

STAINLESS INDIA

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**Indian Stainless Steel
Development Association**

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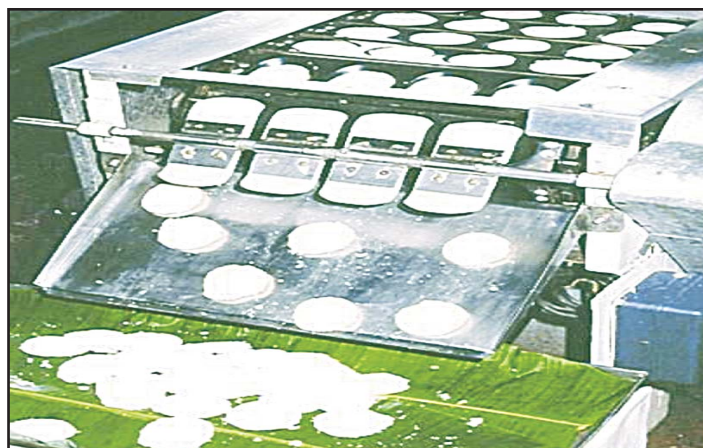
JUNE 2007

Innovation in Idli, Dosa and Chapati machines at CFTRI, Mysore

Break through in conventional cooking machines for Indian Dishes.
Large capacity, hygienic, rugged machines developed



Automatic Loading End



Idli Making Machine

Delivery End

There are many occasions when food needs to be served for hundreds / thousands of people at the same time, within a short span. Serving food in industrial canteens, where thousands of workers rush to the canteen during lunch break or in a mess at Army battalion or hostels / hotels or other mass feeding centers like Gurudwaras, or largely attended marriages etc., is always a very big challenge.

With the growing demand for large capacity, hygienic and fast food processing machines mainly for commercial catering institutions, the Central Food Technological Research Institute (CFTRI), Mysore has taken the initiative and developed such machines. Now, some traditional foods like *Idli*, *Dosa* and *Chapati* can be produced in large-scale to serve a large number of people. The machines designed and developed at CFTRI can produce upto 1200 *Idlis* / hr, 400 *Dosas* / hr and 1600 *Chapatis* / hr.

Idli making machine

Idli is a low fat, starchy and nutritious breakfast food. Steamed *Idli* contains about 3% protein, 20% carbohydrate and 65-70% moisture. Presently, largescale production of *idli* is carried out in batch compartmental steaming units. This conventional method requires manual handling of batter, *idli* and the cloth (used between the pan and batter), making it an unhygienic processing system.

The CFTRI patented design has a stainless steel tunnel in which a conveyor with non-sticky (teflon coated) stainless steel pans holding the batter travel. It consists of an automatic batter dispensing unit, a

mechanical scooping arrangement to remove *idlis* from the pan and an automatic cleaning-in-place (CIP) system with electronic control system for temperature control, batter dispensing and counting of *idli*. All the mechanical parts wherever food material comes into contact are made of stainless steel Type 304.

Automatic Continuous Idli Making Machine Specification

- Capacity : 1200 *Idlis* / hr.
- Sensor-based Automatic Deposition
- Synchronized Mechanical Scooping System
- Cleaning-In-Place (CIP) System
- Electronic Counter
- Hygienic and untouched by human element
- Final Product of Uniform Quality

Dosa making machine

Though they are more popular in South India, *dosas* in general are considered as a delicacy all over the country and there is a gradual increase in liking for *dosas* along with *chapathis* (leavened Indian bread).

The device designed and developed is for various operations involved in dosa preparations such as: batter spreading, cooking / baking, oiling, curry dispensing etc. Geometrical shapes obtained, are of uniform dimension and obtained in a continuous / intermittent manner. The batter employed could be rice, urd dhal, sooji, etc or a combination of the above. Based on the concept of spreading on a revolving hot plate, a device to produce *dosas* is proposed for the

first time. The machine has a capacity to produce 400 dosas/hr.

This machine will help in reducing manual labour and drudgery, improving **hygiene** and **enhance uniformity** in quality and quantities. All the parts of the machine (except hot plate) are made of stainless steel of different grades. The machine is covered by 3 Indian patents.

Chapati making machine

Central Food Technological Research Institute (CFTRI), Mysore has designed and developed another machine for various operations involved in Chapati preparations.

Technical specifications

Capacity: 1600 chapatis/hr with a size of 180/185 mm dia x 2 mm thick

- Dough making machine (Planetary mixer) – All contact parts

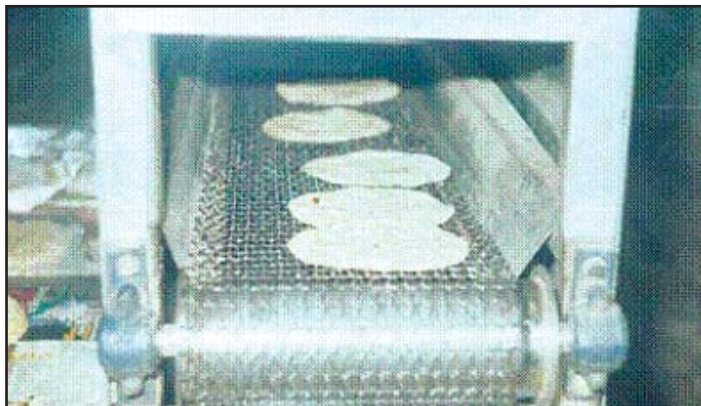


Dosa making machine

including vessel and blade of food grade stainless steel

- Feeder – made out stainless steel screw conveyor
- Extruder unit – made out of stainless steel, with necessary auxiliaries
- Stainless cutter unit .
- Food grade belt with roller adjustment and electrical panel boards
- Baking unit – made out of stainless steel structure and guards. M.S. slat conveyor and stainless steel chain.

The list of licensees/manufactures of the above mentioned machines are available with us. For more details contact : Dr KSMS Raghavarao, Head, Department of Food Engineering, CFTRI, Mysore – 570 020, Tel. No : 0821 – 2513910, Fax No : 0821 – 2517233, Email : fed@cftri.res.in



Chapatis under cooking in the baking oven

Stainless steel production to grow further – but at a slower rate

Table 1: Stainless and heat-resisting crude steel production (in '000 metric tons)

Region	2005	2006	+/- %	2007 (e)	+/- %
Western Europe/ Africa	8,795	9,971	13.4	9,700	-2.7
Central and Eastern Europe	310	363	16.8	400	10.3
The Americas	2,688	2,951	9.8	2,850	-3.4
Asia	12,498	15,074	20.6	16,850	11.8
World total	24,292	28,358	16.7	29,800	5.1

ISSF expects that global stainless crude steel production will reach 29.8 million metric tons (mmt) in 2007. This represents a rise of 5.1 % on 2006 production. The growth rate of 5.1%, almost on the long term average, takes into account the very high level of supply which occurred in many countries during 2006 and caused a significant build-up of stainless steel stock at service centres and fabricators.

Actual global stainless steel production in 2006 increased by 16.7 % to 28.4 mmt compared to 2005. This more than compensated for the downturn in production during 2005 (-1.1%).

Asia is by the far largest stainless steel producing area in the world. During 2006 Asia again showed the strongest increased stainless steel production by almost 21%. ISSF expects further high growth of approximately 12% in 2007 to almost 16.9 mmt. In 2006, all Asian countries except South Korea contributed to this growth. In 2007, China will be the driving force followed by India. ISSF expects all other Asian countries to show flat or decreasing production. China will continue to expand its stainless steel melting activities with significant new capacities in the start-up phase. China became the

world's leading stainless steel producer in 2006. The lead of China over Japan, the second-highest stainless steel producer, is expected to increase in 2007.

Source: International Stainless Steel Forum (ISSF)

200-series tests in Food Media start at CFTRI

Indian Stainless Steel Development Association (ISSDA) is pleased to inform that a Memorandum of Understanding (MoU) has been signed between the Central Food Technology Research Institute (CFTRI), Mysore and ISSDA for conducting the all-important tests in food media (leaching of metallic ions and corrosion). These tests have already started at CFTRI and expected to be over by the end of this year. These tests are for inclusion of the low-nickel stainless steel grades in the Indian Standard.

Mr. K. R. Ananthanarayanan visited CFTRI on 11th June 2007 to review the progress of the tests. Apparently, all tests are going on very well. The leaching study with acetic acid is over and now CFTRI will start leaching study with citric acid.

Earlier the mechanical and chemistry tests on the three grades of low-nickel stainless steels have been completed satisfactorily at TCR Engineering, Mumbai.



Mr. Ramesh R Gopal, Executive Director, ISSDA exchanging MOU with Smt. Darly Thomas, Technology Transfer & Business Development (TTBD), CFTRI, Mysore.

Jindal Stainless bags contract for construction, operation and maintenance of 225 DTC Bus-Q-Shelters

The Delhi Transport Corporation (DTC) with its plans to redefine the street-space of Delhi has awarded the contract of construction operation and maintenance of 225 plush and modern bus-q-shelter on BOT (Build Own Transfer) on a lease of ten years to Jindal Stainless Ltd; India's largest integrated producer of stainless steel.

The 225 stainless steel clad bus shelter with unique design and provisions are aimed at giving a bridal make up to the city of Delhi as it hosts the next Commonwealth Games. These bus shelters would be placed alongside the road stretch starting from Delhi International airport to the Ring Road from Rao Tula Ram Marg, till upto ISBT, Nizamuddin, adjoining areas near JLN Stadium, IG Indoor stadium, Yamuna Velodrome, Commonwealth Games, including areas near New Delhi and Old Delhi Railway station, Red Fort etc. The conceptual designs of the bus shelter have been provided by RITES, consultant to DTC. The shelters would be fabricated and erected by Jindal Stainless within the next six months.

During the lease period of 10 years, the revenue generated by advertisements in these shelters would be shared by Jindal Stainless and DTC and after the lapse of 10 years the bus shelters would be handed over to DTC. Jindal Stainless would manage complete operation, maintenance and function of these shelters during the tenure of the agreement.

FACT SHEET

- It will have a functional design, aesthetically pleasing, modern, sleek, commuter and environment friendly.
- It will have comfortable seating for commuters; special emphasis has been given in the design to comfort the disabled and handicapped. Provision for rainwater harvesting is also being planned.
- All shelters to have a display of updated maps, commuter information and a clock. Proper care for drainage, safety, security, waste clearance has been taken. Routine and periodic maintenance would be undertaken to ensure its upkeep.



A Model of the 225 all stainless steel bus-q-shelters to be constructed, operated and maintained by Jindal Stainless Limited in Delhi for the DTC.

- The bus shelters would be sized, 9m x 2.25 to maximum upto 9m x 3 meters and would have advertising display panels as source of revenue.
- Use of Stainless steel structural members have been chosen because of unique qualities of stainless steel as it requires no maintenance, is corrosion resistant, has a very long life, does not require painting/repainting, is vandal proof and has high weight-to-strength ratio compared to other alternatives.
- Superior modular design allowing easy and efficient fabrication and erection, minimizing time for completion thus mitigating hindrance to public / traffic.

Contact : Jindal Stainless Limited, Jindal Centre, 12, Bhikaiji Cama Place, New Delhi – 110 066, Tel: 011 – 2618 8340-50, 2618 8360-75, Fax: 011 – 4165 9169, E-mail: info@jindalstainless.com
Web: www.jindalstainless.com

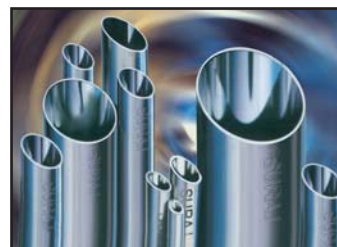
Suraj Stainless at a glance

Suraj Stainless is a Public Limited Company, managed by Mr Ashok Shah (Chairman & CEO), Mr. Gunwant Shah (Vice Chairman) and Mr Kunal Shah (Managing Director) with strong support by their highly qualified technical and experienced marketing and production team.

Suraj Stainless Limited is a leading manufacturer and exporter of stainless steel seamless and welded pipes, tubes and "U" tubes in various sizes, specification and grades. They have obtained a very good name in the international market by supplying the quality products to more than 60 countries all over the world. They are specialized in tubing for various equipment, such as heat exchangers, heaters, condensers, heating elements, instrumentation and other applications. Their well equipped manufacturing unit with all production and testing facilities is situated in village "THOL", near Ahmedabad.(Gujarat).

Their comprehensive product range covers - from outside diameter 6.00 mm to 219.08 mm with suitable wall thickness from 0.6 mm to 10.00 mm in standard length upto 30 meters. Their present manufacturing programme includes the production of tubes and pipes Austenitic Stainless Steel and Duplex Stainless Steel.

The company strongly believes that the achievement is mainly because of obtaining some accreditation certificates, such as ISO-9001, AD-2000 Merkblatt W0 and Pressure Equipment Directive [PED] 97/23/EC in addition to Government of India recognizing them as one of the EXPORT HOUSES and also the AWARD FOR



Stainless Steel Pipes



Stainless Steel U-tubes

EXPORT EXCELLENCE Certificate in recognition of company achieving highest exports since 2001-2002 to 2006-2007.

Suraj Stainless Limited is in the approved list of almost all international as well as national reputed third party inspection authorities, such as EIL, Lloyds, Bureau Verities, TUV, DNV, SGS etc. and supplying the products regularly under the inspection and certification of these third party inspection agencies.

They have now successfully installed and commissioned the New Piercing Mill to manufacture Mother Hollows which is the raw material for the seamless plant. And this will help speed up delivery of their products by not depending much on imports of the same. The production and yield will go up.

Contact: Mr Ashok Shah, Chairman & CEO, Suraj Stainless Ltd, Suraj House, Vidyanagar Society, Opp. Usmanpura Garden, Ashram Road, Ahmedabad 380 014, Gujarat. Tel: 91-79-2754 0720, Fax: 91-79-2754 0722, Email: export@surajgroup.com, Web: www.surajgroup.com

Stainless steel roofing system executed at Khalsa Heritage Complex – Anandpur Sahib, India.



Finished roof of the auditorium at KHC

Currently under construction on a 100 acre site, the complex has been conceived as two functionally integrated sets of buildings to serve as a cultural museum for exhibiting the rich heritage of the Sikhs. Once completed, the KHALSA HERITAGE COMPLEX (KHC) will probably be the world's biggest cultural and historical museum dedicated to a community.

As a counterpoint to the rich tradition of domes which crown sacred Sikh buildings, the roofs of the Khalsa museum are carved out in shapes like great receptors facing the sky. Sheathed with silvery stainless steel, they reflect the light towards the Gurudwara and the fort. At night these roofs would be floodlit and form a visual triangular axis with the illuminated fort and Gurudwara domes. Timelessness, according to the principal architect Mr. Moshe Safdie, is perhaps the most meaningful quality one can ascribe to a building. This museum shall stand apart forever- unique, mystical and eternal.

The stainless steel roof has been installed over an area of 3750 sq.meters, the largest ever stainless steel roofing being executed in India. The roof has been designed to stand for 100 years and has been erected over an existing RCC roof slab. The project is being executed by **M/s Sreevatsa Stainless Steel Fabricators (P) Ltd**, a Chennai based firm in technical collaboration with **M/s Chadwick Technology Pty Ltd, Australia**-world leaders in the installation of expansive roofing systems. The project is in the final stages of completion.

The design has addressed all the issues like extreme variations in temperature, heavy rainfall, thermal and lateral movements due to natural causes like heat and earthquakes. The latest technology has been exploited to achieve the complex geometry of double curvatures in the roof profile. The task of execution is being carried

out by group of committed engineers and craftsmen staying fulltime at site for the past 8 months. A total of 60 tonnes of stainless steel has been utilized in the project.

Metal Roof

The roof panels have been fabricated out of stainless steel 304 grade, hammer tone finish. A total of 30 tonnes of SS hammer tone finish has been supplied by M/s Steel Authority of India Limited, Salem Steel Plant. The thickness is 0.63 mm with a protective coating. The roof panels have been profiled to achieve the complex geometry of double curvature using the latest CNC machines and design software.

There has been a total of around 3000 roof panels of 3500 mm length of which , each panel has been designed using the latest 3D modelling software and have been formed on CNC sheet metal shop. The roof design has been conceptualised by M/s Chadwick Technology Pty Ltd, Australia. The standing seam system has been customised to the required geometry. The standing seam has been covered with a triangular shaped roll formed batten cap for the aesthetic purpose. The concept has been transformed into reality by M/s Sreevatsa Stainless Steel Fabricators (P) Ltd , Chennai.

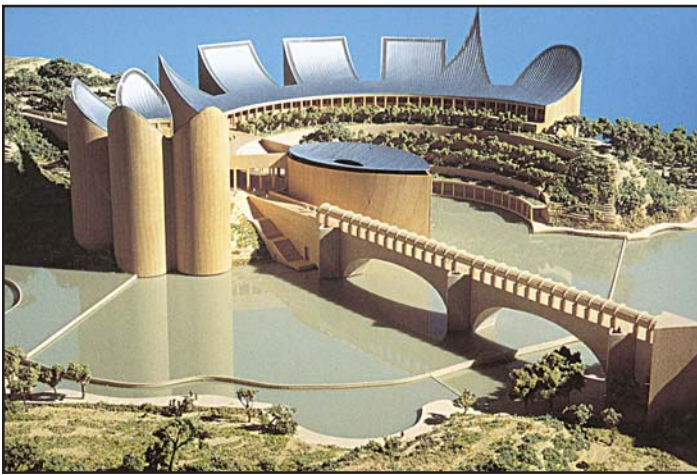
Support and Anchorage Systems

Metal panel systems are engineered to support gravity, seismic and wind loading. The fastening of the panels also needs to accommodate inter-storey drift requirements in seismic zones. The support system of the panels have been critically designed and accurately fabricated to accommodate the unavoidable huge tolerance in casting the RCC roof slabs of complex geometry.

The project has also used more than 30 tonnes of stainless steel material for base structure such as brackets, purlins, cleats, clamps etc. Mill finished stainless steel material of various thicknesses, as stipulated by the structural design has been used. All stainless steel anchor fasteners have been supplied by M/s Hilti India.

Joints and Joint Detailing: Since metal is impervious to water, panel joint design is critical to the water tightness of the system. A metal panel building typically has an extensive number of joints. How the joints perform is a factor of the panel design and construction. In this project a system similar to the rain screen or drainage system has been used with a standing seam for both performance characteristics and the aesthetic criteria of unsealed joints.

Compared to concrete or masonry cladding elements, metal panel systems have higher coefficients of expansion for thermal movement. Designers of metal panel systems need to calculate the expected movement of metal panels due to changes of temperature.



An artist's impression of the Khalsa Heritage Complex

Insulation: With the exception of insulated metal panels, metal panels do not typically provide any insulation value to wall systems. When non-insulated metal panels are used, the insulation is typically provided. In this project rock wool insulation of 75 mm thickness has been provided.

Air and Moisture Barrier: While face sealed systems do not require an air and moisture barrier, drainage and rain-screen metal panel typically require a secondary air and moisture barrier system. The selection of the air and moisture barrier is an important decision that needs to be customized to the specific nature of the metal panel system, the exterior sheathing, geometry, and HVAC requirements of the building. This project has a layer of EPDM placed immediately below the roof panels to act as the second defence of water proofing and a layer of Bituthene Membrane, supplied by M/s W.R. Grace and Co. This acts as an air vapour barrier.

Metal Panel Design

As part of the design, the architects had selected a type of metal panel system and provided architectural details that depict the relationship of the metal panel system to the adjacent building systems.

The designers M/s Chadwick Technology Pty Ltd, Australia have selected the types of metal panels that will meet design criteria and

also establish the panel performance criteria. Performance criteria needed include wind loading, seismic design criteria, deflection criteria, air infiltration criteria, thermal movement criteria, performance testing criteria, insulation criteria and performance criteria for air and moisture barrier or rain screen.

M/s Moshe Safdie Associates from USA- the clients' architects, their Indian counterpart M/s Ashok Dhawan, M/s L & T Limited, the Indian multinational in construction industry and M/s Chadwick Technology Pty Ltd, Australia, the world renowned roofing specialists – All colossal brains in the respective fields have joined together in this projects. That Sreevatsa Stainless Steel Fabricators (P) Ltd, from the southern tip of this great country, also had a substantial role to play in this prestigious heritage project is due to the cooperation extended to us by the above great players and not the least The Anandpur Sahib Foundation, Govt. of Punjab.



Closer view of the stainless steel roofing of the auditorium



Work in progress at the main structure at KHC

Contact : Mr CC Sampath, Sreevatsa Stainless Steel Fabricators (P) Ltd, 1/376 Mugaliwakkam, Porur, Chennai 600 017.
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Railways tender for 37,000MT of 409M stainless for wagons

Railways expect crores of profit from stainless steel design

"Wagons are the bread winning horses of the Indian Railways. An increase of 10 per cent in wagon productivity would lead to annual incremental earnings of Rs. 4000 crore for the Railways. The Indian Railways have earned several thousand crores by improving the wagon turnaround time and enhancing per wagon payload."

"We have therefore decided to stop procurement of open and covered wagons of old design from 2007-08. Production of 25 T axle load wagons and 22.9 T axle load wagons of new design will commence in 2007-08. Similarly, 22.9 T and 25 T Axle load wagons suitable for steel and petroleum products will also be manufactured"..... (Railway Minister Shri Lalu Prasad Yadav, while presenting Railway Budget 2007-08 in the Lok Sabha on February 26, 2007)

Research Designs and Standards Organisation (RDSO) is the sole R&D organisation of Indian Railways and functions as the technical advisor to Railway Board, Zonal Railways and Production Units. It develops safe, efficient and cost effective Railway technology through technical excellence and has continuously developed new designs and products for haulage of heavier and speedier trains. This has helped in manifold increase in passenger and freight traffic. New rolling stock have been designed, wooden sleepers have been replaced by concrete sleepers, communications, signaling have been upgraded to meet the needs of safe operations of trains at higher speeds.

RDSO has taken the initiative to **Design of Higher Axle Load (25 T) Wagons**. The features and benefits of new higher axle load 25 T wagons are given below :

(a) 25 Tonne Axle Load Coal Wagon Type BOXN-25 : Conceptual design of 25 t axle load coal wagon type BOXN-25 has been developed. This wagon will have Pay to Tare ratio of 3.6 (v/s 2.5 of existing BOXN). Track loading density of 9.33 t/m (v/s 7.59 t/m of existing BOXN). This wagon will have stainless steel **body and under frame**. It will have four doors. The rake throughput increase with this wagon will be 34.3% in comparison to rake of BOXN (axle load-20.32 t). With rake of this wagon, there will be increase in revenue of Rs. 2.5 crores per rake per year over BOXN (CC+8+2t).



(b) 25 Tonne Axle Load Bottom Discharge Coal Hopper Wagon Type BOBRN-25 : Conceptual design of 25 t axle load bottom discharge coal hopper wagon type BOBRN-25 has been developed. The design is based on Garib Rath MMD. This wagon will have Pay to Tare ratio of 3.26 (v/s 2.2 of existing BOBRN). Track loading density of 9.33 t/m (v/s 7.67 t/m of existing BOBRN). This wagon will have stainless steel **body and under frame**. The rake throughput increase with this wagon will be 37.4% in comparison to rake of BOBRN (axle load-20.32 t). With rake of this wagon, there will be increase in revenue of Rs. 3.23 crores per rake per year over BOBRN (CC+6+2 t).

The tender for 37,000 MT of 409M plates and sheets is for purposes of manufacturing new design of wagons for use by the Indian Railways. 409M is a utility grade stainless steel having minimum alloying elements. It contains: C - 0.03 max, Cr - 10.8 to 12.5, Ni - 1.50 max, Ti - 0.75 max

Source : Indian Railways – March & May 2007 issues, published by Ministry of Railways (Railway Board)

Welcoming New Members



**"THE ASSURANCE OF QUALITY.
THE REPUTATION OF RELIABILITY"**

Leaders in SS Round Bars & Wires.

A Commitment that is Strong as Steel

The Hindustan Stainless commitment to quality and service has seen it growing into a truly global enterprise with customers in over 40 countries. It has state-of-the-art manufacturing facilities, an enlightened management and empowered employees who work with single minded dedication to emerge the best in every test – be it manufacturing quality, reliable supplies or customer service.

The Stainless Pedigree

The group has been involved in the stainless steel long products

sector for over thirty years. It is one of the biggest groups in India selling approx. 40,000 MT of stainless Bars & Wires across the globe.



Hexagon bars



Stainless steel rounds



Stainless steel squares



Wire Rods

Wider flat products available from Outokumpu

Our Primary Member Outokumpu India Pvt Ltd supplies special products in coil and sheet in 2 metres width as well as Hot Rolled plates tailormade in widths up to 3.2 meters in Outokumpu's manufacturing facilities in Sweden.

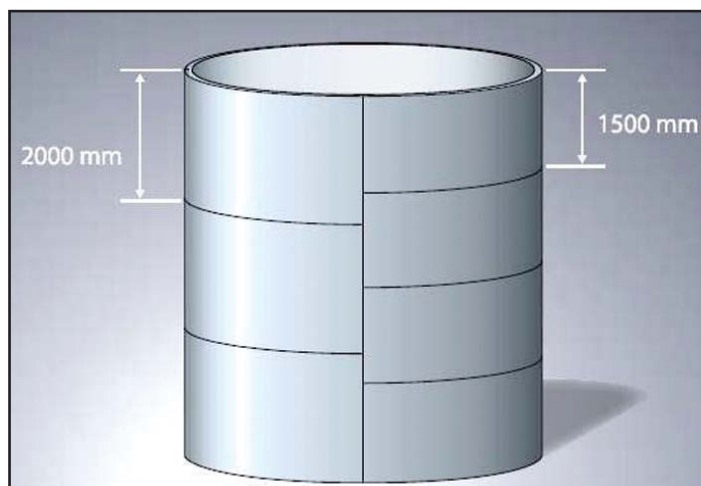
Over the past years, end-users have always shown interest to have wider coils, sheets and plates. Many stainless producers worldwide have aligned their facilities to meet this growing aspiration of the end users – most prominent being Turnkey Project companies and Fabricators.



- Finally the final product is aesthetically pleasing due to fewer joints.

As a result, wider flat products always result in substantial savings.

The illustration below shows an actual case study where 316L plates in 2000mm and 1500mm width with 4, 5 & 6mm thickness were used. With significant order load, it clearly proved that a 30% savings on welding volume and cost by using 2 metre wide plates.



Advantage of Wider Flat Products for Fabricators and End Users

- Customers always desire to have fewer welds in the fabrication process because it reduces the time required to get plates together, aligned and tack welded together with edge preparation. Fabrication time reduction means a big reduction in fabrication cost.
- Reduced welding means reduced welding cost on account of less welding materials consumed. This is more so if the plate thickness is higher which calls for many weld passes.
- Wider plates lead to reduction in handling requirements on the shop floor which improves shop efficiency and productivity.
- Overall material yield is also improved with lesser end cuts/waste
- Every weld is also a risk due to bad welding or bad pickling. With lesser welds, the fabrication is stronger and lower is the safety risk.
- Fewer welds also mean lower inspection/testing costs and higher consistency of chemical composition throughout the application.

>> Hindustan Stainless contd. from page 6

Quality that Shines Forever

As a result of continuous improvement with strong emphasis on quality and customer satisfaction, today the company is ISO 9001 Certified and has become one of the most reliable sources of quality products in the international market.

Forging Global Partnerships

As a global player, Hindustan Stainless remains committed to maintaining world-class quality, reliable delivery schedules, competitive prices and excellent relationships. The company has a customer centric ethos and places the customer at the very centre of operations. "It is our belief that by consistently serving the needs of our customers we progress from being a reliable supplier to a Partner in Progress".

Contact : Outokumpu India Private Limited, 412, Block E, International Trade Tower, Nehru Place, New Delhi – 110 019.
Tel : 011 4651 8440, 4651 8441, Fax : 011 4651 8439,
e-mail : india.sales@outokumpu.com, Web : www.outokumpu.com

Current Products : Stainless steel rounds, Squares and Hexagon Bars (Hot rolled and Cold finished) and suppliers of Wires and Wire Rods.

Our Future Products : Flats, Pipes, Tubes, Flanges and Angles

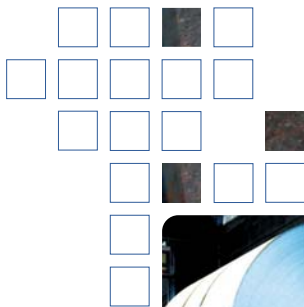
Our Standard Grades Type : Austenitics, Ferritics, Martensitics, Duplex, Precipitation hardening steels, superaustenitics.

Contact :

Works : 1) Savroli-Kharpada Road, Village Kumbhivali, Taluka Post – Khalapur, Khopoli. Dist. Raigad, State : Maharashtra, India.

Works : 2) Vasai Taluka Ind. State, Plot No. 61/62, Gaurai Pada, Vasai (e), Dist. Thane, Maharashtra, India (ISO 9002 certification from TUV, Germany).

OUTOKUMPU



How can You add strength to stainless?

Stainless steel is a low maintenance material with properties of high durability and corrosion resistance, which offer valuable savings in terms of money and resources in the long run.

Outokumpu produces quality stainless steel for demanding applications. We are recognised worldwide as a technical leader in stainless industry. At Outokumpu we are continuously developing materials for use by diverse industries. Duplex stainless steels are materials of today in critical applications, which make them competitive alternatives to conventional materials for longer and safer life.

From widest coils and plates to tailormade shapes in conventional & duplex grades are shining examples of Outokumpu products and services. We are dedicated to helping you to gain competitive advantage.



Outokumpu is an international stainless steel company. Our vision is to be the undisputed number one in stainless, with success based on operational excellence. Customers in a wide range of industries use our stainless steel and services worldwide. We are dedicated to helping our customers gain competitive advantage.

OUTOKUMPU

www.outokumpu.com

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Welcoming New Members



For over forty years, ELG Haniel headquartered in Duisburg, Germany, is established in the business of recycling and global trading in raw materials for the stainless steel industry.

With focus on customer satisfaction, ELG products signify the following:

STABILITY: At present, ELG has 37 operational locations around the globe. ELG's long standing partnerships with suppliers and customers create a platform for shared, sustainable success.

COMPETENCE: ELG brings together approx. 4,000 suppliers and alloy steel producers throughout the world. With experienced staff, ELG carefully processes the materials according to the different metals they contain and their physical properties, and delivers quality products tailored exactly to the individual specifications of the stainless steel works and foundries.

QUALITY: Highly qualified staff along with continuous investment in new technologies guarantees that ELG supplies materials of excellent quality according to the international standards.



ELG Yard

RELIABILITY: ELG's commitment to a spirit of partnership in business dealings guarantees its partners the greatest possible peace of mind. Customers know that ELG lives up to its undertakings and meets deadlines.

FLEXIBILITY: With branches all over the world, ELG is a force to be reckoned with in all international markets. Thus ELG is close to its partners geographically and always in a position to respond quickly and flexibly to their needs with an individualized solution.

SERVICE: No matter what is important to you – personalized advice, individual consultation, precise analysis and documentation, or prompt delivery on each transaction – ELG Haniel offers the utmost in service that is complete in every way.

PRODUCTS: ELG Haniel trades in a huge range of primary and secondary raw materials for the production of steel alloys. These include stainless steel scrap and steel scrap, along with super alloys, tool steel, high-speed steel and carbide containing the elements chromium, cobalt, iron, molybdenum, nickel, niobium, tantalum, titanium, tungsten and vanadium. At various locations, ELG also offers stainless steel products in the form of sheets and coils.



Scrap being processed

Furthermore, ELG Haniel is a shareholder in Herculite Ferrochrome (Pty) Ltd in South Africa and sells ferrochrome directly from the producer.

EXTENDING ITS POLE POSITION NOW WITH AN OFFICE IN INDIA:

For ELG, as a market leading company in this sector, the Asian market has taken on a growing importance in recent years. After Japan, Taiwan and Korea, ELG is now also represented by an office in India. In December 2006, the company opened its branch in the Indian trade metropolis of Mumbai.

"It is our philosophy, not only to offer our customers optimal quality in our products, but also to convince them through quality of our service," says Norbert Spaker, Chairman of the Managing Board of ELG.

For many years ELG has been supplying to the Indian stainless steel mills and holds a very strong position in the import of secondary raw materials into India. The own office in India will bring ELG even closer to the customers by being able to offer quick support.

Finally ELG's presence in India does not only focus on expanding the company's services to customers, but also on winning new partners.

Contact : ELG HANIEL GROUP, C/o Jewometaal Stainless Processing B.V. – India Office, 608, Srishti Plaza, Off Saki Vihar Road, Powai, Mumbai – 400072, INDIA. Tel: 022 – 40151525, Fax: 022 – 40151526, Contact Person: Mr Mayank Upadhyay, Mail: mayank@elg.in, Website: www.elg.de

Would you like to feature your stainless steel products / services in STAINLESS INDIA? Send us your write-up along with attractive colour images.

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Gold Matrix Resources is a start-up metals trading company based out of Singapore. The product portfolio includes the gamut of base metals. As a global provider of base metals, we offer structured products combining trade and commodity finance, insurance, hedging strategies, logistical support and physical metal sourcing. Gold Matrix Resources is a transparent trader, providing highly competitive, faster and professional services to the metal consuming industry. It facilitates a smooth flow of goods from the producers to the consumers, giving value to all.

With a backup of dedicated staff and zeal to succeed, Gold Matrix Resources is a lean but hungry metals trading enterprise. It exercises its core capabilities in the fast moving discipline of global metals trading, blending trading knowledge with proper logistics support without the arrogance of some of our friendly competitors.



London Metal Exchange

In short, we can be counted as a one-stop-shop for providing base metals in a risk free manner right at your factory gates just when you need it. On the other side, we help domestic metal producers to reach to overseas markets. We assist base metal producers to get their material registered with the London Metal Exchange (LME). We are associated with major base metal producers, LME brokers, LME warehouses, reliable shipping lines, insurance companies and renowned commodity banks.

What differentiates us from other traders or suppliers is that typically, consumers would want to buy from metal producers, hedge their exposure with LME brokers, outsource shipping and logistics or burden themselves with that task and work with banks for financing. Our offering is unique as you can do most of these activities directly with us and hopefully at cheaper costs.



Handling of Base Metals

Products:

The entire range of base metals are supplied by us which includes nickel, zinc, tin, aluminium, copper and lead. For nickel, we have the marketing rights of Norilsk Nickel (one of the largest nickel producer) for select customers in India. We have hedging accounts with a number of Category 1 LME Ring Members which helps us to provide highly competitive hedging proposals to our clients. Being



Nickel Full Plate Cathodes



Nickel Cut Cathodes

very active in the LME Warrants market, we are able to source metals competitively from LME warehouses all over the world and especially from Asian LME warehouses like Singapore, Jebel Ali and Busan.

Award

Last year, in recognition of our business plans and growth prospects, we were awarded the Global Trader Programme (GTP) status from Singapore Govt. which is conferred to international trading companies of repute and promise.

Mission

Our mission is to provide the metals & minerals consuming / producing industries with a highly competitive, faster and professional menu of services and to facilitate in getting products from producers to consumers with less risks, more transparency and with less working capital.

Contact us

The founder of Gold Matrix Resources is Mr. Pinaki Rath. Prior to this assignment, he worked in the Tata group for about 14 years and brings with him a rich experience in the base metals business in general and nickel in particular. He can be contacted at +65 6491 1101 (Tel); +65 6220 0400 (Fax); pinaki@goldmatrixresources.com (email) and web: www.goldmatrixresources.com

M/s Punjab Abrasives Ltd., Mohali, Punjab, have joined ISSDA as an Associate Member. Their company profile will appear in the next issue of **Stainless India**.



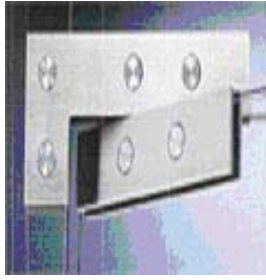
Ozone is one of the leading companies in providing comprehensive architectural hardware solutions. We have emerged as one of the most diversified hardware company with well established network of distributors and dealers with corporate office located at Delhi and have sales offices in Mumbai, Pune, Hyderabad and Chennai.

The sales and support network is complemented by warehousing hubs and consignment agents located across the country.

Our products ranges include:

GLASSAGE : *Architectural Glass Hardwares* -The GLASSAGE range of Ozone specializes in Architectural Glass Hardware. The glassage range endeavors to empower the architects and designers in India to creatively and safely use Toughened Glass in their various assignments. Ozone Glassage range covers:

Ozone contd. on page 11 >>



Patch Fittings: For glass doors and façade glass assemblies. The range also includes point fixed fittings for the same applications.



Shower Hinges: A complete range of hinges, glass connectors, handle, seals etc.



Spider Fittings: Point fixed fittings for curtain wall glazings which include spiders, trusses, tension rods and tension cables. The range also includes fittings for glass canopies.



Balustrades: These are stainless steel fittings for staircases and atrium areas. These modular systems include a range of pillars, accessories and tempered glass to achieve various designs to suit different aesthetic requirements. Ozone is able to take up Turnkey installation and Custom designs for balustrades.



Innoxage: *Stainless Steel Hardware Fittings* - Represents the range of stainless steel door hardware. The initial range includes stainless steel lever handles and glass door handles in various designs and sizes.



Ergozone: *Furniture Fittings* - The product range includes drawer slides, concealed hinges, ergonomic keyboard drawers and CPU holders.



Door Controls: *Architectural Door Closing Devices*- Ozone range of door closing devices includes floor springs, concealed door closers, surface mounted closers. The range includes various models of devices suitable for different applications based on traffic, door weight and door size. The latest range also includes automatic doors. Ozone is now able to provide complete solutions for automatic doors which include, bi-parting, curved, revolving and swing doors.



Safe Electronic: *High Security Electronic Safes*- The Ozone range of electronic safes come in a variety of models each designed for suiting the different needs of individuals in homes, offices and hotel rooms. These vary from motorised safes to various models and sizes of fire resistant, fire proof, money deposit, economy and biometric fingerprint safes.

We at OZONE take great care that our products are suited to Indian markets:

Technically: these products can withstand the onslaught of extreme weather conditions and traumatic usage. Our products allow architects the ability to design and create as per international standards and style. We also enable the architects to make their creations more human friendly, practical and at the same time give their work a distinct stamp of quality.

Our Reach: Ozone has well established network of distributors and dealers all over India which has ensured that we are able to ensure supply of products in time and effective after sales support. Our corporate office is located in Delhi and has sales offices in Mumbai, Pune, Hyderabad and Chennai.

The sales and support network is complemented by warehousing hubs and consignment agents located across the country to provide timely and professional logistics for the flow of goods till the final client / customer.

Our aim is to provide architects and designers the freedom to make their creations more human friendly, practical and give their work a distinct edge of quality. We provide a basket of hardware solutions, which are in line with the latest international trends and practices.

Contact : Mr Alok Agarwal, Director, Ozone Overseas Ltd, H-40, Bali Nagar, New Delhi 110 015, Tel: 91-11-2543 2246/47, Fax: 91-2543 2248, Email: ozone@ozone-india.com, Web: www.ozone-india.com



Our Apologies

The fabricator's name of the stainless steel gate featured in the March 2007 issue of the magazine was incorrectly mentioned. **In actual fact, the gate was designed and fabricated by The Architectural Division of M/s Jindal Stainless Ltd.** This error in our magazine is deeply regretted — Our sincere apologies to the Architectural Division of JSL who have been greatly pained by it.

Their contact details are : Mr S S Viridi, COO, Architectural Divn. – JSL, Plot 64-65, 2nd floor, Udyog Vihar, Phase 4, Gurgaon 122 016, Haryana, Tel: 91-124-412 7705, Fax: 91-124-412 7793 / 99, Email: subash.virdi@jindalsteelway.com, Web: www.jindalarc.in

As a rule, when drafts are submitted for publication, after editing these are sent back to the authors for verification. Contributors are requested to kindly take this seriously and carefully review the edited version for any mistake or inaccuracy.

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Neel Metal Products Ltd
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Rampra Steel Industries Pvt Ltd
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