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STAINLESS INDIA

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75th Anniversary of the First Stainless Steel Passenger Train

The Pioneer Zephyr – the First Stainless Steel Pannenger Train

2009 marks the platinum jubilee year of the first-ever all-stainless steel passenger train in the world. On 26 May 1934, the first diesel-powered, stainless steel, streamlined train pulled out of Union Station, Denver (USA), on a dawn-to-dusk race for Chicago to cover 1,015 miles non-stop in less than 14 hours. The train was called 'Zephyr'. Till then, no train in history had run more than 775 miles non-stop.

The Zephyr covered the distance – one-third of the continent – in 13 hours, 4 minutes and 58 seconds at an average speed of 77.61 mph. In one 19-mile stretch, it cruised at over 100 mph. It covered 3 miles at its top speed of 112.5 mph. It outdistanced the cars that tried to keep pace and twice it even outdistanced airplanes. More than a million people lined the 1,000-mile stretch to cheer the glittering train whizzing past them. The time taken by Zephyr to cover the distance was less than half the time required by the then 'crack' steam-powered train which took 27 hours to cover Denver to Chicago.

This revolution in railway passenger travel was due to the vision and persistence of four industrialists. The railways in the US had not seen any significant change since

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the mid-18th century. They worked hard to improve the performance of diesel engines. They used paper thin stainless steel (18 Cr, 8 Ni). And finally, the cars were streamlined, to minimize wind resistance.

Using 0.012 inch thick hollow sections for structural frames, 0.02 inch thick fluted sheets for the lower side panels and 7/16th inch sheets for the roof and slanted nose, they minimized the weight of the train. With the new and revolutionary, light-weight diesel engine, the Zephyr weighed one-eighth as much as the 'crack' steam-powered, carbon steel-body train which could not do more than 40 mph. Being rust-free, stainless steel did not need painting. Polished by wind, rain and dust, the train would become more beautiful with age!

The light-weight train's fuel cost was only $ 16.72 for diesel compared to $ 255 for coal to power steam-powered train. No wonder than manufacture of steam locomotives stopped in the USA by mid-1950s.

Ordinary riveting and welding would have destroyed stainless steel's two main properties—strength and corrosion resistance. The improved version of 'Shortwelding' developed by Krupp in 1914 (now we call it spot or electrical resistance welding) was used to effectively join the car body parts.

On November 11, 1934 the Zephyr began its regular run between Kancas City and Lincoln. The Zephyr, renamed as the Pioneer Zerphyr, worked almost every day for twenty-five years on the Burlington route, hauling more than a million passenger over 3,200,000 miles. On May 26, 1959, the 25th anniversary of its historic race, the Pioneer Zephyr was retired. The following year it went to the Chicago Museum of Science and Industry. Named a National Historic Mechanical Engineering Landmark, it remains on permanent exhibit, still shiny and beautiful, still drawing the crowds, and still capable of racing a thousand miles from dawn to dusk, nonstop.

The Pioneer Zephyr – Front view

This story has been excerpted from an article titled "A Silver Streak" by Ms Margaret Coel. For more details log on to: www.americanheritage.com/articles/magazine/it/1986/2/1986_2_10.shtml

Photos courtesy: Museum of Science and Industry, Chicago

Architects & Builders!!!

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Delhi's First Stainless Wonder on Show

Close-up of Stainless Steel Sprouts

The AIIMS flyover will house Delhi's first site specific, stainless steel contemporary sculpture, 'Sprouts', a project designed by Jindal Stainless Limited (JSL) as part of the ongoing facelift of Delhi for the Commonwealth Games in 2010.

As per Mr Ratan Jindal, VC & MD JSL Limited "It's a great opportunity to showcase the use of Stainless Steel in the most spectacular creative application for urban landscaping & redevelopment. We were offered the AIIMS intersecting crossing for redevelopment and its was both a matter of great pride and challenge to give the city its most contemporary Stainless spot! The project engages best in the business team of our architects, designers, joining forces with international lighting and landscaping experts, to bring to life a vision that would transform the way Delhi defined urban development; the Stainless steel display is named 'Sprouts' which goes well with our emerging 'India Power' in the global league and set to exemplify trends going forward!"

Conceptualised in 2007 by sculptor Vibhor Sognai, Sprouts has two clusters of giant metallic sprouts -- one has eight, with the tallest one 35 feet tall, while the other cluster has over 400 smaller sprouts, 3 - 5 feet high. Made of rust-free, 304 and 316 grade stainless steel, the sculpture is organic to its location. The project cost around 3 crores, with over Rs 50 lakhs just on the lighting.

The globes of the sprout have been designed in such a way that the top half reflects the sky and lower half the green on the ground. The ground itself has been re-landscaped by Ravi Punde and special lighting has been done by Caurtney Mark from the United Kingdom.

AIIMS flyover visible in the back ground

The globes of the sprout are made of sheets of 304 with No. 6 finish (equivalent to BA finish). The largest sprout has a diameter of 1950 mm. The smallest sprout diameter is 100 mm. The stems of the sprout are made of 2B finish pipes which have been wrapped around with wire rope of Garde 316. Winding is done on full stem portion for larger sprouts and only on the top neck area for smaller sprouts.

Contact: M/s Jindal Stainless Limited (JSL), Jindal Centre, 12, Bhikaiji Cama Place, New Delhi - 110 066
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Web: www.jindalstainless.com

PM inaugurates expansion & modernisation programme of SAIL's Salem Steel Plant

Smt. Sonia Gandhi unveils commemorative sculpture

Prime Minister Dr. Manmohan Singh laid the foundation stone for the Rs. 1,902-crore modernisation & expansion project of Salem Steel Plant (SSP) of Steel Authority of India Limited (SAIL) by unveiling a plaque before a 30,000-strong gathering of the people of Salem and visiting dignitaries on September 5, 2008. UPA Chairperson Smt. Sonia Gandhi unveiled a sculpture, *Spiralling Rhythm* made with Salem Steel depicting the growth of SAIL, at the venue on the occasion.

SSP's modernisation & expansion programme will make it an integrated steel plant and endow it with the capacity to produce 180,000 tonnes per annum (tpa) of stainless steel slabs. With steel making facilities including an electric arc furnace, ladle furnace, refining unit, etc., being set up as part of the project, the plant will no longer have to depend upon sourcing slabs from external sources. The expansion & modernisation programme will also enhance SSP's stainless steel cold rolling capacity from the present 65,000 tpa to 146,000 tpa with latest technology and modern facilities being procured from reputed international suppliers.

Contracts for all the major packages have been concluded. M/s Dasturco is consultant-cum-project manager for SSP's expansion & modernisation programme which is expected to be completed in March 2010.

SAIL is presently implementing its mega modernisation & expansion plan to almost double its hot metal production capacity to 26 million tonnes by the next four years.

Source: Press release from SSP

Stainless Steel Ventilators - A New range of Wind driven Turbo Ventilators from Citadel

Citadel Architectural Solutions Pvt. Ltd. is a company known for its innovative roofing products and turnkey solutions for the construction and industrial sectors. Citadel is also a pioneer in the field of natural ventilators fitted on industrial roof sheds in India.

Our brand "TurboVents" is the largest selling wind operated ventilator in the country with more than 50,000 operating units currently all over India. This feat has been achieved in less than 5 years and Citadel counts among its customers the Who's Who of the Indian industry ranging from MNC's to large Indian Corporates. The Company is also OEM supplier to major pre-engineered and metal building suppliers like Tata Bluescope, Interarch and Lloyds Insulation. The company also operates through a large dealer network of 40 across the country.

In line with the innovative character of the company, Citadel is now going a step ahead to launch Stainless Steel ventilators in the market.

This unique range of ventilators in SS 202 and SS 304 is extremely strong and has more life span then the normal aluminium ventilators. The Stainless Steel ventilators have specially designed body with attractive finish, angle adjuster throat and the base plate is also of stainless steel thereby making it extremely strong and resistant to various elements.

The stainless steel ventilator carries a warranty of 15 years for trouble free operation and minimum expected life of the ventilator is close to 25 years or more. Stainless steel ventilators double curved vanes are specially designed for maximum weather durability, maximum wind driven efficiency and rain spill deflection. Specially designed aerodynamic vanes are strong by structure and light in weight. It is designed to achieve maximum wind energy utilization and performance of exhaust suction.

In addition to the performance characteristics of the product, the aesthetic appeal if also very good. For special applications the ventilators can also provided in SS 316 and 316 L.

Contact: M/s Citadel Architectural Solutions Pvt. Ltd., 303, Vasan Udyog Bhavan, Off. Senapati Bapat Marg, Lower Parel (W), Mumbai – 400 013,
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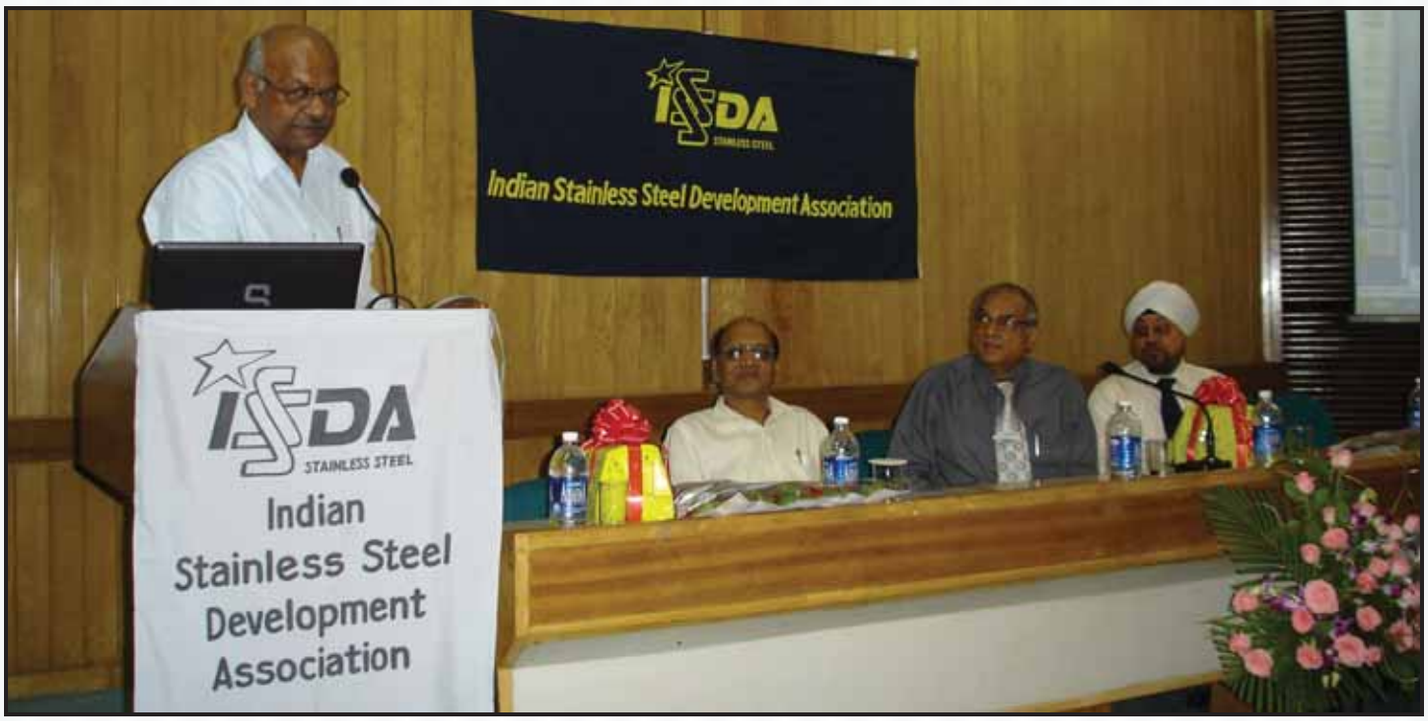
ISSDA's Annual Forward Looking Session and 19th AGM



From left to right: Mr Ramesh R Gopal, Executive Director – ISSDA, Mr P K Gupta, Additional Member (Mechl. Engg.), Railway Board, Mr N C Mathur, President – ISSDA and Mr S P S Bakshi, Executive Director (Projects), Airports Authority of India

The Indian Stainless Steel Development Association (ISSDA) held its Annual Forward Looking Session and 19th Annual General Meeting (AGM) on September 11, 2008 at Gulmohar Hall, India Habitat Centre, Lodhi Road, New Delhi - 110 003.

Over 110 architects, builders, construction companies, personnel from government bodies such as, the Indian Railways, AAI, CPWD, MCD, NDMC, DDA and representatives from member companies of ISSDA attend the Annual Forward Looking Session. They were very happy with the presentations and arrangements made.

Mr P K Gupta, Additional Member (Mechl. Engg.), Railway Board and Mr S P S Bakshi, Executive Director (Projects), Airports Authority of India (AAI) made presentations and shared future plans of Railways and AAI specifically in respect of use of stainless steel.

The Indian Railways plan to increase usage of stainless steel to two lakh tonnes per annum in the next 2-3 years compared to 5,000 tonnes a year in FY 2005-06. During the current financial year, Railways are expected to use 70,000 tonnes.

The Railways are also planning to set up two new rail coach factories to exclusively manufacture unpainted stainless steel coaches (300 series), one at Rai Bareilly in Uttar Pradesh and other one at Palghat in Kerala.

Mr P K Gupta, Addl Member (Mechl. Engg.), Railway Board

Mr S P S Bakshi, ED (Projects), Airports Authority of India

The main contributor to stainless steel uptake would be the wagon stock. A total of about 14,000 stainless steel wagons (including rehabilitation) would be manufactured this FY.

The Airports Authority of India is expanding and modifying 24 airports by March 2009, 11 airports by March 2010 and another 45 airports beyond 2010.

ISSDA assured both Mr. P K Gupta and Mr S P S Bakshi that ISSDA and its member companies would be more than glad to be service to the Railway Board and AAI and sharing our knowledge on stainless steel in grade selection, design, forming and fabrication to the fullest.

For viewing or downloading Powerpoint presentations, click **'Articles / Presentations'** in the homepage at www.stainlessindia.org

Materials Engineering Workshops on Stainless Steels and Nickel Alloys for the petroleum refining, petrochemicals and fertilizer industries held

From Left to Right: Prof. S K Agrawal (IIW, Baroda Chapter), Mr Donald J. Tillack, Mr D M Butala, ED - M/s Gujarat State Fertilizers & Chemicals Limited, Dr. A K Lahiri, Mr Donald L. Bagnoli and Mr Ramesh Gopal at the Vadodara workshop on December 3, 2008

The Nickel Institute (NI) organized a series of multi-location workshops at Delhi, Vadodara, Kochi and Mumbai on materials for the petroleum refining, petrochemical and fertilizer industries from December 1 to December 6, 2008. The workshops were conducted by Mr Donald L Bagnoli, Mr Donald J Tillack and Dr A K Lahiri, consultants to the Nickel Institute.

The workshops objective was to improve the utilization of materials through proper design, material selection and fabrication.

About 460 personnel from the three targeted process industry sectors as well as engineering consultants, fabricators, process licensors, inspection agencies and designers attended the four workshops. Attendees were provided with a wealth of information in CD which contained the workshop presentations and technical reference manual.

Several areas where stainless steel and nickel alloys can have a major impact on Indian refinery/petrochemical/fertilizer industries include the following:

1) The need for Type 316 stainless steel at refineries where opportunity crudes are being used or anticipated in the future.

2) The potential for duplex stainless steel to be considered for sea water exchanger tubing

3) Greater use of stainless steel in fertilizer industry.

4) The increase in use of new fabrication techniques in Indian foundries such as centrifugal castings where high nickel alloys are used in refinery/petrochemical/ fertilizer sectors.

A strong interest was expressed in new methodologies for assessing the use of stainless steels:

1) The use of Life Cycle Costing (LCC) in assessing the appropriateness of stainless steel alloys vs other candidate alloys.

2) A suitable basis for estimation of remaining life for equipment in Fluid Catalytic Cracking (FCC) reactors in refineries.

In addition, issues effecting plant safety such as NH_3 storage tank inspection and fitness for service were also received with interest.

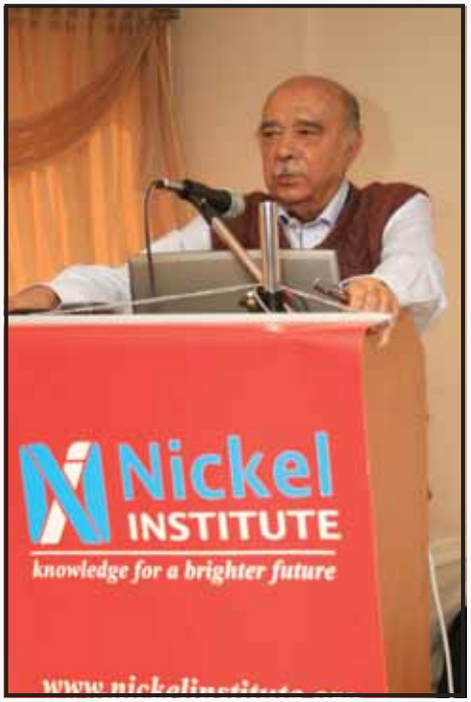
A section of the 140 participants at the Vadodara workshop

Materials Engg ….. continued on page 7

Materials Engg ….. continued from page 6

Donald L Bagnoli, NI-Consultant

Donald J Tillack, NI-Consultant



Dr A K Lahiri, NI-Consultant

These workshops have been given over 100 times in 20 countries on 6 continents since 1994. According to Nickel Institute consultants, "this was the most successful series of CHEM-06 project experience. Not only were the attendances a record for us (both the Vadodara and Mumbai numbers were better than any other previous workshop location) but the quality of attendees and their questions were top-notch."

Participants in all locations very much appreciated the fact that Mr Donald Bagnoli and Mr Donald Tillack resisted intense family pressure not to visit India in the aftermath of the Mumbai terrorist attack to hold workshops in four locations. The commitment of the Nickel Institute consultants to share knowledge even in the face of adversity and personal risk was lauded.

PowerPoint presentations made at the workshops and a soft copy of the Technical Reference Manual is available on CD.

Contact:
rgopal@nickelinstitute.org

News on Opportunities for Stainless Steels

BEML secures contract from Indian Rail Board

Bharat Earth Movers Ltd (BEML), second largest manufacturer of earthmoving equipment in Asia, has received Rs 31 crore development contract from the Indian Rail Board to design and develop the country's first stainless steel AC EMU coaches. The contract involves design, manufacture, supply, testing and commissioning of two rakes or 18 units stainless steel EMU coaches over the next two years.

Concession signed for Hyderabad Metro

Maytas Metro Ltd, the SPV floated for the Hyderabad Metro project, has signed the concession agreement for the Rs. 12,000 crore metro rail project. The Private concessionaire is a consortium of Maytas Infra Ltd, Navabharat Ventures Ltd, Ital Thai Development Public Company Ltd and Infrastructure Leasing & Financial Services Ltd. The project will comprise three lines totalling 71 km interspersed with 66 stations. The lines are Miyapur to LB Nagar (30 km, 28 stations), Jubilee bus station to Falaknuma (15 km, 15 stations) and Nagole to Shilparamam (26 km, 23 stations).

Refinery to begin production by February 2011

HPCL-Mittal Energy's Guru Gobind Singh Refineries is likely to start commercial operations by February 2011 instead of 2012. The proposed refinery is being developed at an investment cost of Rs 18,900 crore at Bathinda. The 9 million tpa refinery will be a zero bottoms, energy efficient, environmentally friendly, high distillated yielding complex refinery which will produce clean fuels and 80 units of polypropylene by processing heavy and acidic crudes. The refinery will also produce high value added products such as polypropylene, food – grade hexane and solvents in addition to LPG, naphtha, petrol, diesel aviation, fuel etc.

GAIL, IOC in JV – To set up Rs 10,000 cr petrochemical plant

GAIL India has signed an MoU with Indian Oil Corporation (IOC) for setting up a Rs 10,000 crore petrochemical plant at Barauni in Bihar within five years. The proposed chemical plant will use 2,50,000 tonne of naphtha produced by IOC's Barauni refinery and the natural gas that GAIL plans to bring from eastern offshore and imported LNG through the planned Jagdishpur-Haldia pipeline. A 130 km spur line from Gaya to Barauni will be laid to transport gas to Barauni fertilizer plant, IOC's refinery and the proposed petrochemical unit.

Welcoming New Members

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Perforated Metal finds **applications across myriad industries** for various purposes to name a few : Construction, Food processing, Architecture, Interiors, Lighting, Filters, Washing machine drums, Acoustic Panels, Ceilings, Flooring, Vents, Strainers, Grills, Racks, Enclosures, Display Fixtures etc.

Diamond Metal Screens is one of the few companies in Asia that can offer **perforated material thickness 0.50 to 20 mm in plate size of 2000x4000 mm (max)**. In addition to cold rolled steel Diamond perforates Stainless Steel, Aluminum, Copper, Brass, Bronze, Lead, Zinc, Special Carbon Steel, Zinc, Duralumin and many more. Shapes that can be perforated are round, diamond, square, conical, rectangular, triangular, hexagonal, perfocom, conical, hexagonal and many more.

Established in 1987 Diamond Metal Screen is equipped with the state-of-art automatic perforation plant built by M/s Schuler Pressen Gmbh and Co., Diamond engineer's co-ordinate specifications and special conditions to yield the most efficient pattern applications.

Schuler Sectional presses are the heart and soul of Diamond Metal Screens and with over 450 tools and die combinations; Diamond can perforate holes from 1mm to 180 mm in various thickness. Diamond's **production facility spread over an area of 30000 sq ft includes 9 All Across/Sectional perforating presses imported from Europe**. It also manufactures standard **perforated sheets of size 1250 X 2500 of thickness 0.5 to 2.5 mm**. Diamond Metal Screens can supply material in sheet and blank or part form with leveling and after providing precision shearing.

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Indira Industries

Indira Industries is a ISO 9001:2000 company started in the year 1987 with the Technical Collaboration with M/s G+H SCHALLSCHUTZ GmbH, Germany.

Indira Industries is one of the leading manufactures of Silencers and Noise Control Acoustic Enclosures for Industrial and Gas Turbine Power Projects. Apart from this, Inlet Duct Systems, Air Filter House, Exhaust Ducting, Diverter Dampers, Guillotine Dampers etc., are being manufactured for Industrial and Gas Turbine Power Projects. Recently Indira Industries has received orders from Indian Railways for the manufacture of stainless steel rail coaches.

Product Range for Gas Turbine Based Power Projects by Indira Industries include:

- Inlet Duct System
- Inlet Air Filtration System
- Exhaust Ducting (including Bypass Stack)
- Acoustic Enclosures
- Diverter Dampers
- Guillotine Dampers
- Heat Recovery Steam Generator (HRSG) Boiler Casing
- Expansion Joints

Stainless steel 409 Railway Coach Walls

Stainless steel 316L Inlet Duct

The above products are being engineered, manufactured, supplied and erected under Technical Collaboration with G+H SCHALLSCHTZ GmbH, Germany.

Industrial Noise control Silencers with about 30db and Gas Turbine Air Inlet duct with about 80db are manufactured.

Contact:

M/s Indira Industries, Plot No. 6, Sipcot Industrial Complex, Ranipet – 632 403, Vellore District, Tamil Nadu
Tel: 04172 244497 / 246203,
Fax: 04172 244487,
Email: ponnuswamy@industries.in
Website: www.indiraindustries.in

Prasum metals pvt. ltd.

Prasum Metals Pvt. Ltd. is emerging as the new leader in the Stainless Steel Wire and Bright Bar industry. Its foundation has been laid on the basic, but important principles of innovations, cutting edge technology, superb quality and ultimate customer satisfaction.

About us

At **Prasum**, we believe success is not only to be attained, but sustained. To be among the leaders require skills, strategy, perseverance, manpower and the right apparatus to meet and exceed global standards. That's what **Prasum** is all about.

Stainless Steel Wires

Prasum ….. continued on page 10

Prasum ….. continued from page 9

Prasum, stresses on innovation and is well equipped with state-of-the-art technology and machinery to manufacture Stainless Steel Wires and Bright Bars with an ISO 9001 : 2000 certification.

Prasum's stringent quality tests ensure that the Stainless Steel Wires and Bright Bars that roll out of its modern unit are the best in the industry. The company's driving force is the team of Skilled Prodction, Management, Marketing and Quality Control teams.

PRODUCTS

Prasum Metals Pvt Ltd offers a wide range of Stainless Steel Wires and Bright Bars which has applications in industrial and household uses.

STAINLESS STEEL WIRES

The range comes in diameters from 1.8 mm to 8 mm and is available in different viz. Austenitic, Martensitic and Ferritic.

Prasum's regular grade range includes AISI 304, 304L, 304HC, 302CHQ, 316, 316L, 201, 201PNi3, 202, 204Cu, 410, 430, 430L and Electrode Grades ER308L, ER309L, ER310 and ER316L.

Prasum offers Soft Annealed, Coated, EPQ, ¼ Hard, ½ Hard, ¾ Hard and Spring Hard wires.

Prasum believes in delivering what exactly is required and thus, offer's coil weight options and customized packaging to its customers. The company's standard packaging is of H.D.P.E./ Hessian cloth / Stretch film wrapped coils from 100 kgs. to 500 kgs.

Stainless Steel Bright Bars

STAINLESS STEEL BRIGHT BARS

The range comes in diameters from 1.80 mm to 8.00 mm.

The regular grades available are AISI 304, 304L, 304HC, 316, 316L, 201, 201PNi3, 202, 204Cu, 410, 430 and others with cut length of one to six meters in Bright Drawn and Polished finish.

Contact:

M/s Prasum Metals Pvt Ltd, 1st Floor, Ajanta Complex, Guest House Road, Morbi – 363 641, Gujarat
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We manufacture stainless steel flux cored wires of the following grades 308L T1-1, 309L T1-1, 316L T1-1.

We have an expert team of technologists and marketing personnel who have vast experience in the line and have put in a lengthy tenure with leading electrode manufacturers.

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We are supplying our electrodes and wires to all Sectors of Government and Private Organizations through out India. Also there is high volume of export for our quality electrodes. Railways, Shipyard, Refineries, Telecom Factory, Ordnance, Thermal Power Station, Mines, Cement and Sugar Industries are some of the sectors where we are supplying our electrodes. Since the rates are competitive, service is quick and prompt in execution of the order, we have established ourselves as the honoured company in welding industry.

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M/s Royal Arc Electrodes Ltd, 202, Business Classic, Opp Seksaria Ind. Estate, Chincholi Bunder Road, Malad (West), Mumbai 400 064.
Tel: 022-2882 2374 / 2882 0328,
Fax: 022-2883 2005, Email: royalarc@vsnl.com ;
Website: www.royalarc-electrodes.com

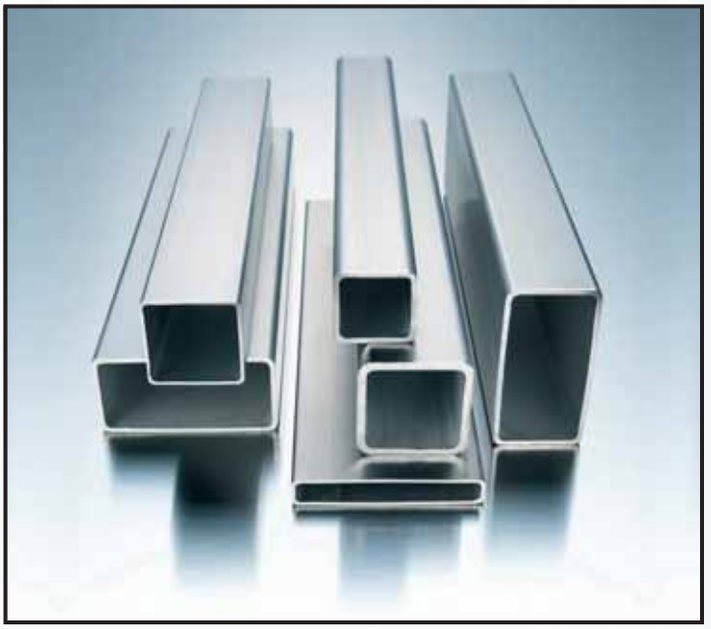
Royal Arc ….. continued on page 11

Royal Arc ….. continued from page 10

STALA TUBE

We take the pleasure to introduce our selves, **STALATUBE OY (www.stalatube.com)**, based in Finland, as one of the leading manufacturers of Stainless Steel hollow sections (square and rectangular tubes), supplying across the world. Our products are widely accepted by leading companies in the world in various sectors such as Architecture, Building and Construction, transportation, processing and engineering industry.

Incorporated in the year 1972, Stalatube Oy is now an INR 550 Crores company. The head office and production plant is based at Lahti in Finland. The company has its sales units in USA and Holland and a representative office in India. Stalatube products are sold throughout the world in over 45 countries, both directly from Finland and through our agents and representatives.



Stalatube Oy has a factory area of 18000 sq.mts with eleven production lines for a wide range of stainless steel hollow sections. We make large investments in advanced technology and maintain close research links to universities and institutions. The company is involved in the search for new materials to increase price stability. Stalatube also promotes cost savings for clients by the use of higher strength hollow sections. There are many innovative applications and thus many reasons for you to get in touch with our know-how.

Stainless Steel Product Range:
Square Tubes: 25 X 25 X 1.2 mm to 300 X 300 X 12.5 mm
Rectangular Tubes: 30 X 20 X1.2 mm to 400 X 200 x 12.5 mm
Flat Tubes: 40 X 10 mm to 80 X 10 mm and 100 X 20 mm

Stalatube is dedicated to reliable, secure and speedy delivery of stainless hollow sections that are certified to match the ordered specifications in all material grades.

Stalatube offers a range of value added services ensuring the clients with the least amount of wastage and higher productivity. Stalatube's cut-to-length service minimizes material costs by reducing waste and scraps, reduces transport, machinery and labor costs and speeds up projects by the delivery of installation ready components.

Above all, we value our customers. Lasting success comes from profitability for everyone, based on service, respect, market know-how, advanced technology & responsibility.

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TI Metal Forming

TI Metal Forming (TIMF) is a pioneer in the cold roll forming in India. TI Metal Forming are leaders in the manufacture and supply of value added metal formed components to all automobile majors in India. TI Metal Forming was established in 1965 as a division of Tube Investments of India Limited, which is a flagship company of US$ 2.4 billion Murugappa Group.

TI Metal Forming is currently operating from six plants, Thirninravur (Chennai), Bawal, Halol, Kakkalur (Chennai), Pune and Uttarakhand (project stage). Chennai, Bawal and Kakkalur plants are TS 16949 certified. Also Chennai and Bawal plant is ISO 14001 certified. A new plant has been set up at Kakkalur for manufacturing hydroformed components.

New competencies: Hydroforming and High strength steel roll forming.

Our product range : Car door frame (skin parts), Glass separator channels, Door guide rails (stainless steel), Window channels, Side impact beams, Casing for starter motor (deep drawn part), HCV chassis and CRF sections for Railway wagons and coaches.

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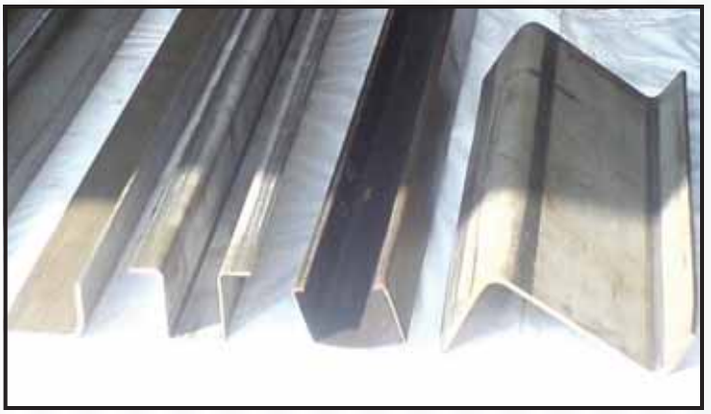
Chassis Long Member



Stainless Steel Channels

World Largest Stainless Steel Metal Finish Roller Brush : from Valgro India

Valgro Engineers Private Limited now produce the largest size brush in the world for metal finishing. The brush size is 600mm OD x 2150mm wide, largest brush for stainless steel and coil finishing with a variety of grit for various finishes.

Valgro Engineers Private Limited takes an excellent opportunity with immense pleasure and offers Metal finish Wide Face roller Brush to meet the vital demand from metal sheets, strips, coil manufacturer and coil coater for uniform cleaning and finishing requirement.

“Valgro-Fynex” wide face roller brushes ideally suited for flat surface. They provide uniform hairline / satin / matt finishing on ferrous and non-ferrous metal surface.

Performance Highlights: It removes debris and contamination from surface to create a clean surface, generates a consistent anchor pattern to improve the surface for better coating adhesion and aesthetic appearance. All of these advantages **increases productivity** and **reduces costs.**

Valgro-Fynex wide roller brushes are dynamically balanced, which extends brush life. To satisfy the ever-changing competitive market, we can offer customize solution as import substitute. Valgro-Fynex Brushes enables you to use lesser amounts of chemicals and heat, which improves surface cleanliness and worker safety and reduces waste disposal needs. They can be used in solution with a pH of 2-10 on the cleaning line.

It also offers easy to use option in such applications. With pre-grinding already done, it is possible to achieve the desired healthy results in single operation

For more detail about Valgro wide face brush do visit http://www.valgroabrasives.com/wide_face.htm

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