

Building and Construction

Pergola

A stainless steel pergola has been constructed as a decorative element on a house in Chennai, India. The pergola is constructed from 150 mm diameter pipe with a 3 mm wall. The pipes are regularly spaced and vary in length from 4.3 to 7.6 m. The most difficult part of the construction was creating a uniform matt finish along the entire length of the pipes.



Location/environment | CHENNAI, INDIA/OUTDOOR

Product

Fabrication process

Grade/surface | SS 304/MATT FINISH

Material thickness/diameter | 3 MM

Weight

Competing material

Date of completion

Manufacturer | M/S SREEVATSA STAINLESS STEEL FABRICATORS (P) LTD

Material supplier

Source of information | ISSDA/STAINLESS INDIA, VOL. 13 NO. 2, MARCH 2008

Remarks

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Private Residence

Stainless steel's high tensile strength can shield against hail and wind and affords excellent corrosion protection for a long life. A new colouring process has been used to bring appeal, elegance and style to the stainless roofing and wall system of this private house in the Bahamas. Located in an area prone to hurricanes and strong winds, the system has already been tested by winds exceeding 280 km/hour.



Location/environment | BAHAMAS/OUTDOOR

Product | STAINLESS STEEL COLD ROLLED SHEET

Fabrication process | STAMPING/COLOURING

Grade/surface | 316 L

Material thickness/diameter | 0.4 MM (0.015 INCHES)

Weight | 4.35 KG PER SQUARE METRE (0.9 LB PER SQUARE FOOT)

Competing material

Date of completion | 2005

Manufacturer | MILLENIUM TILE

Material supplier | THYSSENKRUPP

Source of information | THYSSENKRUPP STAINLESS NORTH AMERICA

Remarks | ARCHITECT: GARY PETERSON, FLORIDA, USA. COLOURING PROCESS LICENSED BY POLISPECTRAL, GERMANY. ROOF COMPOUND IS A MIX OF BRONZE AND SLATE. THERE IS OCEAN ON BOTH FRONTAGES. AFTER TWO STORMS WITH 280 KM/HOUR (175 MPH) WINDS, THERE IS NO LEAKAGE.

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Woven Metal Cladding

Three-dimensional panels made from stainless steel wire are a new option for interior and exterior wall cladding. It is also possible to utilise this material to create transparent ceilings and other applications where light and air are allowed to filter through the mesh. Acoustic panelling can also be created.

The panels are created using the rubber pad forming (RPF) method. RPF uses a rubber upper die and a rigid mould as the lower die. The stainless mesh is inserted between the dies and pressure is applied. The rubber exerts pressure on the mesh which is deformed to the shape of the lower rigid die. The rigid die can be made of almost any material. The RPF process is relatively cheap and flexible, making it ideal for the production of prototypes or relatively small production runs.



Location/environment | NETHERLANDS/INDOOR AND OUTDOOR

Product | STAINLESS STEEL WIRE MESH

Fabrication process | RUBBER PAD FORMING

Grade/surface | TO CUSTOMER SPECIFICATION

Material thickness/diameter | 0.3 TO 3.0 MM

Weight | DEPENDANT ON WIRE MESH USED

Competing material | COPPER

Date of completion | 2007

Manufacturer | METAALWARENFABRIEK PHOENIX B.V

Material supplier | HAVER & BOECKER GEWEBE

Source of information | EURO INOX

Remarks | THE RUBBER PAD FORMING PROCESS CAN ALSO BE USED ON SHEET METAL.

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Other

Peelable Laminated Shim

A shim is a thin piece of material that is used to fill space between things, usually for support, levelling or adjustment of fit. The stainless steel shim featured here can be peeled off for ease of use.

The laminated shim consists of layers of stainless foil that are 0.05 mm thick. The foils are bonded together with polymer resin and then pressed into individual panels in a laminating process that uses both pressure and heat.



Location/environment | GERMANY/INDOOR

Product | STAINLESS STEEL SHEET

Fabrication process | BONDED WITH POLYMER RESIN AND PRESSED

Grade/surface | 304

Material thickness/diameter | 0.05 MM

Weight | 9.8 KG PER PANEL OF 1.6 MM X 1,200 MM X 600 MM

Competing material

Date of completion

Manufacturer | GEORG MARTIN GMBH DEUTSCHLAND

Material supplier

Source of information | EURO INOX

Remarks | LAMINATED SHIMS ARE USED IN MANY INDUSTRY SECTORS TO REDUCE MACHINING, MANUFACTURING AND LOGISTICS COSTS. THE MATERIAL PROVIDES ADVANTAGES ALONG THE WHOLE PROCESS CHAIN. ASSEMBLY LEAD TIMES ARE REDUCED, HANDLING IS MADE EASIER AND MAINTENANCE AND REPAIR OPERATIONS ARE SIMPLE AND FAST.

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