

# STAINLESS INDIA

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Development Association**

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## Light-weight stainless steel composite panels for cladding



**The Ashok Leyland HQ Enveloped in Stainless Steel Composite Panels & Glass**

The new Ashok Leyland Corporate Headquarters in Guindy, Chennai, sports the latest in stainless steel cladding technology. Over 3,000 square meters of stainless steel composite panels are clad on the exterior faces of this impressive building, adding to the building's grace and elegance. Being in a coastal environment, the grade chosen for cladding is AISI 316 in different finishes. Some quantities of

stainless steel composite panels (SCP) are also used for the interiors.

Light-weight stainless steel composite panels are typically 4 mm in total thickness. Each of the two thin stainless sheets are 0.3 mm thick if mirror finished and 0.4 mm thick if Hairline finish is desired. The core of the panel is usually of Low Density Poly Ethylene (LDPE) filled

between the sheets. The sheets could be ordered in AISI 304 or 316 depending on the environment in finishes desired by the architect.

For interior applications, use of SS 304 exterior sheet and aluminium backing sheet is both appropriate and cost effective.

The 4mm thick SCP weighs just about 1Kg per square foot. In SCP, the natural beauty, flatness and rigidity of stainless steel is now combined with light weight, flexibility and ease of fabrication, making it an architect's dream. Light-weight SCP allows you to incorporate curves, angles and other design elements which are not possible with metal plates, tiles, granite and other stones.

The clean and bold look of stainless steel, easily matching with adjacent materials of construction like glass or stone, adds to the beauty and prestige of the building (See boxed item 'The SCP Advantage' on page 2 for technical details).

The availability of SCP is a great boon to architects and owners of prestigious buildings, and for those whose homes are their prized possession. The principal benefit is that SCP cladding will last the life of the structure (80 years +) in the pristine condition in which they were installed. All that is required is a mild soap and water wash two or three times a year. (See boxed item on Socony-Mobil Building which was cleaned for the first time in 40 years!- Page 2)

These days many corporate buildings, hospitals, airports and malls in India sport metallic cladding. Stainless steel will certainly be costing more initially but given the well established durability of stainless steel to the environments in cities, while stainless steel will last over the life of the building in its pristine condition, other

*Continued on Page 2*

Continued from page 1

metallic claddings will have to be totally replaced after a couple of decades. When you consider this, stainless steel composite panels definitely cost much less over the life of the buildings compared to other metallic panels (See box item below 'Forever Young').

The installation of SCP on Ashok Leyland Corporate Headquarters in Guindy, Chennai, was done by M/s American Building Technology (P) Ltd., 21, Alexandra Street, Richmond Town, Bangalore – 560 025; Tel 080 2223 7559. E-mail: [blrindia@alubond.com](mailto:blrindia@alubond.com) Website: [www.alubond.com](http://www.alubond.com)

Architects: M/s Mani Chowfla Architects & Consultants, i-6 Maharani Bagh, New Delhi 110 065.

### Forever Young

The Thyssenhaus was one of the first steel-framed, curtain-walled high rise buildings to be constructed in Europe. Designed by Dr. Ing. Hentrich in 1956 with stainless steel cladding on two sides and aluminium curtain-walling on the others, it quickly became the landmark building in Dusseldorf. Even today, it looks just the same as it did in 1956.



*YOUNGER THAN ITS YEARS; Dusseldorf's Thyssenhaus as it appeared in 1956*

The trapezoidal cladding used on the end walls of the building is made from 1.5 mm S31600 stainless steel. It has a No. 4 finish giving it the low reflectivity, high-quality appearance which is so popular with architects.

The building is washed twice a year, and the stainless steel trapezoidal cladding look as good as new. In comparison, the old aluminium curtain walling has been completely replaced with new. (This matter is extracted from a report in 'Nickel' Magazine, 42 years after the building was constructed.)

### Socony-Mobil Building

The 42-storey Socony-Mobil Building was built in 1956. It was the world's largest metal-clad building at that time. Its exterior uses 40,500 m<sup>2</sup> of nickel-containing S30200 stainless steel. The exterior was cleaned for the first time in 1994 (nearly 40 years after installation).



*Socony-Mobil being cleaned.*

A simple scrubbing with a mild non-acidic, non-abrasive detergent removed the dirt and grime of 40 years of exposure to New



*Standing tall in its pristine glory with the Chrysler Building's gleaming stainless steel art deco in the background.*

York City's atmosphere and restored the building to its original luster.

### The SCP Advantage

#### Sustainable development:

Stainless steel is the most recycled material in the world – even more than glass and paper. It is recycled almost 100%. On an average, 60% of the charge going into the furnace for making stainless steel is recycled material. It does not need painting. During its service life, it does not deteriorate or give rise to corrosion products.

#### Optical Flatness:

The core of LDPE with stainless steel outer sheets makes the panel exceptionally stiff. This results in a product with very superior optical flatness which the architects greatly value. Such optical flatness is not easily attained in case of plain metallic sheets unless one uses substantially higher thicknesses like 3 or 4 mm in order to avoid appearance of waviness (called 'Oil Canning').

#### Impact and load resistance:

Apart from high stiffness, this three-layer composite panel greatly improves impact (dent) resistance. This makes SCP much better suited for areas of heavy pedestrian movements where accidents and vandalism are possible, compared to softer materials like aluminium. This three-layer composite also provides the panel excellent torsion and bending strength for the exterior walls which tend to sway under wind loading.

#### Thermal Insulation:

LDPE core has very good thermal insulation properties. With stainless steel itself not being a good conductor of heat, their combination in SCP gives a

product which is an ideal material for insulating the interiors from external heat. This directly results in huge savings on utility bills for air-conditioning.

#### Weathering ability:

Stainless steel is unaffected by long-term exposure to ultraviolet rays and significant changes in ambient temperature all year around. It can withstand extreme weather conditions and not corrode, deteriorate or lose its sheen.

#### Fire resistance:

Composite panels with a fire-resistant core, in combination with the high resistance of stainless steel to high temperature deformation, have excellent fire resistance characteristics. Even at flame temperature, stainless steel will retain half of its room temperature strength. The absence of paints avoids noxious fume generation.

#### Sound Insulation:

Compared to plain metallic sheets, tiles, marble, granite and wood, SCP have much higher sound dampening ability and greatly help in cutting down the transmission of street level noises.

#### Easy, cost-effective installation:

The coefficient of thermal expansion of stainless steel is only three-fourths that of aluminium. Because of the high level of rigidity of SCP, there is no requirement of additional reinforcement or thermal/noise insulation. Installation becomes a lot easier and cost-effective.

*This article has been contributed by Mr. K R Ananthanarayanan, a stainless steel consultant based in Bangalore.*

## Chennai Corporation Beautifies City

'Singara Chennai' in Tamil means 'Beautiful Chennai'. 'Singara Chennai' is the project of Chennai Corporation to enhance the image of the city. As a part of this exercise, Chennai Corporation has replaced 10 existing traffic umbrellas in the city with modern and state-of-the-art stainless steel Traffic Umbrellas on a trial basis.

As you can observe from the photo, the new stainless steel traffic umbrella gives a contemporary look and feel to the traffic intersection. This make-over is not just for the looks. They add invaluable facilities and comfort to traffic constables. These include a cushioned 360° rotating seating, concealed lighting and fan (which you need all year around in Chennai), a first aid box, a traffic control console within comfortable reach, a utility cabinet for the constable, provision for displaying social/civic messages, a public address system and most important, a wind / dust / rain guard made of clear acrylic sheets to protect constables from the harsh environment of Chennai.

Chennai Corporation seems to have missed out on airconditioning and toilet facility? Everything else has been taken care of for the constables to do their job in relative comfort.

The old Traffic Umbrellas were just umbrellas stationed at intersections for policemen to regulate traffic. Traffic policemen were fully exposed to heat and dust, and rain during the monsoons. No place to sit, plus total exposure to noxious exhausts of vehicles.

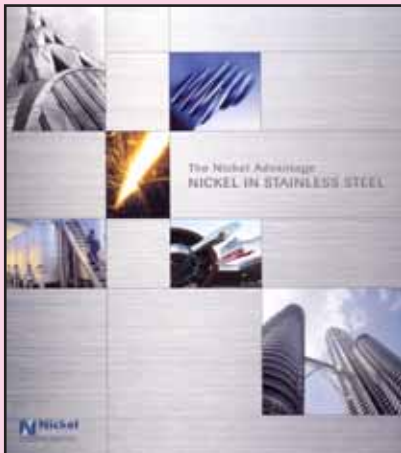


10 such beautiful and efficient traffic umbrellas have been installed in Chennai

The Stainless steel umbrellas are completely modular. These are easily transported to, and assembled at site. The grade of stainless steel used is 304. The base, the support tubes and roof are finished in No. 4 finish. The traffic console cabinet, first aid box and utility cabinet in the umbrella are also made of 304. Total

quantity of stainless steel per Traffic Umbrella is about 900 kg. Designed and fabricated by : M/s Sreevatsa Stainless Steel Fabricators (P) Ltd "Sri Malola", 174 G Habibullah Road, T.Nagar, Chennai 600 017. [www.sreevatsastainless.com](http://www.sreevatsastainless.com)

### The Nickel Advantage -- NICKEL IN STAINLESS STEEL



This publication by the Nickel Institute looks in some detail at the role of nickel in stainless steel. What is its purpose? Why is it needed? We all appreciate that when it comes to stainless steel, the selection of the correct grade is of utmost importance. This document enlightens readers in the area of material selection and helps them appreciate why two-thirds of stainless steel produced in the world today contain nickel.

The aim of this document is to give a comprehensive technical view of the various advantages associated with the

use of nickel in stainless steel and also of nickel's significant contribution to sustainability. This will be a very useful reference book for those dealing with stainless steel.

To obtain a free copy of this publication write to: [nissda@gmail.com](mailto:nissda@gmail.com) with your complete postal address.

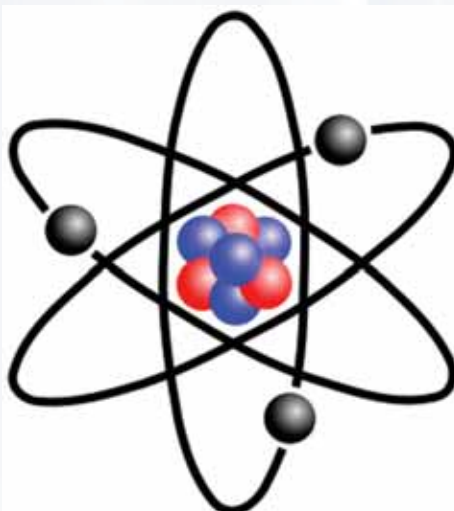
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## “Hungry Water” necessitates use of stainless steel in Nuclear Power Plants

In order to minimize the buildup of radioactive contaminants in the primary nuclear reactor-to-steam generation unit of nuclear power plants, very high purity water is circulated. Specifications limit the total dissolved solids (TDS) in the water to one part per million (ppm). The limit of 1 ppm is an order of magnitude less than in the most pristine fresh waters.

This limit of 1 ppm is so far below the solubility of most common materials in water that a new phrase, *hungry water*, was coined to describe the high level of corrosiveness of 1 ppm TDS high purity water. This very hungry water dissolves most radioactive species, preventing their accumulation in the system.

To give an example, we make iron & steel out of iron ore, which is essentially made of oxides of iron. By extracting oxygen from the ore, we get iron and steel. If steel is left in the atmosphere, it is desperate to return to its original form, that is, to go back to its natural state again, i.e., become oxides of iron. We call this phenomenon rusting. We see this happening all the time with unprotected iron and steel surfaces in the presence of



moisture. What we are seeing here is the hunger of purified iron for its original state of being combined with oxygen. Similarly, the 1 ppm TDS highly purified water has an extreme “hunger” for impurities such as minerals which exist in natural water. That is why most materials cannot withstand the corrosiveness of “hungry water”.

This water is such a good solvent for nearly all materials that at this artificially depleted level, it will leach silica out of glass,

leaving a frosty or etched appearance. Few engineering materials, other than stainless steel, can contain 1 ppm TDS water without losing some species to the water and increasing TDS. Clean stainless steel can hold 1 ppm water without measurable increase in TDS over long periods of time. This ability to keep high purity water just that – high purity – is a major reason that stainless steel has become the standard material of construction for nuclear power plants.

The ability of stainless steel to hold high purity water is due to the highly protective, tenacious and self-replenishing nature of the passive film that forms on stainless steel. The film is so thin (only a few Angstroms ( $10^{-10}$  meters thick)) as to be transparent and, so readily formed, that when scratched it reforms instantly in air or water, as long as there is any oxygen present.

Such very high purity water is also needed for pharmaceutical plants, biological laboratories, hospitals and food process industries. These industries use stainless steels extensively to ensure very high levels of hygiene in their products and services.

## Stainless Steel Assures 120-year Life with “Zero Maintenance”

Mumbai also deserves a sturdy Sea-Link like this!

The Stonecutters Bridge is located across the Rambler Creek at the entrance to one of the busiest ports in the world, the Kwai Chung container port in Hong Kong. This port has played and continues to play a key role in the economic and commercial success of Hong Kong and China. Between the years 1987 and 2004, it was rated 15 times as the busiest container port in the world. In 2005-2007, it was ranked third busiest in the world behind Shanghai and Singapore.

A bridge across the Rambler channel was desperately needed to reduce travel time between the new Hong Kong airport and Kowloon—the commercial hub of Hong Kong. It was also needed for speeding the movement of containers to and from the Port.

The need for keeping the sea lanes clear for passage of even the biggest ships, and at the same time providing quick road transportation from the airport to Kowloon,



Stonecutters Bridge in Hong Kong

posed a simple but gigantic question. If the bridge were ever to be repaired, it would certainly hold up or restrict the sea lanes. It would also congest city roads. Such an eventuality could severely hurt Hong Kong and China’s economy.

The solution was to build a long lasting bridge which would not need any maintenance at all for 120 years; a ZERO maintenance bridge.

This was achieved by using stainless steel 304 grade reinforcement bars in the concrete piers and the main towers’ splash

## Nuclear Power Generation – A growing market for stainless steel

According to a recent report in the *Times of India* (April 12, 2009), India is planning to set up several massive nuclear power parks. These will be located in Jaitapur in Maharashtra, Haripur in West Bengal, Patisonapur in Orissa, Mithirviridi in Gujarat and Kowadi in Andhra Pradesh. Six to eight reactors of 1,000-1,650 MW will be installed at each nuclear park. Negotiations are in progress with four global suppliers – GE-Hitachi, Toshiba-Westinghouse, Areva of France and Atomstroyeksport of Russia.

According to the analyst Mr. Swaminathan S. Ankalesaria Aiyar, “all foreign nuclear suppliers will transfer technology and indigenize production in India. Mr. Aiyar expects this because when South Korea and China placed major orders for nuclear power plants, they mandated transfer of technology and localization of equipment they manufacture”.

MNCs involved are also keen to set up joint ventures in India because of the low cost of production and availability of technical manpower. In addition, Western manufacturers find the construction costs of nuclear power plants spiraling, making it less attractive to build new nuclear plants. One way to sustain resurgence of the nuclear power industry is to construct plants and establish nuclear parts production in low cost countries.



In the wake of sustainability concerns around the world, nuclear power, until recently labeled “expensive and unsafe”, is suddenly seen as being essential to produce emission-free electricity. Worldwide, the demand for nuclear power equipment is expected to quadruple in the next decade. The best way to meet this demand is to create much of the infrastructure in countries such as India and China, which have technical skills, low costs and large local demand.

Only one plant in France and one in Japan can make the giant forgings needed for large nuclear power plants. Bharat Forge of India has recently signed a pact with Areva of France to manufacture nuclear

equipment – including giant forgings. Larsen & Toubro has signed a similar nuclear equipment deal with Mitsubishi.

Such an emerging scenario could make India an exporter of nuclear equipment apart from meeting its own growing needs. According to market analysts, 750 tonnes of stainless steel long products, essentially in the form seamless tubes, and 250 tonnes of flat products are needed for every 500 MWe of nuclear power produced. Apparently stainless steel grades AISI 304L, 316L and 347 will dominate. Nickel alloys such as 600 and 690 are also used, depending on the severity of service environment.

### “Zero maintenance” . . . From Page 4

zones. A total of 2,882 tonnes of rebar in diameters up to 50mm was used.

Hong Kong is prone to very strong typhoon winds. Considering this, the two main towers which rise 290m into the sky, had to be designed in concrete up to level 175m and a composite construction consisting of inner concrete core with a stainless steel skin for the top 120m. Stainless steel grade S32205 was chosen to satisfy the rigorous structural and surface finish requirements. About 2,000 tonnes hot rolled plates of S32205 were used for this purpose. It could be clearly seen that use of conventional steel structure above level +175m would have been too lively and lead to unacceptable vibrations of the stay cables.

Its deck will soar 75 meters above the entrance to Hong Kong’s Kwai Chung container port, allowing large ocean liners to travel under it. When it is completed this year, the 1,600-meter-long Stonecutters Bridge with a span of 1,018 meters and soaring 290 meters into the sky will be a key component in China’s global trade activity. The combination of duplex towers and stainless steel reinforcing bar should result in a bridge that will endure.

#### Compositions:

S32205: C max. 0.03%; Cr 22.5%; Ni 5.5%; Mo 3.2%; Nitrogen  
S30400: C max 0.08%; Cr 19%; Ni 9%  
(Source: Excerpted from: *The Nickel Advantage – Nickel in Stainless Steel*, published by the Nickel Institute.)

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## Hanging Mezzanine Floor for a Lighting Showroom

The hanging mezzanine floor project was executed for M/s Samson Lighting showroom in Chennai. This showroom of M/s Samson Lighting is the biggest lighting showroom in India. More than 2,000 variants of lighting fixtures are displayed over a 10,000 square feet area.

Being a lighting showroom, the architect conceived the mezzanine floor as a very light-weight structure that could be hung from the ceiling, thereby avoiding any vertical supports on the floor. The structure not only hangs, it also has glass flooring to make it more transparent, allowing light to diffuse all over.

Vertical rods suspended from the ceiling have modular holders for the top railing and supports for the vertical glass, all made of stainless steel AISI 304. The ISMC section for the base was made of mild steel for cost reasons and painted to silver to match stainless steel. The staircase is also designed to be as sleek as possible with the main structure laser cut and assembled with modular machined components. The treads of the staircase are of glass.



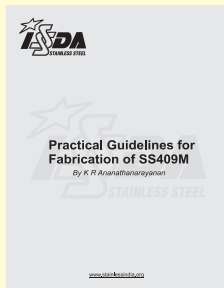
Samson Lighting Showroom at Choolai, Chennai

**ARCHITECT :** M/s Ksm Consultants (P) Ltd, E Block, 6th Floor, Nelson Chambers, 45/115 Nelson, Manickam Road, Chennai 600 029, [www.ksmconsultants.com](http://www.ksmconsultants.com)

**FABRICATOR :** M/s Sreevatsa Stainless Steel Fabricators (P) Ltd, "Sri Malola", 174 G Habibullah Road, T.Nagar, Chennai 600 017, [www.sreevatsastainless.com](http://www.sreevatsastainless.com)

**About 3 tonnes of stainless steel, 2.5 T carbon steel and 1 tonne of glass were used in this project.**

### Practical Guidelines for Fabrication of SS409M



Very large quantities of stainless steel 409M are being produced and fabricated in India. The main application areas are wagons for the railways, and material handling equipment in sugar, cement and coal & mineral processing. Our estimate is that India may have used over 1,50,000 Tonnes of this grade of stainless steel in 2008-09.

409M is a dual phase lean stainless steel containing about 11.5% Cr and < 1% Nickel which is also a thick-section weldable grade. Since many of the engineers and workers engaged in fabrication of this grade may be relatively new to this material, ISSDA has produced

a publication titled 'PRACTICAL GUIDELINES FOR THE FABRICATION OF SS 409M'. This is available free of charge.

For obtaining a free copy, mail to: [nissda@gmail.com](mailto:nissda@gmail.com) with your complete postal address.

For easy access, this 8-page document can also be downloaded from our website: [www.stainlessindia.org](http://www.stainlessindia.org)

ISSDA is thankful to the author of this publication Mr. K R Ananthanarayanan for freely sharing his expertise, time and energy for the benefit of the stainless steel fabrication industry in India. Mr. Ananthanarayanan was formerly with the Steel Authority of India (Salem Steel Plant) for long years in the Product and Applications Department. During his tenure there, Mr. Ananthanarayanan initiated and saw through the development of this lean stainless steel grade and its use in railway wagons and other applications.

### NI's Petrochem workshop DVD

Live coverage of presentations made at Nickel Institute's workshop on materials for the Petroleum Refining, Petrochemicals and Urea production held in December 2008 is now available on DVD.

To obtain a free copy

Write to:

[rgopal@nickelinstitute.org](mailto:rgopal@nickelinstitute.org)  
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## Sandvik Decorex Offers New Design Possibilities

Combining the technical properties of stainless steel with vibrant and eye-catching colours, **Sandvik Decorex** is a new strip material set to revolutionise the construction and design industries.

Sandvik Materials Technology is a leading developer and producer of advanced alloys and ceramic materials, serving a broad range of industries with innovative products and system solutions.

The company now offers industrial designers and architects a new and innovative strip material, combining the technical properties of stainless steel with a vibrant and durable colour coating that resists fingerprints.

By enabling a dazzling effect with fewer production steps, Sandvik Decorex lets you achieve extraordinary design with applications ranging from laptops, digital cameras and mobile phones to automobile interiors, home appliances and interior decoration.

Sandvik Decorex is produced in a number of colours and surface textures, some of which offer a 3D effect, presenting designers and architects a wide selection to choose from.

To manufacture Sandvik Decorex, Sandvik Materials Technology has developed a continuous roll-to-roll large area evaporation coating concept. The coating process is based on advanced nanotechnology, allowing Sandvik to produce stainless strip steel with an extremely thin, yet highly durable coloured surface. The coating is deposited on a continuous strip in motion, which enables coatings on several kilometres of strip in one run.

Production of Sandvik Decorex requires the use of a careful control system to obtain close tolerances on coating thickness and quality. The colour coating process is monitored by non-

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Sandvik Decorex offers clear environmental advantages over alternative coating processes and materials, is fully recyclable and also reduces your energy bill.

**Grades** : Sandvik Decorex is manufactured using stainless steel AISI 304 as base material. AISI 301 and many other stainless steel grades as base are also possible.

**Colours** : Some of the colours currently in the Sandvik Decorex range are Ebony, Mocha, Admiral blue, Emerald, Tangerine, Amber, Coral, Lavender, Olive, Classic, Titanium, Sapphire and Pacific. We are continually developing new colours as part of the regular programme

**Surface Finishes** : Satin, Hairline, Dull, Bright, Linen and others can be produced after special agreement .

**Surface Textures** : Linen, Chess, Circles, 3D Cubes, Leather and others can be produced after special agreement.

**Sizes** : Thickness from 0.1mm to 0.8mm  
Width upto max 350mm

**Quantity** : Minimum 500 kgs

Properties of Sandvik Decorex makes it possible for you to do cold forming, etching, embossing, marking and a lot more. Let your imagination take you to new ideas and we will be happy to explore possibilities with you.

For more details on Sandvik Decorex please  
visit our website : [www.smt.sandvik.com/decorex](http://www.smt.sandvik.com/decorex)  
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# Stainless Steel Personified

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## About Stalal Tube Oy

- Leading manufacturer of Stainless Steel Hollow sections supplying across the world.
- Incorporated in the year 1972, today € 96M company, with HO & works at Lahti in Finland.
- Factory area of 15000 sq.mts with eleven production lines for a wide range of stainless steel hollow sections
- Tubes of Special Stainless Steel grades

## **Product Range:**

Stainless Steel Square Tubes: 25 X 25 X 1.2 mm to

300 X 300 X 12.0 mm

Stainless Steel Rectangular Tubes: 30 X 20 X 1.2 mm to

400 X 200 X 12.0 mm

Stainless Steel Flat Tubes: 40 X 10 mm to 80 X 10 mm

and 100 X 20 mm

## **Material Grades:**

**AISI** – 304, 304L, 316Ti, 316L, LDX 2101

**EN** – 1.4301, 1.4401, 1.4541, 1.4571, 1.4003, 1.4162

**Straight Cutting - Angular Cutting – Laser perforating – Polishing as per your design**

### **India Office:**

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## Welcoming New Members

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The machines are modular and are configured to suit individual requirements.



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## MAROONE STAINLESS

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Browse through pages our products and applications at [www.maroone.in](http://www.maroone.in) to broaden your imagination and send us your enquiry to receive our immediate attention.

Product range: No.8 (mirror finish), bead blast, brito, silvo, artbrush, etching, vibration, anglo (half mirror-half etched) Ti-coated (gold, rosegold, black, coffee, blue) dimples, textured and much more. These are vandal resistant.

M/s Maroon Stainless  
A-316, RG City Centre  
D.B. Gupta Road, Pahar Ganj  
New Delhi – 110 055  
Phone : 011 4350 7985, Fax : 011 4350 7984  
Mob: 0 98181 44650  
E mail: [info@maroone.in](mailto:info@maroone.in)



## OMKAR FOUNDRIES

Omkar Foundries is a third generation family-run engineering unit. M/s Dandekar Brothers was the name of the engineering unit in Sangli started two generations ago.

The new unit Omkar Foundries was started in 1983 in MIDC Area Sangli. From 1983 to 1995, Omkar Foundries produce only cast iron castings. In 1996, the foundry started making steel & stainless steel castings, mainly for the pumps & valves industries. All grades of stainless steel castings are made by our unit.



Our specialty is in impellers & pump casings. We also specialize in newly developed ceramic moulded castings. We also manufacture Ni-Hard castings for dust collectors. Our valuable customers are M/s Kirloskar Brothers Limited, Kirloskar Ebara Pumps Ltd., Thermax Ltd., and Tushaco Pumps Ltd.

### Contact Details:

R G DANDEKAR, Partner.  
M/s OMKAR FOUNDRIES  
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## Sunshine Fasteners Pvt. Ltd.

AN ISO 9001 : 2006 COMPANY

Sunshine Fasteners is one of the leading Fasteners manufacturing units in India. Established in 1992 in highly industrialised Gujarat State of India, our products are well known in the field of Stainless Steel Fasteners.

The company is having Manufacturing facilities divided in four divisions:

- **Wire Preparation Plant**
- **Nuts Manufacturing Division**
- **Bolts/Screws & Machine Screws Manufacturing Division**
- **Self Tapping Screws & Wood Screws Manufacturing Division**

Our Strength is 125 highly trained and experienced manpower including qualified engineers and a team of technical professionals.

**Our Motto is 'VALUE FOR MONEY AND SERVICE TO INDUSTRY'**

**Sunshine Fasteners** is engaged in producing **Stainless Steel Fasteners** basically used in various sectors like Automotive, Chemical Process, Appliances, Engineering, Electronics, Construction, Battery, Telecom, Pump, Power, Defence, Valves, Railways etc.

We believe in quality control at every stage of business cycle, viz. Marketing-Designing-Planning-Purchasing-Receiving-Inspection-Manufacturing/Process Control – Finished Product

Inspection – Shipping – Credit Control.

A Quality Task Force headed by a highly qualified and experienced person has been set up to train and to educate the work force for adopting modern quality control techniques like- SQC, Quality Circles, 5S, Kaizen etc..

Sunshine Fasteners constantly strives to upgrade its processes and incorporates International Development Standards through customer feedback and market requirements.

### Manufacturing Facilities:

1. Manufactured at the most modern fasteners plant in India.
2. The plant has complete in-house manufacturing facility as well as tool room.
3. State of the art cold forging in Multi station fully automatic machines.
4. Superb Thread Rolling, Testing (Physical, Chemical & Non Destructive)
5. Passivation/Plating, Special Operations like Slotting, Assembly etc are all done in-house.

### Quality and Reliability :

Committed to precision and excellence, Sunshine ensures that every fastener produced at its plant matches and in many cases; surpasses in minutest detail to those made by other manufacturers anywhere in the world.



### Quality Policy :

1. Excellent Quality
2. Timely Delivery
3. Satisfying Service
4. Continuous Growth

The main key factor of early success of Sunshine Fasteners is the primary focus on customers satisfaction, continuous improvements and growth, all becoming a way of life at Sunshine Fasteners.

### Contact :

M/s Sunshine Fasteners Pvt Ltd  
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## News on Opportunities for Stainless Steels

### BEML Bags Bangalore Metro Orders

BEML has bagged the prestigious order from Bangalore Metro Rail Corporation Limited (BMRCL) for the supply of 150 metro coaches valued around Rs. 1,672.50 crores. BEML is also likely to get an additional order for 63 metro coaches for further expansion and extension of proposed Metro lines in Bangalore city.

BEML is in possession of yet another prestigious order worth about Rs. 1,365 crores for the supply of metro rail coaches to Delhi Metro Rail Corporation (DMRC) for its Phase – III project. Apart from this, BEML has also indigenously developed stainless steel coaches to the Indian Railway's EMU services in Chennai and Mumbai. The company also hopes to garner sizeable export business in metro rail coaches from the Philippines and Sri Lanka, apart from tapping the potential for supply to emerging centres in Tier-II cities of the country. BEML is also pursuing to set up "National R&D Centre of Excellence" for Metro rail products with Central Government funding to the tune of Rs. 125 crores.

### Kochi Metro Rail gets Government nod

The Kerala government has approved the proposed Rs. 3,048 crore Kochi Metro Rail project and sanctioned Rs 50 lakh to set up an office at Kochi. The project will be on similar lines to the Delhi Metro Rail Corporation. It will be a joint venture between the state and the centre. The project will cover a 26 km stretch between Tripunithura and Aluva and is expected to be completed in three years.

### Chennai Metro Rail Project – first phase approved

The Cabinet has approved the Chennai Metro Rail Project Phase – I, comprising two corridors, covering a length of 45.046 km at a cost of Rs. 14,600 crore. This will be executed through 'The Chennai Metro Rail Corporation Ltd, a joint ownership SPV of Government of India and State Government of Tamilnadu, on a 50-50 equity basis. The Detailed Project Report (DPR) for this was done by Delhi Metro Rail Corporation Ltd for setting up a world-class state of the art Metro Rail System in Chennai on the pattern of Delhi Metro. The total length to be covered was

45.046 km in two corridors [23.085 km (underground: 14.300 km + 8.785 km)] from Washermanpet to Chennai Airport with total stations 18 and [21.961 km (underground 9.695 km + 12.266 km)] from Chennai Central to Saint Thomas Mount.

### BEML's Defence equipment unit in Palakkad

BEML is setting up an Rs 266 crore manufacturing complex at Kanjikode in Palakkad district of Kerala. The new complex will be a dedicated Centre for the manufacture of Defence equipments including Mil Wagons, Floating Bridges, parts and aggregates for Rail & Metro Cars. This centre will also be exclusive base for the manufacture of indigenously designed and developed Aluminum and stainless steel 100 ton freight wagons.

### Architect Appointed for Modernizing New Delhi Railway Station

The Indian Railways is the largest railway system in the world under one ownership. This system has about 8,000 railway stations. As part of the ongoing process for modernizing the entire railway system including rolling stock, comfort levels of passengers, safety systems etc., the railway stations will also be upgraded all over the country. This will be accomplished over a period of time.

The New Delhi Railway Station will be the first to get this world class look amongst Metro Cities. UK-based architect Sir Terry Farrell has been appointed as the architect and technical consultant for preparing the master plan and feasibility report for New Delhi Station.

Sir Terry Farrell has the reputation of having done Hong Kong's Kowloon Station.

New Delhi station is spread over 87 hectares of prime land in the centre of Delhi. Indian Railways plan to earn substantial revenue by leasing out the area around the station for commercial development.

## THE MOST PRESTIGIOUS INDUSTRY EVENT FOR THE GLOBAL STAINLESS STEEL COMMUNITY

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