

STAINLESS INDIA

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INDIAN STAINLESS STEEL DEVELOPMENT ASSOCIATION, NEW DELHI

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OCTOBER 2003

First fire-proof coach uses stainless steel

The Rail Coach Factory (RCF), Kapurthala rolled out the country's first fire-proof prototype coach on September 21, 2003. Mr Nitish Kumar, Minister for Railways, inaugurated the coach; the Chairman and Members of Railway Board and the General Manager of RCF, Mr M Sirajuddin were also present during the occasion. In a major departure from the design practices, new concepts have been incorporated at various locations in the coach to eliminate likely fire hazards. The fire-proof coach is a 'general' second-class coach which incorporates stainless steel for seats, luggage racks and toilet inlays. ISSDA participated in the inauguration of the fire-proof coach and displayed various stainless steel products and technical literature on the fire-resistance of stainless steel.

Seats and transverse luggage racks:

Existing arrangement: Seats of mild steel (MS) frame with

compreg batten to RDSO specification C-9407 on the top are being used in existing General Second class (GS). Though the MS frame is totally fire proof, the fire retardency of compreg batten is not very good. Moreover, paint provided on the MS frame also helps in spreading the fire.

Modified arrangement: Perforated stainless steel sheets have been used for manufacturing the seats. The lower luggage rack and longitudinal luggage racks have been manufactured with stainless steel tubes and rectangular sections. To avoid the use of paint, seats / luggage racks have been given brush finish to improve the aesthetics. Seats and luggage racks have been developed in consultation with ISSDA.

Lavatory floor:

Existing arrangement: PVC sheet of 2 mm as per RDSO

>> Contd. on page 2



A close-up of the seats made of perforated stainless steel sheets.

Indian Stainless Steel Development Association

K - 36 (FF), Hauz Khas Enclave, New Delhi - 110 016. Tel: +91 11 2686 5631, 2686 3389;
Fax: +91 11 2686 3376 E-mail: nidissda@del3.vsnl.net.in Web: www.stainlessindia.org

>> Contd. from page 1

Spec C-8515 is being used for the floor over FRP inlay. On the application of heat, PVC emits toxic fumes.

Modified arrangement: PVC to spec MDT5-136 has been developed for fireproof GS coach. Norms like smoke index, toxicity index, oxygen index, surface spread of flame and chlorine evolution has been specified in this specification. The newly developed PVC has been tested and it has been found that there has been tremendous improvement in fire retardancy behaviour of the new PVC as compared to the conventional

PVC. Besides, there is negligible smoke emission from PVC when exposed to fire. Stainless steel inlay has been used in the lavatory and the above-said PVC is pasted over the inlay.

A second prototype fire-proof coach is being developed at the RCF. The Integral Coach factory (ICF), Chennai is also developing a fire-proof coach at its premises.

Source: Rail Coach Factory, Hussainpur, Kapurthala – 144 602, Punjab.



StainleSStyle in Bangalore !

M/s Velaar Engineering Works Pvt Ltd, Bangalore have opened India's first exclusive stainless steel furniture show room at K H Road (Double Road) in Bangalore. Named as "StainleSStyle", the show room has the largest range of the finest customized stainless steel furniture, including complete range of fittings to furnish homes and workplaces – ranging from cots, tables, chairs, bar stools, dressing tables, shelves, TV cabinets to lampshades, wash basins and kitchen cabinets.

Velaar Engineering has more than two decades of experience in fabricating stainless steel. At StainleSStyle, this is combined with premium quality AISI 304 grade stainless steel, to create the most enchanting designs requiring no maintenance. Furniture in both glossy- and brush-finished stainless steel are available.

Velaar Engineering also fabricates railings, wall & column cladding, canopies as per design.

StainleSStyle, VELAAR
ENGINEERING WORKS PVT LTD,
63 (Old No. 49 / 1),
K H Road (Double Road),
Bangalore – 560 027;
Tel: 080-511 42444 / 555;
Fax: 080-511 42666;
E-mail: contact@stainlesstyle.com
Web: www.stainlesstyle.com

Stainless steel tubes have been used for various furniture items. A dining table (above right) and an office reception table (right) are some of the many elegant furniture items on display at the StainleSStyle show room.



Directory of UK Stainless Steel Stockholders

The 18th, Summer 2003 edition of Stainless Steel Focus directory of UK stainless steel stockholders is now available. In addition to UK stockholders/service centres, this edition includes, in separate sections, processors of stainless steel, manufacturers of finished stainless steel products, and equipment/consumables suppliers. The directory consists of 300 entries of companies active in the UK stainless steel sector and is organized on a broad geographical

basis for ease of use. An alphabetical listing of companies can be found at the back of the directory. A buyers' guide is included. The standard price of the directory is still only UK pounds 35/US\$ 60 (including postage & packing). The directory can be ordered from Alloy Metals & Steel Publications, PO Box 106, Frampton Fen, Boston PE20 1SE, UK; or Fax: +44 1205 365080; or Email: amspublications@boltblue.com

New Chairman for SFAI

At the 38th Annual general Meeting of the Steel Furnace Association of India (SFAI) held in New Delhi on September 4, 2003, Mr N C Mathur, Director, Jindal Stainless Ltd was elected Chairman and Mr R K Kapur, President, Usha Martin Ltd as the Vice-Chairman.

SFAI's membership covers all grades of steel ranging from mild steel, high carbon steel, stainless steel, alloy steel and very high value added special steel. SFAI is organizing an international secondary steel conference on January 22-23, 2004, at Delhi.

ISSDA's Annual Technical Session



Mr J P Singh, Joint Secretary, Ministry of Steel, Govt. of India in the centre. To his left is Mr N C Mathur, President-ISSDA and to his right is Mr Ramesh R. Gopal, Executive Director-ISSDA.



A section of the audience.

ISSDA organized its Annual Technical Session on September 5, 2003 in Delhi. The session was an opportunity to update the usage of stainless steel amongst the end-users in various segments of the Indian industry like architecture, building and construction (ABC) and the automotive, railway and transportation (ART). The technical session highlighted the opinions and perspectives of various end-users who have benefited by using stainless steel. In his welcome and introductory address, Mr N C Mathur, President ISSDA, gave an overview of the growth of the stainless steel industry in India and the future of stainless steel in the national and international markets.

The technical session began with Mr Jose Kurian, Chief Engineer, Delhi Tourism & Transportation Development Corporation Ltd, who gave a presentation on the structural use of stainless steel for the Focal Dome and the VIP Dome in the Parliament Library building.

Mr H.S Dogra, Chief Engineer, Central Public Works Department (CPWD), talked on the use of stainless steel for the upcoming

50-metre tall National Police Memorial in Delhi where the arches and the globe will be clad in stainless steel.

Mr Divya Vikas, Chief Engineer, Rail Coach Factory, Kapurthala, gave an overview on the increasing trend in the use of stainless steel in railway coaches in the country. In his presentation he highlighted the advantages of stainless steel railway coaches - a long track record of excellent performance abroad, being cost effective requiring minimum maintenance.

Mr J P Singh, Joint Secretary, Ministry of Steel, Govt. of India, who was the chief guest for the event, appreciated the efforts made by ISSDA in promoting the use of stainless steel in a variety of new applications and assured continuing support from the ministry. He eulogized the objective of this annual event, which was to bring awareness of the advantages of stainless steel closer to the minds of designers and the end-users. He also suggested active participation of ISSDA in the JPC Pavilion at the trade fair this year.

A display of various stainless steel products was also organized; over 120 people attend the event.

Special Meeting of ISSDA



from left to right: Mr Rajendra V Shah, Vice President-ISSDA; Mr Braja Kishore Tripathy, Minister for Steel, Govt. of India; Mr N C Mathur, President-ISSDA; Mr V K Duggal, Secretary-Steel, Ministry of Steel, Govt. of India; Mr S N P Singh, Executive Director, Salem Steel Plant-SAIL.



A section of the audience.

The developments and concerns of the stainless steel industry were raised at a Special Meeting organized by ISSDA on September 30, 2003. The Minister for Steel, Mr Braja Kishore Tripathy and the Secretary-Steel, Mr V K Duggal were the honoured guests besides ISSDA member company representatives and senior officers from the Ministry of Steel. This meeting provided a platform for the members to elaborate the progress made by the stainless steel industry in the recent past. It also gave an opportunity to address some of the concerns of the stainless steel industry such as evaluation of tenders for coin blanks, the incidence of import duty on nickel and such other issues.

In his address, Mr Duggal said that the issues raised by ISSDA require immediate attention and the government would continue to play the role of a proactive facilitator. Stainless steel production in India, starting with a modest beginning at less than 100,000

tpa, has come a long way with the production crossing 1.2 million tpa in 2002-03, representing a share of 6% out of a total global steel production of 21.5 million tonnes. India today finds itself in the elite 'million tonne club' and occupies the 8th position in stainless steel production, he added.

In his key note address, Mr Tripathy said that the statistics show that the performance of the stainless steel sector has been better than the steel sector. "Despite all odds, the Indian steel producers, especially in the stainless steel sector, have bravely faced the global competition to create records as demonstrated by their excellent all round performance in 2002-03."

A display of various stainless steel products was also organized during the occasion; about 100 people attend the event.

Both the print and the electronic media covered the event.

Water Heaters in Stainless Steel



'Racold' brand water geysers (bottom left) and its stainless steel inner tanks (above) made by Merloni TermoSanitari (I) Ltd, Pune.



Stainless steel water heaters are increasingly becoming popular in India. Stainless steel is being mainly used for the inner tanks and sometimes for the outer body. Stainless steel has many advantages over other competing materials for the inner tank vessels.

The Indian market for water heaters is around 8,00,000 pieces per year with some of the leading brands such as Racold, Bajaj, Usha, Venus, etc in the organized sector. Leading the group is Racold with about 1,50,000 pieces per year followed by Bajaj with 1,25,000 pieces. Other than these, there are many small-time players operating in the unorganized market.

Merloni TermoSanitari, the makers of Racold brand, also make stainless steel inner tanks for electric and solar water heaters and stainless steel kitchen hoods (see page 10).

(Information courtesy: Industry sources)



Coloured stainless steel exteriors of the 'Cascade' brand.

Attributes	Stainless steel	Copper	Glass lined	Galvanised steel
Tensile strength	Very high	Low	Moderate	Moderate
Thermal conductivity (heat loss)	Very low	Very high	Very low	Low
Surface finish	Very good	Poor	Good	Good
Corrosion resistance	Very high	High	Moderate	Low
Sacrificial anode (service intensive)	Not required	Not required	Required	Required
Weight	Low	High	Very high	Very high
Recyclability	High	High	Moderate	Moderate

Stainless Steel and Drinking Water

The compatibility of stainless steel with drinking water has now been proven by tests performed in various countries and the existence of a number of regulatory documents.

As further confirmation, consideration can also be made of the tendency shown by domestic taps producers to resort increasingly to stainless steel as an alternative material to the traditional type (chromed brass) to ensure respect for the quality of the water (no release of heavy metals, for example lead). Graph no. 1, which shows the number of stainless steel tap producers as from 1996, indicates clearly the importance of this trend.

The illustrations show the result of the experiment by a producer who, in addition to the hygiene aspect, has unquestionably focused a great deal on design of the parts made in stainless steel throughout, namely EN 1.4301 (AISI 304). These taps for the kitchen and bathroom, produced by casting, which were subjected to the tests laid down by Ministerial Decree of 21 March 1973 of Italy, in order to check on possible release of chromium and nickel. The results have once again confirmed the perfect behaviour of stainless steel: the values recorded were ten times lower than legal limits.

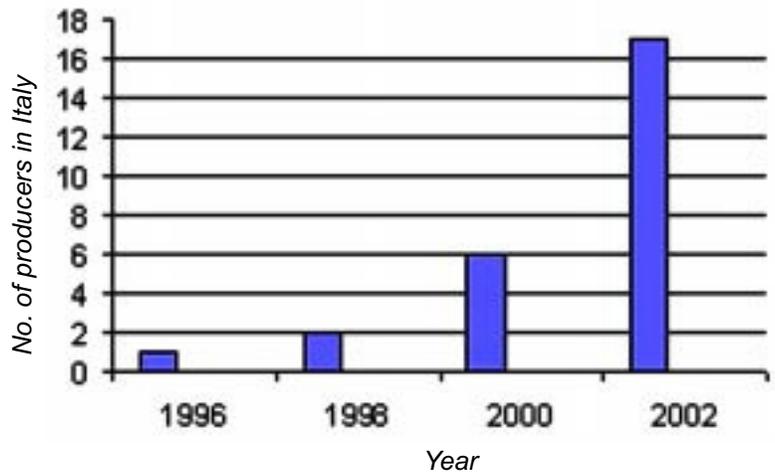
Taps produced by: Quadro S.r.l, Via A.De Gasperi 2, corner via Roma, I-28017 San Maurizio d'Opaglio NO, Italy; Tel: 032.2950227; Fax: 032.2950234; E-mail: info@quadrodesign.it Web: www.quadrodesign.it

(Information and photographs courtesy: INOSSIDABILE 152, Edited and published by Centro Inox (Italian Stainless Steel Development Association), Piazza Velasca, 10 – 20122 Milano – Italy; Tel: 02.86.45.05.59, 02.86.45.05.69; Fax: 02.86.09.86; E-mail: centroinox@tin.it Web: www.centroinox.it



Police Memorial – update

Work on the National Police Memorial being built in Chanakya Puri, New Delhi is progressing. M/s Nagarjuna Construction Co Ltd has been given the main contract for this project. The stainless steel work has been given to two companies recommended by NiDI-India: M/s Sreevatasa Stainless Steel Fabricators, Chennai have been given the contract of cladding the arches. M/s Stallion Systems Pvt Ltd, Bangalore are responsible for the globe's design, fabrication and cladding with coloured stainless steel sheets.



Stainless Steel becoming popular in God's Own Country !



Kerala, popularly referred as God's own country, is witnessing a steady progress in the usage of stainless steel for architectural applications. The June 2003 issue of STAINLESS INDIA featured a stainless steel *minar* fabricated for the Islamic Cultural Centre by M/s Ambili S/C/S. Two more works of the fabricator are shown here:

Holy Cross

A 2.5-metre tall Holy Cross has been erected on a 40-metre bell tower of St. John's Cathedral at Thiruvalla, Kerala. The Cross is made of 18gauge AISI 304 sheet weighing 73 kg and is reinforced with 25x25x6 mm angles weighing 38 kg. The three ends and the bottom base have been hand fabricated. The 'flower' (65 cm diameter) fitted at the centre of the Cross, both in the front and

the back, with gold plating on AISI 316 sheet, have also been hand-fabricated. The fabricator is now working on a 5-metre Cross, in gold coloured designer sheet, which will be fitted on a 30-metre cathedral.

Fountain

A single 50-mm diameter stainless steel tube has been used to create three different types of pressure points at the fountain in Caramel School, Chalakkudy. The fountain with a circumference of 20 metres, has 240 stainless steel nozzles. The outer most jet can throw water up to a height of 8 metres.

Stainless steel fabrication by: Mr A D Menon, AMBILI S/C/S, Kallettumkara PO – 680 681, Distt Thrissur, Kerala; Tel: 0480-288 1656, 288 0061; Mobile: 0-98470 56646; Fax: 0480-288 0061.

Welcoming New Members Bansal Wire Industries Ltd

Bansal Group, a modern business system was established as a wire-trading house in 1938. Under the able guidance of Mr Shyam Sunder Gupta as Chairman and the dynamic leadership of Mr Arun Gupta as Managing Director, the business continues to grow. The group has outgrown into seven units in and around Delhi.

Incorporated in 1985, M/s Bansal Wire Industries Ltd (BWIL) is an ISO-9002 company. Starting with the production of HB wires, the company has been rapidly and consistently adding to the product mix to cater to the needs of customers belonging to various segments. Today, BWIL is one of the leading producers of steel wires in the country, manufacturing stainless steel wires, high carbon / medium carbon wires (galvanized and black), cable armoring round and formed wires, galvanized mild steel wires, HB and HHB wires, profile wires in all grades.

BWIL manufactures stainless steel wires in sizes ranging from 0.036 to 10 mm in AISI

200, 300 and 400 series. It offers wires in soft, ~ hard, ° hard and full hard in different finishes like bright / dull, depending on the requirement of the buyer.

Stainless steel wires manufactured by BWIL are used to manufacture automotive products, balls & taper roller bearings, braided hoses, chains, conveyor belts, filters, free cutting wires, fasteners & wire nails, flexible connectors, kitchenware and gadgets, MIG & TIG welding needles, pins, sleeves, spokes, springs, surgical equipment, screens, scrubber / scouring pads, steel wool, utensils, woven knitted wire cloth, wall ties & tying wire, wire ropes, welding electrodes & fillers etc. Stainless steel wires find application in a wide array of industries including engineering, chemical, construction, automobile, aerospace, medical, petrochemicals, electronics, marine and domestic products.

The products are made with strict adherence to global quality standards using state-of-the-art equipment. As a result, Bansal Group is being acknowledged both in the country and abroad as well. Owing to the unremitting improvement in technology, product



innovations and also due to large scale manufacturing facilities, the company is one of the most preferred sources of procurement.

BANSAL WIRE INDUSTRIES LTD,
F-3, Shastri Nagar, Delhi – 110 052;
Tel: 011-2365 1891 / 92 / 93, 2364 8401,
5515 7568; Fax: 011-2365 1890;
E-mail: info@bansalwire.com
Web: www.bansalwire.com

Magppie Exports



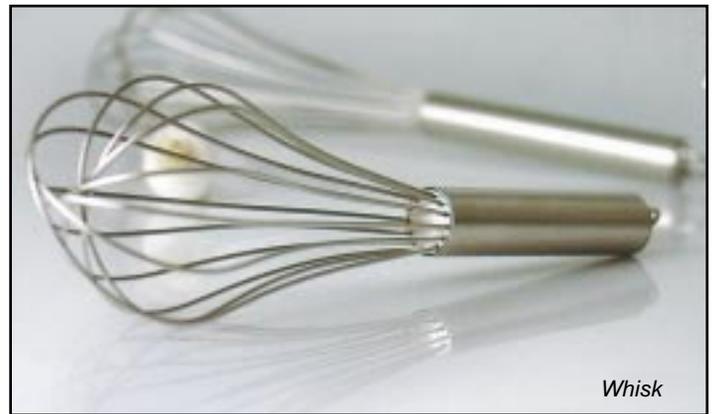
Colander



Bottle opener



Kettle



Whisk



Letter opener

Magppie Exports is a Govt. of India recognized Export House having an ISO 9001-2000 certification and is exporting its products to almost 35 countries to the best names world over. The company is having one of the most modern plants producing general and creative stainless steel utensils in the range of kitchenware, tableware, tabletops, bar accessories, pots & pans and other household articles.

Magppie is a well-known name as a manufacturing company with facilities spread over in an area of 60,000 square feet on national highway Kundli industrial area which is 12 km from New Delhi; another 150,000 square feet area is being added for its manufacturing facilities. Apart from the offices in the UK, Italy, China and the UAE, the company is also shortly opening an office in the USA.

Magppie group has three decades of experience in this sector. The group has competent and well-qualified staff and engineers whose mission is customer satisfaction, quality control, cost reduction and product innovation. Rigorous efforts in R & D have resulted in a compact range of stylish and functional products, which makes the company distinct from the others. The endeavour of its designers is to make life aesthetically pleasing and easy by keeping in mind contemporary themes as well as futuristic requirements.

Magppie is the first company in India which has been awarded the exalted "Red Dot Award", an award given for magnanimous designing excellence and afforded to best designer by the "Red Dot Association", Germany. Recently, Magppie was selected for "World Quality Commitment International Star Award" having its

celebration at Paris in 2002. Star award is given for the first 100 entries from 76 countries that make quality products as per international specifications. Magppie is the second such recipient in the country. The award is sponsored by Business Initiatives Directions (BID).

Overwhelming response from the domestic market in the very first year i.e., 2002-03 has been very encouraging, touching Rs 5 crores. The domestic sales target has been set at Rs 20 crores for the current year 2003-04 covering all the chains of big departmental stores numbering to 150, throughout India. Export turnover for the current year has been projected Rs 100 crores against Rs 32 crores in the year 2002-03. This has been achieved by incessant work done by the marketing team. The company is also expanding the manufacturing facilities in a big way at Delhi and Mumbai.

Works: MAGPPIE EXPORTS, 215 HSIDC Industrial Estate, Kundli, Distt Sonapat, Haryana; Tel: 0130-221 9901 to 9908; Fax: 0130-221 9909 / 9910; E-mail: sulekh@magppie.com

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Merloni TermoSanitari (I) Ltd

MTS Worldwide:

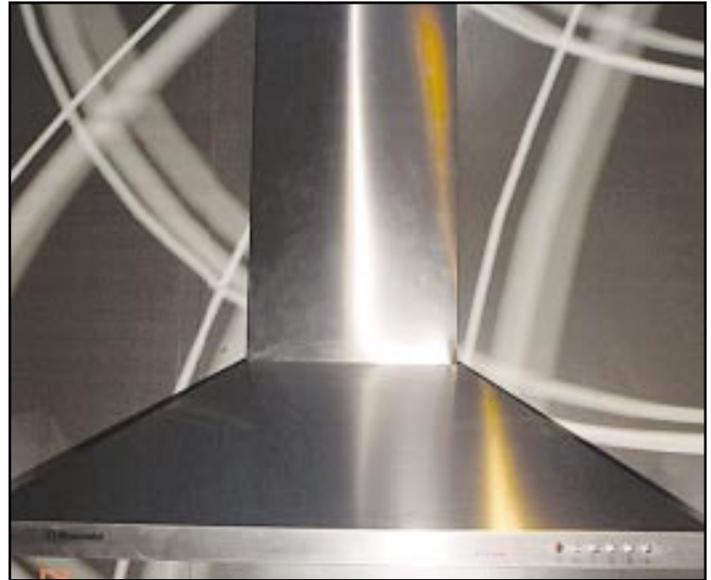
Merloni TermoSanitari SpA, Italy, is an acknowledged world leader in the manufacturing and marketing of water and space heating systems and their components. The Group has a turnover of ₹ 1 billion, employs 6300 people worldwide and manufactures 5.5 million products annually. With manufacturing units in 18 countries worldwide, 19 brands and a global presence in 150, the MTS Group is operated through 4 product divisions, these being domestic boilers, electric and electronic components, commercial boilers, heating systems and services.

MTS India Limited:

Merloni TermoSanitari (India) Ltd. is a wholly owned subsidiary of Merloni TermoSanitari SpA, Italy. The Indian operation includes India's largest and singular fully integrated water heater plant. The plant located in Chakan, near Pune, Maharashtra has been operational since March 1999.

The stainless steel inner containers (see page 6) are manufactured in this facility using micro plasma-TIG welding process and are highly corrosion resistant and long lasting. The Indian plant is the only facility in the MTS Group that manufactures and exports water heaters with stainless steel inner containers to other parts of the world. All critical components (thermostat, heating element, safety valve etc) are sourced from the company's Italian plants. The Indian operation is in conformance to MTS Group's high standards, which are closely monitored by the Group's core team from Italy and caters to the demand of such products all over the globe.

With its state-of-the-art technology, the impressive range of water heaters produced here offers the consumer the latest in aesthetics, efficiency in performance, and a high level of safety and reliability.



Kitchen hood

Today with **Racold** and **Ariston** as its flagship brands, MTS India commands a market share of 34% and is the largest manufacturer and seller of water heaters in India. The water heaters carry the prestigious CE, IEC and IP 25 (splash proof) certifications and are being exported as premium products to South East Asia, South Asia, Middle East, Africa and East Europe.

MERLONI TERMOSANITARI (I) LTD, Chakan-Talegaon Road, Chakan, Pune – 410 501, Maharashtra; Tel: 02135-253 593-97, 252 923, 253 027; Fax: 02135-253 966, 251 025; E-mail: p.bhattacharya@mtsil.com

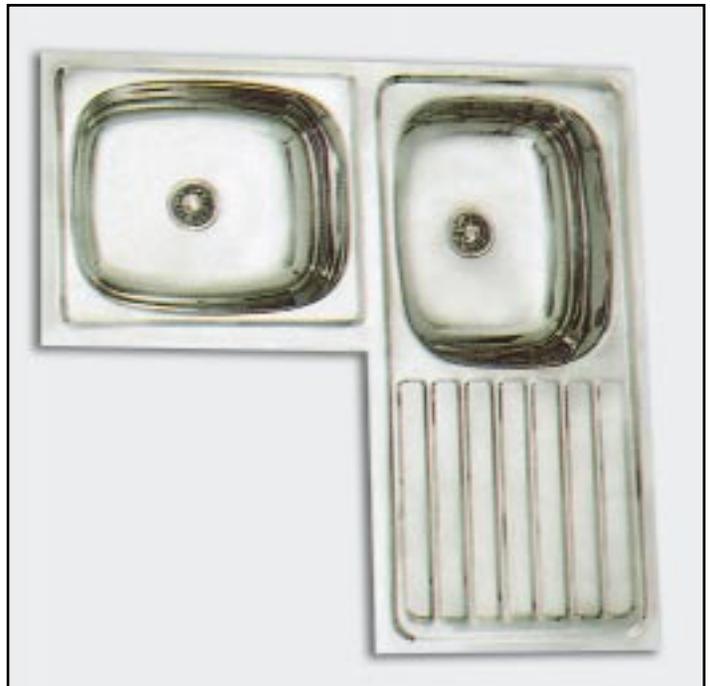
Pheonix Appliances Pvt Ltd

M/s Pheonix Appliances Pvt Ltd, Mumbai are engaged in the fabrication of stainless steel kitchen sinks under the 'Diamond' brand. The company started its manufacturing activities in 1985 with three designs of sinks but now they have the widest range comprising of 28 models in 86 different sizes. 'Diamond' sinks are made in India with German technology and in technical assistance and agreement with M/s Blanco GmbH, world leader in kitchen sinks.

Pheonix Appliances Pvt Ltd has three presses of 500 tonnes each and one press of 350 tonnes for the fabrication of its sinks in addition to nine presses from the capacity of 15 tonnes to 150 tonnes. The company designs and develops all the sinks at their premises which is equipped with complete tool room facility. According to the company, it is the best sink manufacturer as they use only AISI 304 grade of stainless steel; on specific requirements AISI 316 grade is also used.

'Diamond' are functional, practical, attractive, convenient and are made of high quality AISI 304 grade stainless steel. According to the company, the stainless steel sinks meet the demand of both the smart housewives and professional chefs. The bowls are large and extra deep to hold bulky kitchen utensils. The sinks can be easily fitted on all types of the work tops like granite, wood, tiles, marble or metal. A sloping drainboard ensures easy drainage of water in the sinks; special coupling is provided to stop hot or soap water.

'Diamond' sinks come in satin or matt finish, which are non-rusting, easy to maintain, hygienic and are safe for food stuff. Various types of kitchen sinks like round sinks, rectangular sinks, sinks with drainboard, sinks with one & half bowl, double bowl sinks, corner



sinks etc are available to suit varying needs and tastes. The company also fabricates stainless steel wash basins.

PHEONIX APPLIANCES PVT LTD, 405 Ashirwad Building, Ahmedabad Street, Carnac Bunder, Mumbai – 400 009; Tel: 022-2374 6407, 5633 2479; Fax: 022-2377 8964; E-mail: pheonix@bom5.vsnl.net.in Web: www.diamondsink.com

Process Pumps (I) Pvt Ltd

M/s Process Pumps (I) Pvt Ltd, Bangalore is engaged in the manufacture of corrosion resistant pumps. The company's focus is in two distinct areas: (a) development of appropriate pumps to suit different site conditions and to ensure that there is no leakage of pumping fluid which causes material loss and environmental hazard and (b) development and manufacture of varieties of exotic corrosion resistant metals and non-metals to handle corrosive fluids; this enables the pumps made out of the selected material to perform in a reliable and sustainable way.

The material of construction for pumps include Hastelloy B & C, Alloy-20, various grades of stainless steel, cast steel, HV-9, Monel & Inconel, CD 4M-Cu, Nickel (CZ-100), high Ni-Mo special alloys, special bronze, Ni-resist, high silicon iron and non-metals. The main usage of stainless steel is in the form of castings in various grades such as CF-8M, CF-8, CF-3M, CF-3, CF-20. In addition to these, rods, pipes and hardware in AISI 316 are also used. The company has the necessary infrastructure like induction furnace, heat treatment furnace and machine shop, for casting and machining of the pump components. In meeting the above, the company has developed four different types of pumps: (1) horizontal back pull out pumps, (2) vertical glandless pumps, (3) vertical sump pumps and (4) custom built pumps in different materials of construction.

The company's R & D effort is a continuous process with a wide product range well accepted by Indian industries. The Department of Scientific & Industrial Research (DSIR), Govt. of India has approved the company's in-house R & D



unit. The company is an ISO-9001 certified organization, which assures that the manufacturing processes are streamlined to offer products which derive customer satisfaction.

PROCESS PUMPS (I) PVT LTD, Plot No. 86, Phase 3, Peenya Industrial Area, Bangalore – 560 058; Tel: 080-839 5327 / 5328; Fax: 080-839 5807; E-mail: ppil@satyam.net.in

Swastik Foils-A division of Saw Pipes Ltd

M/s Swastik Foils, New Delhi (a part of the Jindal organization) specializes in the manufacture of thin and ultra-thin gauges of cold rolled stainless steel high precision coils. The division has taken rapid strides in meeting stringent requirements for a diverse set of industries including filter (chemical / general), optical fibres, capillary tubes, flexible hoses, shims, gaskets, automobiles, thermowares and utensils.

The concept of better quality and better products is embedded in the organization. To carve a niche in the global market for extra thin stainless steel strips, it has been the company's endeavour to provide the highest possible level of services to their customers worldwide.

According to the company, its products have found wide acceptance in the markets of South East Asia, USA and Europe where the company's thin and extra thin cold rolled stainless steel foils are primarily used in structured column packing, optical fibre cables, flexible hoses, watch parts and high precision electronic industries.

Among others, the company's products are also being used by the following organizations: Sulzer, Kotech-Glitch, Milton, Titan, Nagreeka Foils.

The company has 20-Hi Sendzimer mills and 2-Hi skin pass (upto 0.08 mm)



mills. The slitting width ranges from 3 mm to 610 mm and thickness ranges from 0.06 mm to 0.7 mm. The coils are available in 2D / 2B / BA finish. The production unit is ISO-9002 & 14001 certified.

SWASTIK FOILS, A division of Saw Pipes Ltd, 28 Najafgarh Road, New Delhi – 110 015, Tel: 011-2511 1838 to 1845; Fax: 011-2546 3677; E-mail: sumit@swastikfoils.com Web: www.swastikfoils.com

Indian Ferro Alloy Producers' Association

The Indian Ferro Alloy Producers' Association (IFAPA) is an apex body representing manufacturers of Bulk and Noble Ferro Alloys in the country. It was registered under the Companies Act 1956 in May 1961. The company was promoted by five producers of Ferro Alloys who are Founder Members. At present, the Membership is 27. It has five categories of Membership: Founder, Patron, Ordinary, Associate and Honorary Members.

The Association has been promoting, protecting and watching over the interest of the industry; bringing together and promoting cooperation amongst Ferro Alloy Producers in India; maintaining uniformity in the rules and regulations and usages of the industry; making representations to Union Government or any State Government or Government of any foreign country to remove the difficulties of the Member-Producers; taking steps for promoting and supporting the economic interest of the industry and those engaged

in the industry, etc.; collecting and circulating statistics and other information relating to the industry; communicating with Chambers of Commerce and other mercantile and public bodies in India or outside India and to concert and promote measures for the protection and advancement of the Industry.

The Industry's present capacity is over 1300 MVA. The products covered are: Manganese Alloys (HC, MC and LC Ferro Manganese and Silico Manganese), Ferro Silicon, Chrome Alloys (HC, MC & LC Ferro Chrome, Silico Chrome and Charge Chrome), Noble Ferro Alloys (Ferro Molybdenum, Ferro Vanadium, Ferro Tungsten, Ferro Silicon Magnesium, Ferro Boron, Ferro Titanium, etc.

Mr T S Sundaresan, Secretary General, INDIAN FERRO ALLOY PRODUCERS' ASSOCIATION, 1-B, Haji Moosa Patrawala Industrial Estate, 20, Dr. E. Moses Road, Mahalaxmi, Mumbai – 400 011; Telegram: FERROMAKERS; Telefax: 022-24962755; E-mail: ifapa@vsnl.net

Tree sculpture at the Garden of Five Senses



The Garden of Five Senses is a space with a variety of activities, inviting public interaction and exploration. The project, developed by the Delhi Tourism & Travel Development Corporation, was conceptualized to answer to the city's need for leisure space for the public, for people to socialize and unwind. The project is designed to stimulate one's sensory response to the environment. An amalgamation of **colour** and **fragrance, texture** and **form** evokes the awareness of **touch, smell, sight, sound** and **taste**. On a rocky bridge to the north of the food court in the Garden, is the Trail of Fragrance. This has large range of fragrant trees and shrubs. At the end of trail, elevated amongst the rocks, is a sculpture in stainless steel by Dr. Subodh Kerkar. This piece, inspired by a 'pinwheel', is a tree where the 'stem', 'branches' have been made by stainless steel tubes. 'Flowers' are made out of stainless steel strips mounted on bearings. A gentle breeze makes the 'flowers' rotate which is a pleasing sight to watch. The Garden of Five Senses is located at Said-ul-Azaib village, close to the Mehrauli Heritage area in Delhi; the proximity to the Qutab Minar is an advantage for visibility of the project.

New Members: The Rail Coach Factory, Kapurthala and Architectural Division of Jindal Stainless Ltd, New Delhi (architectural fabricator) have joined ISSDA as Associate Members; their company profiles will appear in the next issue of STAINLESS INDIA.

STAINLESS INDIA wishes its readers a Very happy and Prosperous 2004 !

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