer pipe), engine guard for motorcycles (for Hero Honda and Bajaj), battery clamp (for Kinetic scooters), special foot rest (designed for Bajaj motorcycles), channels for power windows for cars, auto halogen bulb components (for H1, H3, H4, HS1, H7 types of bulbs).

Information and photograph courtesy: Mr Alok Gupta, Managing Director, AUTONIX AUTO INDUSTRIES PVT LTD, C – 12, Phase – 2, NOIDA – 201 305, Uttar Pradesh; Tel: 0120 – 2460 761 / 762 / 763; Fax: 0120 – 2460 766; E-mail: [info@autonixonline.com](mailto:info@autonixonline.com)  
Web: [www.autonixonline.com](http://www.autonixonline.com)

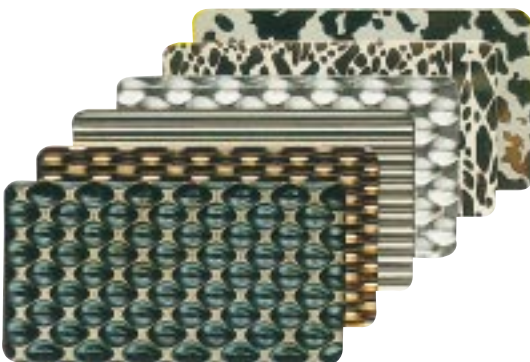
## Special Finishes in Stainless Steel



An example of Rimex's COLOURTEX™ finish stainless steel sheets; red quilted stainless steel at the EuroDisney, Paris.



A close-up of quilt finish.



of exciting and dynamic special finishes on stainless steels, which include:

- Textured 3D patterns
- Embossed patterns
- Colourtex™ range of coloured sheets
- Etched finishes
- Super mirror

A cut to length is available on stainless steel finishes.

Rimex's stainless steel sheets have been used at the PVR Cinema Multiplex located within the MGF Metropolitan Mall in Gurgaon near Delhi. The sheets are also being used to clad round columns at the ING Vysya Bank headquarters in Bangalore.

M/s New Era Industries Industries, New Delhi (a member company of ISSDA) is the sole distributor of M/s Rimex Metals, UK. The Rimex Group ([www.rimexmetals.com](http://www.rimexmetals.com)) produces a wide variety

For more details on Rimex's special surface finish stainless steels, please contact: Mr Aman Khanna, Executive Vice President, NEW ERA INDUSTRIES, 51 Adchini, Sri Aurobindo Marg, New Delhi – 110 017; Tel: 011 – 2685 4673 / 6673, 2652 6210; Fax: 011 – 2686 3573; E-mail: [newera@del2.vsnl.net.in](mailto:newera@del2.vsnl.net.in)

## Stainless Steel for Kolkata's *FORUM*



Situated at Elgin Road, Kolkata, the FORUM is a shopping mall, which sports many interesting stainless steel items like flagmasts, bench, railings, false ceiling, signage. *Contact details of the stainless steel fabricator:* Mr Rajesh Agarwal, TAYAL FURNITURE, 121 J N Mukherjee Road, Ghusuri, Howrah – 711 107; Tel: 033 – 2655 8680 / 2439; Mobile: 0-98300 30649; Resi: 033 – 2655 3963; Fax: 033 – 2655 7109; E-mail: [rajeshag@onlysmart.com](mailto:rajeshag@onlysmart.com)

## Sandvik's Safurex for Iran's urea plant



*One of the first high pressure carbamate condensers made in Safurex. Courtesy: Schoeller-Bleckmann Nooter, Austria.*

The high-pressure vessels in the new Assaluehy urea production plant in Iran are being constructed in Safurex steel, a stainless steel developed by Sandvik Material Technology. Developed in cooperation with the leading process system designer, M/s Satmicarbon bv, Holland, Safurex has been used for all high pressure equipment, throughout the stripper, pool condenser, reactor and scrubber. Sandvik Safurex has many advantages over other steel grades for urea service but, in particular, has the ability to passivate at a lower oxygen level. It, therefore, has the key benefit of reducing the level of oxygen content in the process. With the injection of less oxygen in the form of air, there is less inertia in the system, contributing to increased manufacturing capacity. Sandvik Safurex also has the benefit of extremely high strength. *Photograph and information courtesy:* SANDVIK ASIA LTD, Mumbai Pune Road, Pune – 411 012; Tel: 020 – 714 6491; Fax: 020 – 714 5022; E-mail: [steel.india@vsnl.com](mailto:steel.india@vsnl.com) Web: [www.smt.sandvik.com](http://www.smt.sandvik.com)

## Stainless Steel *Minar*



Atop the 30-metre high Salafi Cultural Complex at Vyttila, Cochin believed to be tallest monument in Kerala, stands a *minar* in gleaming stainless steel.

This 8-metre *minar*, made up of stainless steel rectangular tubes, plates and sheets (plain and perforated), was fabricated for the Islamic Cultural Centre. The stainless steel work was done by M/s Ambili S/C/S, Thrissur, Kerala. About 1,000 kg of stainless steel 304 was used for this *Minar* project.

M/s Ambili S/C/S have also fabricated a stainless steel jeep made entirely out of scrap material.

Contact details of the stainless steel fabricator: Mr Dayananda Menon, AMBILI S/C/S, XIV / 766 Kalletumkara PO, Thrissur Dist. – 680 683, Kerala; Tel: 0480 – 2881 656; Fax: 0480 – 2881 542, 2721 326; E-mail: [dayagroup@hotmail.com](mailto:dayagroup@hotmail.com)

## Stainless Steel Pipes from Quality Foils



Quality Stainless Pvt Ltd, the Hisar-based pipe manufacturing company, has borrowed the name **Quality** from its parent group company, M/s Quality Foils (India) Pvt Ltd (a member company of ISSDA). The latter has had decades old distinction of catering to the raw material needs of the stainless steel pipe industry with material from M/s Jindal Strips Ltd.

This experience is now being translated into stainless steel pipe (round, square, rectangular and triangular) making with three precision mills.

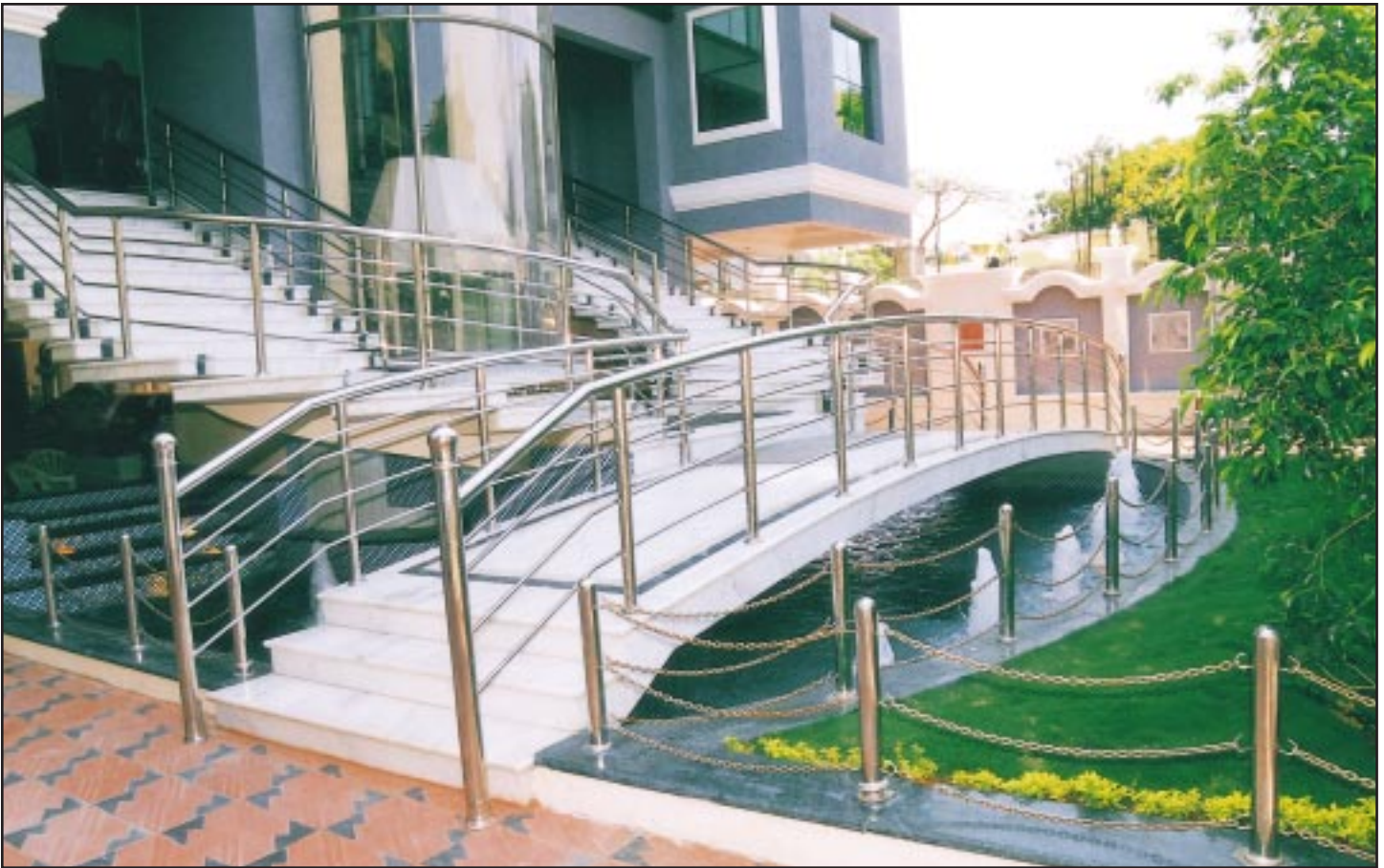
The tubes and pipes are being manufactured with TIG welding mills having online bead rolling, bead grinding, turkhead, die head and cut off facilities. All sizes between 3/8" to 4" NB are undertaken in grades 304, 304L, 316, 316L, 321, 310, 409 and

430 for the sugar, dairy, food, automobile, chemical, refinery and petrochemical sectors.

All pipes are subjected to the dual fired furnace and hydrottested, flared and flange tested to conform to ASTM and other international standards. Well-equipped laboratory, polishing machines and managerial systems consolidate the **Quality**, that the company clearly regards and stands for.

Information and photographs courtesy: Mr Kuldip Bhargava, Managing Director, QUALITY STAINLESS PVT LTD, Nr. 7, Industrial Development Colony, Hisar – 125 005, Haryana; Tel: 01662 – 220 327 / 328 / 329; Fax: 01662 – 220 330; E-mail: [qfield@sancharnet.in](mailto:qfield@sancharnet.in) Web: [www.qualityfoils.com](http://www.qualityfoils.com)

# Stainless Steel for Secunderabad's Ohri Towers



For the Ohri Towers, Hotel Basera Group, located at the Sarojini Road in Secunderabad, top rail, balusters, guard rails totaling about 100 metres in running length in AISI 304 stainless steel have been used. Other items include stainless steel partitions, chain posts, chains. About 2 tonnes of stainless steel have been used for this project. Stainless steel fabrication done by: M/s Sreevatsa Stainless Steel Fabricators (P) Ltd, 1/376, Mugalivakkam, Porur, Chennai - 600 116; Telefax: 044 - 2252 3469 / 2252 3479 / 2252 3489; E-mail: [sreevatsai@hotmail.com](mailto:sreevatsai@hotmail.com)

## *Roughing in half the time* **Magic Disc for Stainless Steel**



Time savings of up to 50 % when compared with conventional discs. That's one of the major advantages of the SUHNER's Magic Disc. This new abrasive makes it possible to rough, grind and finish welded seams in a single step, at high material removal rates. In addition, the new Magic Disc offers about 15 % longer service life. These properties mean immediate savings in labour and materials or, in other words, a 100 % increase in productivity. Moreover, this abrasive is distinguished by quiet, low-vibration operation. While the rounded disc edges prevent inadvertent scratches, it leaves an attractive grinding pattern while producing little dust and noise. Since only minimum pressure is required, the amount of heat induced in the work piece is minimized, thus avoiding warping. The Magic Disc is

## **ISSDA joins International Stainless Steel Forum (ISSF)**

The ISSF Board of Directors elected ISSDA Affiliated Member of the ISSF at their meeting on May 11, 2003 in Berlin.

## **ISSDA Website**

Visit our updated website [www.stainlessindia.org](http://www.stainlessindia.org)

particularly beneficial for working stainless steel and hard facing. When machining turbine blades made of high-alloy nickel steel, it was found that this abrasive works four times as fast as a conventional A24 disc. The discs, 3 mm thick and 100 mm, 125 mm in diameter, are available in 36, 60 and 80 grain versions with a backing pad to lend flexibility. This makes for both a shallow work angle and use in radii. Also available are a rigid 125 mm disc and a 180 mm disc, both 6 mm thick. *Information & photograph courtesy: SUHNER INDIA PVT LTD, Plot No. 235 U2, Bommasandra Industrial Area, Bangalore - 562 158; Tel: 080-783 1108; Fax. 080-783 1109; E-mail: [blroffice@suhnerindia.com](mailto:blroffice@suhnerindia.com)*

## Stainless Steel wire products at Fidelity Investments



Located on the 21<sup>st</sup> floor of the DLF Square, Gurgaon, Haryana, M/s Fidelity Investments' interiors feature a variety of stainless steel work like Baine Marie top, fascia, elliptical handrails, wire rope handrail, furniture items like table legs, poster hanger, magazine rack etc. The interiors were designed by M/s Adrianse Group, New Delhi.



Contact details of the stainless steel fabricator: Mr G S Rathore, KAUSHAL ENGINEERS, 432, Mount Kailash, Tower 2, New Delhi – 110 065; Tel: 011 – 2621 2339, 2628 5581 / 5582, 0-98100 21405; E-mail: [kaushalengrs@indiatimes.com](mailto:kaushalengrs@indiatimes.com)

## Stainless Steel High Tensile Fasteners now available from Kundan

M/s Kundan Industries Ltd, Mumbai, a leading manufacturer of stainless steel fasteners, have now developed High Tensile Fasteners in stainless steel. Until this product was introduced by Kundan, high tensile fasteners were only available in high carbon steels (10B25 and 1541). Routine replacement of carbon steel fasteners by the user on account of rusting is completely done away with because of the corrosion resistance of stainless steel. Because of its corrosion resistance the stainless steel fastener's threads and head remain unaffected for long periods of time and can be reused any number of times.

Grade 8.8 High Tensile Fasteners have tensile strengths in the range of 80-88 kgf/mm square. Kun-80 the stainless steel high tensile fastener developed by Kundan has tensile strength reaching to over 100 kgf/mm square.

The high tensile strength of the Kun-80 fasteners is obtained by exploiting the high work hardening ability of the austenitic modified grade through cold work, mainly due to the presence of high levels of manganese in the alloy. This ensures perfect gauge condition in all the fasteners.

In comparison, the strengthening of carbon steel fasteners is through heat treatment and further plating process to impart corrosion resistance to the surface. These lead to hydrogen embrittlement, which leads to sudden failures of carbon steel fasteners. The plating processes tends to distort the gauge condition of the threads. Both these problems are avoided in the case of Kun-80 stainless steel fasteners.

Stainless steels are well known for their high temperature properties. They retain nearly half their room temperature strength even at 500-600 °C. On the contrary, the mechanical properties of carbon steel fasteners deteriorate rather rapidly at elevated



temperatures. Particularly in the case of automotive fasteners relating to the engine block or other hot zones, failure of carbon steel fasteners can be expected.

Besides these overwhelming advantages of stainless steel high tensile fasteners, the aesthetic appeal of stainless steel is used to advantage by leading motorcycle manufacturers who use Kun-80 fasteners in various applications. The buffed finish on the heads of Kun-80 fasteners match perfectly with the chrome on the handle and other accessories. These fasteners also easily blend with the aluminized engine blocks of motor cycles without the extra process of plating.

Kun-80 high-tensile stainless steel fasteners can replace regular 8.8 grade carbon steel high tensile fasteners in all engineering, automotive and building & construction applications.

Information and photograph courtesy: Mr Krishan Gupta, KUNDAN INDUSTRIES LTD, 252, Yusuf Meharali Road, Mahesh Niwas 2<sup>nd</sup> floor, Mumbai – 400 003; Tel: 0250 – 2455 394 to 398; Fax: 0250 – 2455 830, 022 – 2882 0162; E-mail: [fasteners@kundan.com](mailto:fasteners@kundan.com) Web: [www.kundan.com](http://www.kundan.com)



## Welcoming New Members

ISSDA extends a warm welcome to the *Primary Members* - M/s Rathi Ispat Ltd, Ghaziabad (producer of billets, flats); M/s Rimjhim Ispat Ltd, Kanpur (producer of billets, flats, wire rods, rounds); and to *Associate Members* - M/s AV Alloys Ltd, Hyderabad (producer of electro slag remelted stainless steels); M/s D-Art International, Delhi (architectural fabricator); M/s Merloni TermoSanitari (I) Ltd, Pune (sanitary products);

M/s Process Pumps (I) Pvt Ltd, Bangalore (pumps); M/s Simple Enterprises, Delhi (fabricator of kitchen equipment, furniture etc); M/s Southern Iron & Steel Co Ltd, Salem (producer of wire rods); M/s Surface Innovators, Mumbai (pickling & passivation chemicals); M/s Weldwell Speciality Pvt Ltd, Mumbai (supplier of welding equipment, consumables).

## Rimjhim Ispat Ltd



M/s Rimjhim Ispat Limited has established itself as one of the leading stainless steel producers of the country as per the norms of Indian and international standards. All the stainless steel grades are manufactured through induction furnace AOD-LRF route and the liquid metal is casted through billet caster. The size of the billets available with the company is 120 mm x 120 mm, 140 mm x 140 mm, 130 mm x 170 mm.

The stainless steel grades produced are: austenitic grades like AISI 302, 304, 316 as well

as "L" grades; low-nickel high-manganese austenitic grades like AISI 201, 202; martensitic grades like AISI 410. The above grades are available in rolled form as:

Flat products: cross section 775 square mm to 3600 square mm

Wire rods: diameter 5.5 mm to 22 mm

Rounds: 25 mm to 77 mm

These grades can be supplied in annealed condition also. Great emphasis is laid for quality control. All the billets, flats, wire rods etc are checked for chemical composition, micro structure, inclusion ratings and mechanical tests.

RIMJHIM ISPAT LTD, 123 / 355, Fazal Ganj, Kanpur – 208 012, Uttar Pradesh; Tel: 0512 – 222 4280 / 3140 / 3144; Fax: 0512 – 254 5755, 222 0181

Works: B-22-23, Industrial Area, Sumerpur, Distt Hamirpur, Uttar Pradesh; Tel: 05282 – 231 460 / 183; E-mail: [mail@rimjhimispac.com](mailto:mail@rimjhimispac.com)  
[rimjhim@lw1.vsnl.net.in](mailto:rimjhim@lw1.vsnl.net.in)

## Weldwell Speciality Pvt Ltd

Weldwell Speciality Pvt Ltd – Mumbai, is a ten-year old company engaged in marketing of welding consumables, equipment and related accessories catering to the high-end segment of the Indian welding industry. The company maintains stocks of imported high-tech consumables and equipment for sale in India and are also in a position to facilitate direct purchase, in case the customers would like to import the goods on their own.

Weldwell is an authorized distributor of Inco Alloys, now Special Metal (a welding product company), UK and Kobe Steel, Japan and many other reputed manufacturers from USA, Japan, Finland and Germany.

Weldwell manufactures a special accessory 'stainless steel consumable inserts' of inverted 'T' shape which is used in nuclear power station pipes, where access from inside is not possible and 100% assurance of smooth root fusion is

required.

For the convenience of major users, the company maintains stock of local as well as imported TIG / MIG / SAW / FCAW wires in grades such as 308L / 316L / 308H / 316H / 347 / 347H / 309L / 309MoL / 318 / 320 / 630 / 410NiMo / 383 and 385 etc.

The company is managed by highly qualified technocrats and has carved a niche for itself in the market. A large number of capital equipment manufacturers and contractors rely on them for proper guidance for selection and application of filler material.

Mr C C Girotra, Director, WELDWELL SPECIALITY PVT LTD, 103 / 104, Acharya Commercial Centre, Dr C Gidwani Ro ad, Chembur, Near Basant Cinema, Mumbai 400 074; Tel: 022 – 2551 5523, 2550 3270; Fax: 022 – 2556 6789, 2556 9513; E-mail: [cgc@weldwell.com](mailto:cgc@weldwell.com)

## AV Alloys Ltd



M/s AV Alloys Ltd – Hyderabad, promoted by an IIT Bombay engineer-entrepreneur, is manufacturing advanced electroslag refined tool and special alloy steels including special stainless steels. The plant is geared up to produce sophisticated steels for critical industrial applications / high performance equipment systems used in various strategic sectors viz., aerospace, aeronautics, power generation, petrochemicals, engineering (in particular cutting, forming, moulds and dies). The company is producing high quality steels required in small to medium quantities by adopting proprietary ESR technology and software.

The company is led by its Managing Director, Mr Vikram Daga, who has specialized in the manufacture of special alloy steel through ESR and has considerable laboratory and shop floor experience in the field. Under his supervision, sophisticated ESR units have been designed, installed and commissioned indigenously in record time at AVAL. ESR stainless steels being produced by AV Alloys are approved and are being used by discerning users like NTPC, BHEL, DRDO and several private sector engineering industries making components (*see photograph – Steam Turbine Blades & Components*) for sectors outlined below.

Electro slag remelted stainless steels find wide use in nuclear reactors, power generation, oil & gas, plastic moulds etc. They are used in relatively small quantities to exacting specifications, to fabricate precision parts (*see photograph – liners for copper extrusion press made from stainless super alloy A-286*) subjected to high stresses, fatigue, impact, corrosive environment, friction, abrasion, wear etc. These steels are optimized for specific applications of the user, characterized by narrow analysis range, special additives, ultra low trace elements, low gas content, ultra low sulphur and phosphorus levels, high degree of metallurgical cleanliness, unique combination of properties.

AV Alloys is capable in design and technology to set up superior ESR plants to produce 80 mm to 600 mm dia ingots weighing upto 5 MT. The plant can be supplied with all auxiliaries and metallurgical software required to produce quality constantly. Complete turnkey project based on ESR processing can be offered which will include design, engineering, equipment supply, installation, commissioning, trial runs and performance demonstration at customers' site.

AV ALLOYS LTD, # 457, Road No. 4, Banjara Hills, Hyderabad – 500 034; Tel: 040 – 2354 8186, 2360 7186; Fax: 040 – 2354 3479; E-mail: [daga@hd1.vsnl.net.in](mailto:daga@hd1.vsnl.net.in) Web: [www.avalloys.com](http://www.avalloys.com)



## Simple Enterprises



*About 10 tonnes of stainless steel 304 have been used for the kitchen at the Crown Plaza Surya, Delhi.*

M/s Simple Enterprises – New Delhi, incorporated in 1978, fabricates stainless steel kitchen equipment and has been supplying to various hotels and restaurants in India and abroad. The company has a wide range of equipment covering all the requirements of a modern kitchen, bakery, laundry, house keeping, material handling (trolleys) and health clubs. The company has a variety of machines like press brakes, hydraulic shearing machine, tube bending machine, spot welding machine, argon welding machine, buffing & polishing machine for this purpose.

M/s Simple Enterprises provides consultancy regarding designing of hygienic kitchen layouts to suit every budget. The company has supplied kitchen equipment to Crown Plaza Surya, Delhi (photographs shown above) and to the Domino chain of pizza outlets

(in India and in Sri Lanka) and furniture for the Parliament Library building, Delhi.

M/s Simple Enterprises also undertakes stainless steel pillar cladding, furniture, handrails, signage, canopy, kitchen exhaust hoods etc.

SIMPLE ENTERPRISES, 6604 / 2, Nabi Karim (Neem Wala Chowk), New Delhi – 110 055; Tel: 011 – 2351 8520, 2361 7552, 0-98110 77928 (Mr Sachin), 0-98105 38907 (Mr Pankaj); Fax: 011 – 2361 5450; E-mail: [simpleenterprises@hotmail.com](mailto:simpleenterprises@hotmail.com)

Works: 18 / 13, Site 4, Sahibabad Industrial Area, Ghaziabad, Uttar Pradesh; Tel: 0120 – 289 6189.

## D-Art International



*About 1,155 kg of stainless steel 316L tubes in brush finish have been used for making double-handrails at Delhi's 'Dilli Haat Food & Craft Bazaar', for the benefit of physically handicapped visitors. These handrails have been installed on sloping ramps; a total of 28 such ramps can be found at the bazaar, the length of ramps varying from 3 metres to 21 metres.*

M/s D-Art International – New Delhi, has been in the business of fabricating and installing metal architecture works since 1988. The company's 10,000 sqft area factory at NOIDA near Delhi is well equipped with latest plant and machinery for fabrication of high-precision metal products. The company has cutting machine, slitting machine, crimping machine, milling machine, drilling machine, lathe, shaping machine, besides grinding and polishing machines.

According to the company, it undertakes stainless steel fabrication of furniture, railings & grills, door & window frames, wall & column cladding, partition & ceiling, sky light & dome, space frame & canopy, swimming pool accessories, signages, kitchen cabinets, display

systems for showrooms, hospital accessories.

D-Art has done stainless steel fabrication for projects like the Parliament Library (Delhi), Hotel Leela Beach (Goa), Maharaja International Hotel (Kathmandu), Escorts Heart Institute (Delhi), Nirula's restaurants (at Bali Nagar and Saket in Delhi), cancer wing at AIIMS-Delhi, NBRC (Mansaer, Gurgaon), *Dilli Haat* (Delhi), Grand Hyatt (Mumbai), LG Electronics (Greater NOIDA) etc.

Mr. Vipul Rastogi, D-ART INTERNATIONAL, E-34, Rastogi Complex, Jawahar Park, Near Vikas Marg, Laxmi Nagar, Delhi – 110 092; Tel: 011 – 2243 4052, 2201 7512; Mobile: 0-98183 42503; Telefax: 011 – 2243 4052; E-mail: [d\\_art\\_international@yahoo.com](mailto:d_art_international@yahoo.com)

# mg india

a solvadis group company

- LME BROKERAGE / HEDGING
- NON-FERROUS METALS, INCLUDING NICKEL
- STAINLESS STEEL SCRAPS
- BRASS & ALUMINIUM SCRAPS
- MOLY OXIDE
- PROCESS KNOW-HOW & ENGINEERING  
(for Metallurgical Plants)

**Lurgi  
Metallurgie**  
An Outokumpu Technology Company  
Representative

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**Sempra** Metals Group  
Representative

## ISSDA MEMBERS

### Primary Members

Chandan Steel Ltd  
Ferro Alloys Corporation Ltd  
Haryana Steel & Alloys Ltd  
Isibars Ltd  
Ispat Industries Ltd  
Jindal Strips Ltd  
Mukand Ltd  
Rathi Ispat Ltd  
Rimjhim Ispat Ltd  
Panchmahal Steel Ltd  
Shah Alloys Ltd  
Stainless India Ltd  
Steel Authority of India Ltd  
(Alloy Steels Plant + Salem Steel Plant)  
Viraj Alloys Ltd

### Associate Members

AV Alloys Ltd  
Advani Oerlikon Ltd  
Ampi Agencies Pvt Ltd  
Apex Tubes Ltd  
Arcelor Stainless India  
Bhandari Foils Pvt Ltd  
Bhansali Bright Bars Pvt Ltd  
Bhiwadi Metal Rollwell Pvt Ltd  
Bizcon Business Consultants (I)  
British Super Alloys Ltd  
Cavalier, The  
Choksi Tube Co Ltd  
D-Art International  
Decora Tubes Ltd

Doshi Tubes Pvt Ltd  
Flow Link Systems Pvt Ltd  
Glencore India Pvt Ltd  
Heavy Metals & Tubes Ltd  
Hisar Metal Industries Ltd  
Inco Europe Ltd  
KEI Industries Ltd  
Kamdhenu Ispat Ltd  
Kaushal Engineers  
Kirtanal & Sons  
Krishna Industries  
Kundan Industries Ltd  
M N Dastur & Co Ltd  
Macro Bars & Wires (I) Pvt Ltd  
Merloni TermoSanitari (I) Ltd  
Metallic Bellows (I) Pvt Ltd  
Metco Marketing (I) Pvt Ltd  
Minex Metallurgical Co Ltd  
Modi Arc Electrodes Co  
Nevatia Steel & Alloys Pvt Ltd  
New Era Industries  
Nuclear Fuel Complex  
Ornamental Stainless Steel Pvt Ltd  
Prakash Steelage Ltd  
Process Pumps (I) Pvt Ltd  
Quality Foils Ltd  
Raajratna Metal Industries Ltd  
Rahul Industries  
Rajendra Mechanical Industries Ltd  
Ratnamani Metals & Tubes Ltd  
Rayalaseema Technologies Ltd  
Real Strips Ltd  
Sahu Refrigeration Industries Ltd  
Sandvik Asia Ltd

Sandvik Steel Asia Pvt Ltd  
Shah Metal Industries  
Sharp Engineers  
Simple Enterprises  
Southern Iron & Steel Co Ltd  
Sreevatsa Stainless Steel Fabricators (P) Ltd  
Stallion Systems Pvt Ltd  
SteelRX Corporation Pvt Ltd  
Suhner India Pvt Ltd  
Surface Innovators  
Tata Iron & Steel Co Ltd - FAMD  
Tata SSL Ltd  
Thainox Steel Ltd  
Trivedi Ind'l. & Research Associates Pvt Ltd  
VSL Alloys (I) Pvt Ltd  
Velar Engineering Works  
Venus Wire Industries Ltd  
Vishal Tubes & Pipes Pvt Ltd  
Weldwell Speciality Pvt Ltd

### Association Members

Institute for Steel Development & Growth  
Metal Research Centre  
Nickel Development Institute  
Stainless Steel Rerollers Association

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