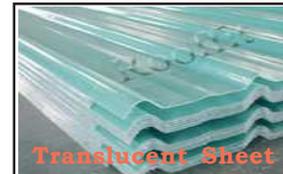


LEADERS IN FRP MACHINE MADE SHEETS IN ANY PROFILE FOR

◆ INDUSTRIAL BUILDING ◆ COOLING TOWERS ◆ WATER TREATMENT
FACILITY ◆ CHEMICAL INDUSTRY

**INDIA'S 1ST MACHINE
MADE FRP SHEET**



Range of FRP Sheets & FRP Roofing Products

1. FRP Translucent Roofing & Cladding Sheets
2. FRP Opaque Sheets
3. FRP Chemical Resistant Sheets
4. FRP Chemical Lining
5. FRP Industrial Roof Rain Water Gutter
6. Wind Driven Roof Turboventilators with Matching FRP Base
7. Polycarbonate Sheets - Compact, Embossed, Multi Wall



Other Credentials & Approvals

1. Mecon Ltd.
2. Engineers India Ltd. (EIL)
3. Military Engineering Service, Army HQ - Defence
4. ISO - 9001 Certificate Company
5. IS -12866 — FRP Sheet
6. Client List
7. Test Reports



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INDEX

S. No.	Description	Pg. No.
1.	About Us	3
2.	Product Catalog	-
3.	Quality Policy & Objectives	4
FRP INDUSTRIAL ROOFING PRODUCT RANGE		
4.	FRP Roofing Sheet - Machine Made	6
	Brief Introduction about FRP	6
	FRP Translucent Roofing Sheets	6
	FRP Machine Made Translucent Roofing Sheets with Anti Ageing Film	6
5.	Advantages of Machine-Made FRP Roofing Sheet	9
6.	Advantages of FRP Sheet Over Other Roofing & Polycarbonate Sheets	10
7.	FRP Sheet Drawing - Partial List	12
8.	Specification of Raw Material	13
9.	FRP Chemical Resistant Sheet for Roofing & Cladding	14
10.	FRP Chemical Lining	16
11.	FRP Rain Water Gutter	18
12.	Wind Driven Roof Turbo Ventilator	20
13.	Polycarbonate Sheet	22
OTHER CREDENTIALS		
14.	Client List	25
	Partial List of Our Clients	26
15.	Test Report	28
16.	Vendor Approvals	29
17.	ISO Certified Company	31

ABOUT US

'Shiv Shakti Fibre Udyog' is Thankful to our esteemed and valuable clients to have provided us with the ever-growing opportunity to serve them for the last 15 Years under our brand of repute "**Rooffit**". The Company first of its kind in India and now has an International reputation for its recognition as the manufacturer of high quality FRP Roofing Sheets and Complete Roofing Products. Rooffit has become a name synonymous with the manufacturer and provision of advanced FRP Roofing Sheets and products utilising best of the Technology.

"Rooffit" with its State-of-the-Art Technology provides World's best complete Roofing & Building Solution in concept, design, manufacture, supply & installation of FRP & Polycarbonate Skylight Roofing Sheets, Turbo Ventilators, Ridge Ventilators, FRP Gutters, FRP 'Z' & 'C' Purlin System, FRP Doors & Frames, alongwith complete accessories under one roof.

We have always trusted upon following three principals, which have enabled us to be on the priority list of our clients those are:

First, versatility in our company and products

Second, Our ability and reputation of meeting tight deadlines while still maintaining high standards and quality norms.

Third, the confidence and compatibility we have with our clients, which we try to maintain forever.

Quality Assurance: Maintaining high quality products are the First commitment of the company towards its valued customers. We at "**Rooffit**" has well established quality assurance department to ensure the conformity of the products to the relevant technical and international standard. The well equipped in-house testing laboratory is utilized to perform raw material and product testing. Tests are also conducted by authorized and international third party if required by our valued customer.

Vision: To be the World's premiere and competitive Turnkey Solution Provider for Complete Buildings & Roofing Systems.

Mission: To deliver high quality Complete Roofing Products in the World with the highest Standard to the complete satisfaction of the customer.

QUALITY POLICY

We at '**SHIV SHAKTI FIBRE UDYOG**' are committed to deliver high quality fiberglass products, at competitive price. Our Quality Policy starts and ends with the customer as a focal point: understanding the customer's requirements, designing optimal solutions to meet those requirements, building systems and processes in place to ensure quality at every stage, and achieving our commitments on delivery and service through skilled & motivated workforce.

QUALITY OBJECTIVES

- a) **On-time deliveries** – We strive to continually improve customer on-time deliveries, as measured through reschedule reports and customer complaints.
- b) **Long-term employment** – We strive to maintain long-term employees as determined by turnover.
- c) **Satisfaction** – We strive to continually review and improve our quality systems through the use of customer surveys, internal audits and management reviews.
- d) **Opportunities** - We strive to continually improve opportunities for growth for employees.
- e) **Non-conformances** – We strive to continually decrease any non-conformances in products, performance, or systems, through the use of non-conforming product reports as monitored at each Management Review.

**FRP TRANSLUCENT ROOFING & CLADDING
SHEETS**

**FRP OPAQUE ROOFING & CLADDING
SHEETS**

**FRP CHEMICAL RESISTANT ROOFING & CLADDING
SHEETS**

FRP ROOFING SHEETS - MACHINE MADE

BRIEF INTRODUCTION ABOUT (FRP) FIBERGLASS REINFORCED PLASTIC

FRP is a wonder composite material consisting of fiberglass reinforcement in a matrix of unsaturated polyester resin and outer protective coating with u/v stabilized in built color of your choice having exceptional strength to weight ratio. FRP is generally known for its high strength and resistance to high temperatures, chemicals, bacteria or termite and excellent acoustic insulation. Because of these outstanding properties unlike PVC or Wood, it finds its application widely in all spheres of life – Aerospace, railways, chemical industry, marine industry, food industry, automobile industry, building and construction etc.

FRP TRANSLUCENT ROOFING SHEETS

“Rooffit” Machine made FRP Sheets is produced in the most advanced **State-Of-The-Art Continuous Automatic Production Line** specially for manufacturing high transparency sheets in various profile.

FRP Sheets are single moulded continuous sheets with both side smooth, glossy finish with inbuilt colour of your choice, which are duly ‘UV’ Stabilized for protection against ‘UV’ rays and colour fading. It is widely used for Industrial Roofing or as Cladding and for covering of fencing of outer Boundary Wall of the building. The sheets provide the natural lighting as required, security & privacy to the enclosures and the Building. It further provides acoustic insulation to the building / enclosures.

India’s First MACHINE MADE

**Fiberglass Roofing Sheets...
In Any Length & Profile**

FRP MACHINE MADE SHEET WITH ANTI AGEING FILM

“Rooffit” Made FRP Sheets also comes with **Anti-Ageing film** embedded on the top during online production process and becomes part of the Sheet which can not be removed even with force. This **Anti-Ageing film** on top gives extra protection to FRP Sheet from extremes of weather, UV radiation and protects from any kind of abrasion. The life of FRP Sheet gets enhanced by 5 - 7 years with the application of **Anti-Ageing film**.

Annual Capacity

“Rooffit” brand is synonymous with innovative and complete solution provider for FRP Roofing/ Cladding sheets for any type of application with its State-of-the-Art Manufacturing facility located near Delhi (Capital of India), spread over 90,000 sq. ft. plant area with an annual capacity of more than **25,00,000 Sq. Mtrs.**

Range of FRP Roofing Sheets

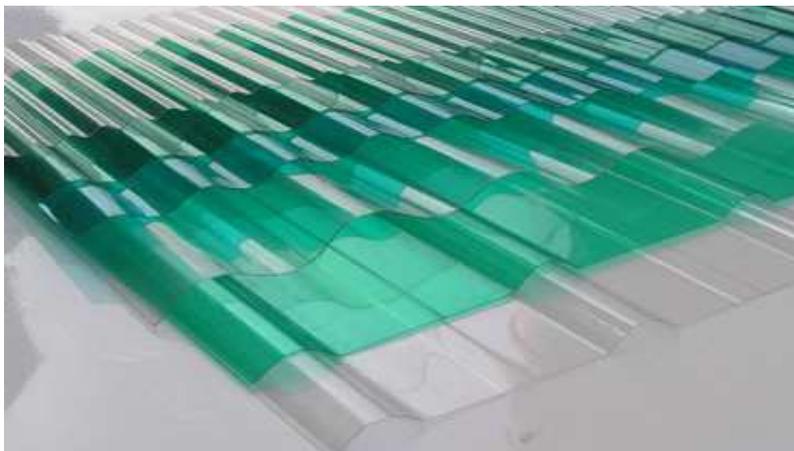
- FRP Plain Sheets in Translucent & Opaque in desired color
- FRP Translucent Sheets for Roofing & Cladding for **Industrial Bluiding**
- FRP Weather Resistant sheets for **Cooling Towers**
- FRP Chemical Resistant Sheets for **Chemical Industry**
- FRP Opaque & Translucent Sheets for **Coastal Area Building**

Note: All FRP Sheets can be customized to completely match the requirements, specifications & applications in any profile and length and are available in Translucent & opaque finish in any desired color.

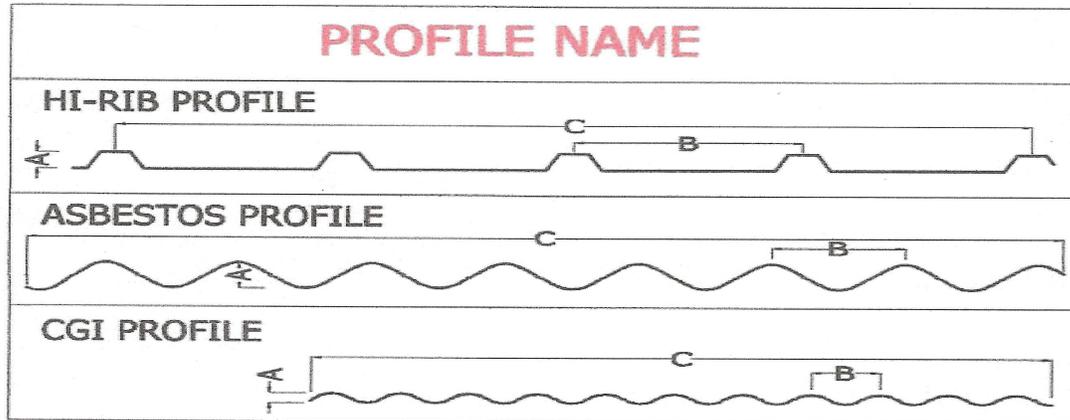
Technical Specification

- Standard Length: Any Length as per Transportation facility.
- Profile: Any profile according to requirement
- Thickness: 0.8 mm to 3.00 mm
- Standard Colour: Translucent/ Opaque- As per RAL Colour Shade
- Surface: Top Anti-aging U/V Resistant film Bottom- Optional
- Density: 1.45 - 1.50 kg/m² per 1 mm (± 5%).
- Temperature: -50^o C to +120^o C
- Bending Strength: ≥ 105 Mpa
- Tensile Strength: ≥ 60 Mpa
- Modulus of Elasticity: ≥ 4500 Mpa
- Thermal Linear Co-efficient of Expansion: 6.7/C x 10⁻⁵
- Barcoal Hardness: > 40 Barcoal
- Self Ignition Temperature: 485^o C
- Glass Content: 25 - 30%
- Light Transmission: Max. 85%
- Water Absorption: Max. 0.2%
- Flamability as per UL-94

Note: We manufacture all types of Machine-Made FRP Profile Sheets available in Domestic & International Market, matching to various size, pitch, depth, etc.



FRP SHEETS - MACHINE MADE



Applications

- Industrial Building Roofing/ Cladding for Natural lights.
- Architectural Building/ Institutions/ Airport for natural lights & aesthetic look.
- Industrial Roofing/ Cladding of Chemical Plants using special surface coatings in Translucent & opaque finish.
- Cladding/ Louvers Sheets for cooling towers against harsh weathering & corrosive environment.
- Green House Roofing sheets.
- Parking areas/ Walkways/ Garages.
- Roofing/ Cladding & Buildings for coastal areas to protect against harsh corrosive environment.

Note: FRP Sheets are excellent replacement for metal/ cement/ PVC Sheets under harsh weathering, Chemical & Corrosive Environment.

Advantages

- Very high mechanical strength
- Shatter Resistance
- Light Weight
- Maintenance Free
- Size Flexibility
- Environment Friendly
- Excellent Corrosion Resistance
- Excellent Light Diffusion & Light Transmission
- Excellent Weather & Temperature Resistance
- UV Resistant
- High Impact Resistance
- Hail Storm Resistant Sheets
- Resistant to Chemicals
- Durable & Long Life
- Dimension Stability
- Low Thermal Conductivity

ADVANTAGES OF MACHINE-MADE FRP ROOFING SHEET

1. Uniform thickness, color, profile & any transportable length.
2. Anti-ageing U/V Resistant film can only be provided in Machine-Made FRP Roofing Sheets which enhances the life of Sheet and can give 15-20 years warranty.
3. Flexibility in Sizes and Thickness: FRP Sheets are custom made sheets and can be made in various sizes, thickness and designs.
4. Matching Profiles: FRP Sheets can be made in any matching profiles as required by the customer.
5. Durability:FRP Sheets have very long life, as these are tough and flexible.
6. Weather Resistant: FRP Sheets are resistant to extremes of weather, as these are waterproof, termite proof, and Acid proof.
7. Provides Day Light:FRP Sheets are translucent and hence provide essential daylight in long industrial sheds.
8. Saves Electricity and Reduce Electricity Bills: FRP Sheets are used for natural day light in long industrial sheds and provides day light for day work and reduces electricity consumption.
9. No Wastage: As FRP sheets can be made custom made sizes there is no wastage.
- 10.Translucent: FRP Sheets are translucent and hence does not allow direct sunlight. However it diffuses light and gives more brightness.
- 11.Freedom in Colour & Design: FRP Sheets can be made in any colour and in various designs.
- 12.Fire Retardant: FRP Sheets can be made fire retardant if asked by the customer.
- 13.Unbreakable: FRP Sheets are crash proof and unbreakable.
- 14.Light Weight: FRP Sheets are light in weight when compared with weight to strength ratio.
- 15.Easy to maintain: FRP sheets are easy to install, maintain & repair.
- 16.FRP Sheets have good thermal & electrical properties.
- 17.Dimension Stability: FRP Sheets have good dimension stability at high temperature.
- 18.High Impact Strength: Resists very high impact strength, which is evident by its application in various fields of automobiles, railways, boats, aircrafts and defense etc.
- 19.Glossy Finish: FRP Sheets can be made in single piece with both side smooth glossy finish and shining surface.
- 20.No. Fadedness in Colour: FRP Sheets are U/V Stabilized hence no or less effect on colors.
- 21.Provision for Fitting: FRP Sheets have complete provision for fittings and fixtures.
- 22.Design Versatility.

ADVANTAGES OF FRP SHEET OVER OTHER ROOFING & POLYCARBONATE SHEETS

FRP Translucent Roofing Sheets are chosen material for roofing, where controlled light transmission is required. As FRP are much stronger & stiffer material duly reinforced with glass fiber compared to other plastics & polycarbonate sheets. The corrugated profiles created in FRP is moulded process, whereas in other plastic & polycarbonate sheets is cold bending process which makes all the edges of bending a permanent weak point. Due to this moulded process in FRP Sheet, it gives better flexural rigidity reducing the deflection under wind, extreme of weathers as well as other incidental loads. Polycarbonate sheets are made generally thicker and in smaller sizes due to less rigidity and they require closer frame supports made of M.S. etc. FRP roofing and domes can be moulded in bigger size covering large spans and are also cost wise competitive with polycarbonate.

Most important, polycarbonate sheets being plastic material and co-efficient of expansion/ contraction are not compatible with PED/ M.S. structure, hence over a period of time tends to warp & also become brittle in the extremes of weather conditions.

Advantages of FRP Roofing Sheet over other Similar Skylight Sheet (Translucent & Transparent)

S. No.	Parameters	FRP Sheet	Acrylic Sheet	Polycarbonate Sheet
1.	Shatter Resistance	Yes	No	No
2.	Impact Resistance	Very High	Low	Medium
3.	Light Diffusion	Excellent	Glaring	Glaring
4.	Corrosion Resistance	Excellent	Poor	Good
5.	Thermal Insulation	Excellent	Poor	Poor
6.	Maintenance	Free	Frequent Replacement	Periodical Replacement
7.	Weight	Very Light	Light	Light
8.	U/V & anti aging film	Yes	No	U/V Optional Anti aging film- no
9.	Whether Resistant	Excellent	Very Poor	Medium
10.	Colour & Design	Many/ Versatile	Very Limited	Very limited
11.	Life	Min. 10 Years	Not Recommended	3-4 Years
12.	Co-efficient of expansion & contraction- vis-à-vis PEB/ M.S structure	Compatible	Very Poor	Not Compatible Notable Warping & Deformation after 1-2 years
13.	Tensile Strength	$\geq 1050 \text{ kg/cm}^2$	-	$< 676 \text{ kg/cm}^2$
14.	Co-efficient of Thermal Expansion	$0.9-1.8/^{\circ}\text{C} \times 10^{-5}$	-	$6.7/^{\circ}\text{C} \times 10^{-5}$
15.	Fire Performance (Opaque sheets)	Fire Retardant/ Optional	Highly Inflammable	Melts like Plastic

Properties

1. Excellent Corrosion resistant from all kind of water, alkaline, coastal environment, chemical fumes & extreme of weather temperature.
2. Shatter resistance & hailstorm resistant sheet.
3. High Impact Resistant Sheet.
4. Light Weight
5. Unbreakable
6. Dimension Stability even during long period of use.
7. Maintenance free
8. Thermal insulation: - FRP Sheets inherent advantage of inbuilt Thermal Insulation.
9. Environment friendly
10. Flexibility in sizes and thickness.
11. Freedom in colour & design.
12. Very long life (Warranty of 10 - 15 years against any manufacturing defect).

**FRP SHEETS - MACHINE MADE**

FRP SHEET DRAWING - PARTIAL LIST

FRP ROOFING PROFILES

S. NO	PROFILE	TROUGH DEPTH A	PITCH C/C B	WIDTH C	PROFILE NAME
01		32	250	1087	NATIONAL 1000
02		28	353	1126	NATIONAL 1060
03		30	250	1020	MULTI-RIB
04		31	195	855/1050	UNIMET
05		32	186	930	MULTI-CLAD
06		38	190	1060	ISPAT
07		44	130	694/824	UNIMET DECK
08		28.5	177.5	987	UNIMET TILE
09		41	215	430	MULTI-LOK
10		18	75	810	GC
11		50	146	1050	ASBESTOS

All Dimensions are in MM
TOLERANCE LEVEL = ±10MM

We also specialize in custom-made sheets to your requirements and specifications.

SPECIFICATION OF RAW MATERIAL

- ◆ Glass Fiber Chopped Strand Mat - IS: 11551: 1986
- ◆ Glass Fiber Rovings: IS: 11320: 1985
- ◆ Unsaturated Polyester Resin IS: 6746:1972

- ◆ Glass Fiber: Commonly known as Chopped Strand Mat is as per IS 11551-1986. Glass fiber chopped strand mat is used for reinforcement of unsaturated polyester resin systems. The type of glass fiber used is 'E' glass - a type of glass that does not contain more than 1% by mass of alkali, calculated as Na₂O commonly referred to as Low alkali glass.
- ◆ Glass Fiber Roving: As per IS 11320-1997 - commonly used for 'reinforcement of corners and edges.
- ◆ Unsaturated Polyesters Resin System: As per IS 6746-1972. The resin made by reacting saturated poly acids or anhydrides and unsaturated poly acids or anhydrides with polyols and dissolved in a suitable reactive monomer capable of under going cross linking, and those additives that are added or supplied by the supplier to attain certain properties, constitute the resin system. The minimum requirements to be specified shall be viscosity, acid value, gel time at 25°C and volatile content. The supplier shall declare nominal values for these properties.
- ◆ Curing Agents - Cobalt Napthanate (Accelerator and Methyl Ethyl Ketone Peroxide (M.E.K.P.) are the two hardeners used for curing of resins. These are mixed 2% by volume with resin for curing.
- ◆ N.C. Thinner: IS used for general cleaning and surface preparation for good bonding.
- ◆ PVA & Wax Polish as release agents.
- ◆ Pigments for desired colour as top coating.
- ◆ Gelcoat: Thixotropic unsaturated polyester resin as top two coats towards pigmentation and protection from all weir tier and extreme of weathers.
- ◆ Surface Mat: Surface mat is used as the initial and final layer during lining to have proper bonding with the existing surface and the top final for resin rich surface to protect from extreme of weathers.

FRP CHEMICAL RESISTANT SHEET FOR ROOFING & CLADDING

Technical Note on FRP Chemical Resistant Sheets for Industrial Building Roofing or Cladding

Industrial Roofing and Cladding are exposed to extremes of weathering conditions, water, chemical fumes or chemical environment and constant exposure to humid conditions. Under these conditions Roofing & Cladding are prone to corrosion and selection of Roofing material should be done accordingly.

Normally, Color Coated Profile Metal Sheets in 0.5 mm thickness are used for roofing in combination with FRP Skylights, FRP Gutter, Turbo Ventilator and Accessories under normal weathering and environmental conditions. In general, Mild Steel are highly corrosive material even under normal environmental conditions but the same is color coated with few microns of weather resistant paints which has very limited self life. But in presence of harsh weathering, chemical fumes or coastal environments, the M.S. Color Coated Profile Sheets are under constant threat of corrosion and not recommended for Roofing taking into consideration of minimum 10 years self life.

FRP Skylight / Chemical Resistant Sheets is a Fiber Glass Reinforced u/v stabilized unsaturated Polyester resin system composite material consisting of a network of reinforcing glass fibers embedded in a matrix of thermosetting resin. FRP offers almost unlimited possibilities for shape, profile, size and color, which is known for its high resistance to weathering & environmental corrosion, chemicals, fumes with inherent property of high strength, durability, water, chemical proof, light weight, dimensional stability, aesthetic appeal and easy to install and maintain.

At **“Rooffit”** we are India’s First World Class Continuous Machine molded Fiber Glass Reinforced Plastics (FRP) Skylight Roofing Sheets.... in any Profile & length with 15 – 20 years life to fast replace the other conventional Roofing Systems.

Properties & Advantages

- a. Excellent corrosion resistant from all kind of alkali, acid, chemical fumes, coastal environment, water and extremes of weather & temperature.
- b. **Superior Tensile Strength** – FRP Sheets has very high tensile strength to weight ratio.
- c. **Thermal Properties** – FRP Sheets have a low co-efficient of thermal expansion with compatible co-efficient of expansion and contraction vis-à-vis PEB/M.S. Structure.
- d. **Dimensional Stability** – FRP Sheets do not shrink or stretch within the limits of their strength even during long period of use.
- e. **Electrical Characteristics** – FRP Sheet has high di-electric constants.
- f. **Considerable Design Versatility** – Can be molded to match your profile in any transportable length.
- g. Available in Translucent & Opaque as required.

- h. Barcoal Hardness, water absorption, Fiberglass content & light transmission as per IS – 12866.
- i. Shatter and hail storm resistance sheet.
- j. High impact resistant sheet.
- k. Light weight and unbreakable.
- l. Environment friendly.
- m. Flexibility in sizes, color and thickness (as per span of Purlins)
- n. Maintenance free, easy to handle and install.
- o. Fire-retardant properties if required.
- p. Very long life — 15-20 years with anti-ageing film.



FRP CHEMICAL RESISTANT CLADDING SHEETS FOR CHEMICAL TREATMENT PLANT

FRP CHEMICAL LINING

Fiberglass Reinforced Plastics (FRP) lining is protective lamination on the desired surface (RCC, MS, WOOD, PLASTICS, etc.) to provide corrosion resistance against water, chemical proofing, high strength, dimension stability, and is known for its ease of application, maintain, and repair.

FRP lining is widely used in chemical industries for atmospheric corrosion resistance, weatherproofing, water, chemical proofing, and to maintain the purity of the material stored inside the containers. Further, FRP lining is used for repair and maintenance of wide range of RCC, construction like over head storage tanks, pipe lines, building construction cracks, water/chemical proofing, bridges & flyover constructions cracks etc. which provide not only corrosion resistance but also high strength and dimension stability at low cost and ease of application.

The desired reinforcement is given by use of fiberglass, which is available in various ranges and is applied as per requirement and utility. Ranges of fiberglass reinforcement are – CSM, Woven Roving, and Surface mat, Honeycomb mats. For corrosion resistance, water, chemical proofing wide range of resins like Isophthalic, Bisphenol, Vinyl Ester etc. are available and is applied as per requirement.

Raw Material used in FRP Lining

1. Glass Fiber—confirming to IS-11551-1986
2. Glass Fiber Rovings—confirming to IS-11320-1997
3. Unsaturated Polyester Resin confirming to IS-6746-1994
4. Cobalt Napthanate (Accelerator)
5. MEKP (Methyl Ethyl Ketone Peroxide)-Curing Agents.
6. N.C Thinner – for cleaning and surface preparation.

Steps for FRP Lining

1. The desired surface to be lined is cleaned properly using iron paper, grinders or sand blasting as required and proper surface is prepared free of water, grease, foreign deposition etc. The surface is checked properly to ensure excellent bonding between the surface & the FRP lining.
2. Once the surface preparation is done, as required, resin coat is applied and allowed to cure. This coat should fill up all the pinholes and the damaged area of the surface.
3. After coating, as desired, fiberglass mat (CSM)- Chopped Strand Mat is then spread on the surface and is wetted with resin and properly brushed to ensure minimum air trapping and good bonding with the surface. Fiberglass layers are applied depending on the thickness to be given. The lamination is allowed to cure.
4. Once the lamination is cured immediately one layer of surface mat (veil) is applied as final layer followed by one resin rich coat of resin for better corrosion resistance.
5. During lining, precaution are taken for proper bonding and if required custom-made arrangements are made like provision of inbuilt M.S/Wooden/aluminum stripe / pegs are provided.

6. Precaution is also taken at the time of surface finish as required and cracks; pits etc. are properly filled during surface preparation.
7. Good workmanship and supervision is of prime importance during execution of job, which needs technical and specialized workers to do the same.
8. FRP lining provides complete leak proofing, corrosion resistance, strength and very good life for virgin material lining as well as for old structures etc.



FRP CHEMICAL LINING ON TANK & VESSELS

FRP RAIN WATER GUTTER

Scope of Work

Supply and sealing of Fiberglass Reinforced Plastic (FRP) Gutter 4mm thick with step jointing of 50mm at site.

Nomenclature

Supply of 4mm thick FRP Gutter of **“Rooffit” brand an ISO-9001 Certified Company**, to be fabricated using two coats of Isophthalic grade UV stabilized Gel coat as top coating giving Glossy smooth surface on the top to take the extreme of weather and temperature followed by reinforcement of Chopped Strand Mat (CSM) and Woven roving (WR) duly impregnated with unsaturated polyester Isophthalic exterior grade UV stabilized resin to form tough laminate with extra reinforcement of MS strip of size 25 x 3 mm at a distance of 1000 mm c/c starting from one end of the gutter to be embedded with the gutter. The size of each gutter can be provided in 2.0-5.0 meters and color of your choice.

FRP GUTTERS	
	VALLEY GUTTER
	EAVES GUTTER
	U - GUTTER

Advantages of FRP Gutter

1. Single Casted with no Joints: FRP Gutter are casted in one single piece (Monolithically casted) hence leaving no scope for any water, moisture, insects, dusts etc. to seep inside the gutter and pose problem towards maintenance, leakages or bad smell. Only FRP gutter can be made in single piece, unlike M.S., G.I. or asbestos.
2. Maintenance Free: FRP gutter are made with inbuilt color, single piece casting and smooth glossy finish hence practically requires no maintenance except for cleaning with plain cloth once in a while or cleaning with soap water. Moreover, as the gutter is made with inbuilt color, it has very long life without fading of color and requires no repainting over regular interval, unlike M.S. or G.I.
3. Very Long Life: FRP as a material is very tough & rigid and resistant to extreme of weather and there is no aging of the material as a result it retains the same luster, strength and rigidity over a very long period, unlike M.S. or G.I.
4. Resistant to weathering & UV exposure as the FRP gutter are UV stabilized.
5. Corrosion Resistant: Excellent water and chemical resistance- the gutter is constantly exposed to Water, Factory corrosive fumes and chemicals.
6. Ease of Handling: FRP gutter are tough, light weight & scratch proof hence easy to handle, transport & install at site.
7. Ease of Installation: FRP gutter is fabricated as per design and shape required and is provided with inbuilt step for ease of jointing at site.

8. Ease of Repair: FRP as a material can be very easily repaired at site for any local or major damage, if any & more over repaired area is not visible.
9. Good electrical & thermal properties.
10. Good aesthetic appeal, strength, durability, waterproof & are termite proof.
11. Good dimensional stability at high temperature unlike MS or GI.
12. Can resist very high impact strength, which is evident by its application in various fields of automobiles, railways, boats, aircrafts and defense etc.
13. Excellent Mechanical, Physical and Biological properties.
14. Advantageous strength / weight ratio and rigidity.
15. Molding size virtually unlimited.
16. Considerable design versatility.
17. Choice of wide range of inbuilt color - maintenance free finishes.
18. Fire Retardant-if required.



FRP GUTTER - INSTALLED AT SITE

WIND DRIVEN ROOF TURBO VENTILATOR

Nomenclature

Providing & Fixing of **“Rooffit” brand an ISO-9001 Certified Company** Wind Driven Turbo Ventilators in desired neck size (21" /24") with anodized aluminum technically designed fins with stainless steel top plate and bottom fixing rings supported with double ball bearing system mounted on monolithically casted matching profile FRP Base Plate in 2 mm thick aerodynamically designed hood, with special UV stabilized inbuilt colour, gelcoat coating to take extremes of weather/ wind velocity and continuous ventilation complete to the satisfaction of Engineer-In-Charge.

Application for Hot & Humid Areas

Industrial roofing, skylights buildings, green houses, garages / porches, commercial building, domes & canopy for industrial & commercial building, railways, school, warehouses & residential etc.

WIND DRIVEN INDUSTRIAL TURBO VENTILATORS with Matching Fiberglass Reinforced Plastic (FRP) BASE PLATE.

Ventilation is simply the process of replacing stale, hot air with clean & fresh air hence providing pleasant working environment.

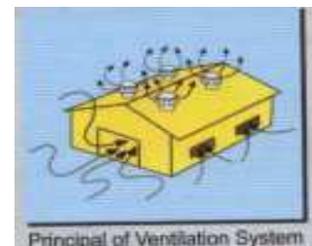
We are pleased to introduce ourselves as the leading manufactures of Wind Driven Industrial Turbo Ventilator with matching FRP Base plate, which enables the fixing & installation of turbo ventilator very convenient under various site conditions. Our Turbo Ventilator and the matching FRP base plate is technically designed to suit the various site conditions and provide maximum exhaust and rotation of air continuously, hence virtually providing pleasant and fresh air for healthy work environment. Our turbo ventilator is so designed having maximum fan blade hence providing optimal exhaust and at the same time is protective towards rain and dust.

Features & Advantages

- No Electricity – Wind Driven • Maintenance Free • Fresh Air 24 x 365 Days
- Uniform & Continuous Ventilation • Noiseless Installation & Operation • Easy to install • No Ingress of Rain Water • Fits on Any Type of Roof Surface and Gradient • Exhaust Stale, Hot, Humid Air and Fumes/ Pollutants Nonstop • Healthy Living - Increase in Productivity • Environment Friendly • Payback Period is Extremely Low – Good Savings • Rigid and Technically Designed Frame Construction to Withstand



Wind Driven Roof Turbo Ventilator



Principal of Ventilation System

Cyclone, Storm, High Wind Velocity and Twister • Turbo Ventilator are made in Aluminum and S.S. hence no Rusting • Suitable for any size Industrial, Commercial, Warehouse, Godown building.

Applications

- Automobile Industry • Food Industry • Textile (Spinning, Twisting, Sizing, Weaving, Dyeing, Knitting, Processing) • Chemical Industry • Engineering Industry
- Pharmaceutical Industry • Boiler House • Restaurants • Foundry • Generation House • Commercial building • Public Halls • Residence And Many Other Places.

Kindly provide us the following information to calculate No. of ventilators

Name of Organization: _____

Address: _____

Reference Person: _____

Designation: _____

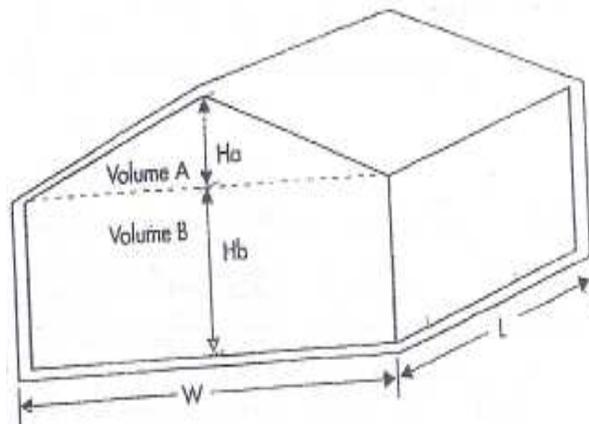
Address of Unit where to be Installed: _____

Dimensions

Length(L)_____ Width(W)_____

Height (Ha) _____ (Hb) _____

Note: All dimensions in Meters



S. No.	Particulars	Unit	Measurements
*1	Type of roof and make (AC Sheet /Metal/RCC)	-	
*2	Size of the sheets (L x B)	Mtr.	
3	Number of air change desired per hour	Nos. /Hr	
4	Avg. wind velocity (If available)	Kms /Hrs	
*5	Nature of plant activity	-	
*6	Types of Machinery installed	-	
*7	Number of persons working	Nos.	
8	Any Corrsivefumes or chemical discharge		
9	Existing Exhaust system (if any)		
10	Any special comment or requirement (if any)		

* Are Compulsory for our Estimation.

POLYCARBONATE SHEET

Polycarbonate Sheets are an excellent Roof glazing & cladding material with remarkable properties and performance making them one of the ideal choices for natural light transmitting for Roof glazing, Skylights, Pathways, Bus shelters, Shopping Archades, Canopies, Partitions, Greenhouses, Industrial glazing etc.

Polycarbonate sheets are a perfectly ideal medium for use in the Industrial, Commercial, Domestic, Govt. & Leisure Segments.

Range

Polycarbonate sheets are available in 3 different types, which can be used for various roof glazing application.

1. Transparent Plain Compact Sheets
2. Transparent Plain Embossed Sheets
3. Multi-Wall Sheets

Profiles

S. No.	Type	Standard Dimension	Thickness	Color
1.	Plain Compact Clear / Embossed Sheets	30.0 mtrs. x 1.22 mtrs.	1.5mm-10mm	Clear, Opal White, Grey Blue, Bronze, Green
2.	Plain Compact Clear / Embossed Sheets	30.0 mtrs. x 2.1 mtrs. (Subject to availability)	1.5mm-10mm	Clear, Opal White, Grey Blue, Bronze, Green
3.	Multi-Wall	11.8 mtrs. x 2.11 mtrs.	6mm-20mm	Clear, Opal White, Grey Blue, Bronze, Green

Solid Polycarbonate sheets are available in any matching Customised Profile to meet your requirements.

Advantages

Light Weight
Design Flexibility
U/ V Resistance
High Impact Strength
Excellent Light Transmission
High Durability
Rust Proof
Eco-Friendly

Applications

Industrial Roofing
North Light
Parking Area
Garages & Verandahs
Porches & Walkways
Stadium
Partition & Window Glazing
Domes & Canopies

Note: - FRP Sheets has all the above advantages with added feature of Shatter Resistance- (FRP Sheets are Hailstorm resistant), Excellent Light Diffusion & Less Heat Transmission with more Freedom in Color & Design.



POLYCARBONATE DOME



POLYCARBONATE MULTIWALL SHEETS



PROFILE SHEET

OTHER CREDENTIALS

CLIENT LIST



PARTIAL LIST OF OUR CLIENTS

S. No.	Our Clients & End User Clients
1.	Steel Authority of India (Durgapur)
2.	Pepsico India Holdings Ltd. (Jaunpur Site)
3.	Hindalco Industries
4.	B.G. Shirke Construction Technology Pvt. Ltd.
5.	McNally Bharat Engineering Company Ltd.
6.	BIL Infratech Ltd.
7.	Jindal Stainless Steel Ltd.
8.	J.S. Engineers Projects Pvt. Ltd.
9.	Larsen & Toubro Ltd.
10.	S. K. Mines
11.	IISCO Steel Plant
12.	ISO Lloyd Engineering Technologist Pvt. Ltd.
13.	ANG Forging Pvt. Ltd.
14.	Jain Irrigation
15.	Divine Alloys & Power Co. Ltd.
16.	EnviroPol Engineers Pvt. Ltd.
17.	Intertouch Metals
18.	MNF Metals & Forming
19.	Era Metal Building Systems
20.	Kirby Building System India Pvt. Ltd
21.	Tecpro Systems Ltd
22.	NTPC, Korba
23.	NTPC, Bongaigaon
24.	Good Year India Ltd
25.	Suzuki Motor Cycle India Pvt. Ltd
26.	Maruti Suzuki Ltd
27.	Honda SIEL Car India Ltd
28.	Escorts Agri Machinery Group
29.	Escorts Auto Suspensions Products
30.	Everest Industries
31.	Wipro Ltd.
32.	Hero Honda Motors Ltd
33.	Honda Scooters & Motorcycles India Pvt. Ltd.
34.	Vishakhapatnam Port Trust
35.	Bhushan Power & Steel Ltd. (Kolkatta)
36.	Birla Tyres (Haridwar)
37.	Bharat Heavy Plate & Vessels Ltd.
38.	Century Well Roofing India Pvt. Ltd
39.	CPWD Delhi
40.	IGI Airport Delhi
41.	Mahindra & Mahindra (Punjab Tractor Ltd. Mohali)
42.	Metecno India Pvt. Ltd.
43.	Rail Coach Factory Kapurthala
44.	Reynolt Nission – Chennai
45.	Tata Pasco Motors
46.	Rohan Builder India Pvt. Ltd
47.	Ashok Leyland
48.	Reliance Industry
49.	M.G. Industries
50.	Mafatlal Denim Limited

S. No.	Our Clients & End User Clients
51.	Century Pulp and Paper
52.	Multicolor Steels Pvt. Ltd.
53.	Ramky Infrastructure Ltd
54.	OM Logistics Ltd.
55.	P.C Colour Steels India Ltd.
56.	Pam Builders Pvt. Ltd.
57.	Tiger Steel Engineering India Pvt. Ltd.
58.	Patanjali Ayurved Ltd.
59.	Lloyd Insulation India Ltd.
60.	JKS Infrastructure
61.	Ahluwalia contracts India Ltd.
62.	Roca Bathroom Products Private Ltd.
63.	Rajasthan Textile Mill
64.	SMCC Construction India Ltd.
65.	Spectec Building Products Pvt. Ltd.
66.	Sujlon Energy-Coimbatore
67.	Supertech India Pvt. Ltd.
68.	Steel Strips Wheels Ltd.
69.	K.R. Pulp & Papers Ltd.
70.	Unicon Building Systems
71.	Unimet Profile Pvt. Ltd.
72.	Vardhman Industries Ltd.
73.	VXL Technology
74.	Vallabh Textile Ludhiana
75.	Videocon Industries
76.	Interarch Building Products Pvt. Ltd.
77.	Bajaj Auto Ltd.
78.	Euro Container Ltd.
79.	Caparo Fastner
80.	Prestar Infrastructure Private Ltd.
81.	Petron Civil Engineers Private Ltd.
82.	IOCL Bathinda Refinery
83.	Modern Steel Ltd.
84.	Doshion Veolla Water Solution Pvt. Ltd.
85.	Globe Civil Project Pvt. Ltd.
86.	Khanna Paper Mill Ltd.
87.	Power Grid Corporation of India Ltd.
88.	G.S. Developer & Contracts Pvt. Ltd.
89.	Jai Bharat Maruti
90.	Nahar Spinning Mill
91.	Hindustan National Glass and Industries
92.	Kejriwal Casting Ltd.
93.	Kohinoor Rice Mill
94.	Integral University Lucknow
95.	Empire Home Appliances Ltd.
96.	Alchemist Metal Ltd.
97.	YKM Bottling Company Pvt. Ltd.
98.	Sunbeam Auto Industry
99.	Mark Exhaust (System Limited)
100.	Blue Dart Express Ltd.
101.	A. Infrastructure Ltd.
102.	Jindal Metecno India Ltd.
103.	Amtech Esters Pvt. Ltd.
104.	Ashai India Glass Ltd.
105.	ISGEC Yamuna Nagar
106.	Auto Meters Pvt. Ltd.
107.	Avery Cycle Industrial Ltd.
108.	Amtek Auto Ltd.

TEST REPORTS



ARBRO™
 PHARMACEUTICALS LIMITED
 (ANALYTICAL DIVISION)
 ISO 9001 : 2008 Certified
Govt. Approved Test House
 4/B, Kirti Nagar Industrial Area, New Delhi-110 015
 Tele : 011-45754575 Fax : 011-45754545
 e-mail : arbrotab@arbropharma.com, Website : www.arbropharmaindia.com
CERTIFICATE OF ANALYSIS

P



Sample	: FRP SHEET (IS-12866)	Report No.	: NR-12031424
Mfgd By	: N.S.	Received On	: 14/03/2012
Supplied By	: N.S.	Mfg.Lic.No.	: N.S.
Submitted By	: SHIV SHAKTI FIBRE UDYOG	Ref. No.	: *
Address	: PLOT NO.1-G, NORTHERN INDIA COMPLEX, 20/3, MATHURA ROAD, FARIDABAD.		
Batch No.	Mfg. Date	Expiry Date	Batch Size
N.S.	N.S.	N.S.	N.S.
			Sample Qty
			3 NOS

RESULTS OF ANALYSIS

Date of start of analysis 15-03-12 Date of completion of analysis 20-03-12.

*Ref.No :- P.O. No. KDM 12011 dt. 16-01-2012.

Reference protocol :- IS-12866-1989

Description :- Sample described as FRP sheet 2mm thick.

<S.No >	<Parameter>	<Result>	<Method>	<Specification>	<conformity>
1.	Load Deflection Test (Deflection: 15 mm Max, Load 1150 N Maintain at least 5 minutes)	: Passes the test Load:1172N Deflection:11.5mm	IS-12866-89 Annex-E	None of the sheet shall rupture although minor cracking around the areas of support or loading shall be permitted.	Yes
2.	Glass content (% By Weight)	: 36.57	IS-12866-89 Annex -A	30 Min	Yes
3.	Water Absorption (Absorption coeffi- cient %)	: 0.24	IS-12866-89 Annex -B	0.30 Max	Yes
4.	Hardness(Barcol)	: Passes the test	IS-12866-89 Annex-C	shall not increase by more than 30 % of its initial value	Yes
5.	Bolt Shear Test (N) :	508	IS-12866-89 Annex-D	375 Min	Yes
6.	Density(kg/m ²) Thickness 1.10mm + 0.15	: 1.85	IS-12866-89	1.85	-

REMARKS : PARTY ASKED FOR THE ABOVE TESTS ONLY

Page 1 of 1

Date : Tuesday, March 20, 2012

Person in Charge
 Rajkumar Shrivastava
 Dy Manager Mechanical

VENDOR APPROVALS



मेकॉन लिमिटेड (भारत सरकार का संस्थान)
MECON LIMITED (A GOVERNMENT OF INDIA ENTERPRISE)



प्रधान कार्यालय (Head Office) : राँची-2, झारखण्ड, भारत, Ranchi-2, Jharkhand, India, फोन / Phone : 0651-2483000, फैक्स / Fax : 0651-2482189/2482214
 ई-मेल / E-mail : ranchi@meconlimited.co.in, वेबसाइट / Website : http://www.meconlimited.co.in

Ref.No.11.80.9181/Proc.Serv./39/S-349/V-5139

Date:06-AUG-11

SHIV SHAKTI FIBRE UDYOG
 Plot No. 1-G, Northern India Complex
 20/3, Mathura Road
 FARIDABAD 121006 Haryana
 Tel.:0129 4067 393 98103 97393

Sub : Vendor Registration with MECON

Ref : Your letter No. NIL dated 13-JUL-10

Dear Sirs,

Kindly refer to your above mentioned letter. We are pleased to inform you that your company is enlisted in our Approved Vendor List for the following, which is now valid till 05-AUG-14.

COKE OVENS & CHEMICALS BY-PRODUCT

- 1 CHIMNEY (FRP)
- 2 DUCTING (FRP/PVC-FRP/PP-FRP)
- 3 LAUNDERS (FRP/PVC-FRP/PP-FRP)
- 4 PIPE LINES (FRP/PVC-FRP/PP-FRP)
- 5 SCRUBBERS (FRP/PVC-FRP/PP-FRP)
- 6 STACK (FRP/PVC-FRP/PP-FRP)
- 7 TANKS (FRP/PVC-FRP/PP-FRP)
- 8 TANKS LINING - POLYESTER/GLASS/EPOXY MORTAR SCREEDING
- 9 TURNKEY CONTRACTOR - ACID RESISTANT LINING WORKS

COKE OVENS & CHEMICALS COKE OVEN

- 1 HOOD (FRP/PVC-FRP/PP-FRP)

NON-FERROUS DEPARTMENT EQUIPMENT *

- 1 FRP GRATINGS
- 2 FRP SHEET

STRUCTURALS *

- 1 PRE-FAB ITEMS (FRP translucent roofing sheets, Metal roofing sheets, Polycarbonate sheets, FRP rainwater gutter, FRP doors, FRP custom made products)

Please note that this enlistment is subject to satisfactory execution of orders in delivery and quality of above mentioned items when ordered for various projects.

Further it may please be noted that any change in the product, location of works/ sales office, Management/ Organisation structure etc. shall be intimated to us promptly along with relevant document for our necessary action, failing which our enquiries may not reach you and also your enlistment with us will be liable to be cancelled. Kindly keep sending your annual report every year. Your performance shall be periodically reviewed by us for continuation of your enlistment with MECON.

The above enlistment does not necessarily confirm issue of tender enquiries, which is at the sole discretion of MECON/MECON's client. It is your responsibility to apply for renewal of your registration at least 2 months in advance of expiry of this validity period.

JH

Major Offices:

नई दिल्ली/New Delhi
 +91-11-2204 1201(Phone)
 +91-11-2204 1214(Fax)
 delhi@meconlimited.co.in

मुंबई/Mumbai
 +91-22-2781 2155-58(Phone)
 +91-22-2781 2275(Fax)
 mumbai@meconlimited.co.in

कोलकाता/Kolkata
 +91-33-2282 2381-82(Phone)
 +91-33-2282 4441(Fax)
 kolkata@meconlimited.co.in

चेन्नई/Chennai
 +91-44-2626 1911(Phone)
 +91-44-2626 1474(Fax)
 chennai@meconlimited.co.in

बैंगलूरु/Bangalore
 +91-80-2657 1661-63(Phone)
 +91-80-2657 6352(Fax)
 bangalore@meconlimited.co.in

इंजीनियर्स
इंडिया लिमिटेड
(भारत सरकार का उपक्रम)

 ENGINEERS
INDIA LIMITED
(A Govt. of India Undertaking)

पंजीकृत कार्यालय: इंजीनियर्स इंडिया भवन, 1, भीकाएजी कामा प्लेस, नई दिल्ली - 110066
Regd. Office : Engineers India Bhawan, 1, Bhikaji Cama Place, New Delhi - 110066

No.EIL/ARCH/VL01/09.A

March 22, 2013

M/s. Shiv Shakti Fibre Udyog
Plot No. 1G, Northern India Complex
20/3 Mathura Road
Faridabad (Haryana)

Subject: Vendor approval for registration with EIL in 'List of approved manufacturers of Architectural Products'

Dear Sir,

With reference to your request on the subject matter, we are pleased to inform you that based on the documents submitted by you; your following products have been approved and listed in our above mentioned subject document : -

- (1) FIBER GLASS SHEET (FRP SHEET)
- (2) POLYCARBONATE ROOFING SHEETS (SHIV SHAKTI)
- (3) METAL ROOFING SHEETS - COLOUR COATED (PPGL, PPGI) & BARE GALVALUME (SHIV SHAKTI)

The enlistment of these products is without any commitment to send enquiries/ place orders on behalf of EIL or its clients. The enlistment is also subjected to following conditions:

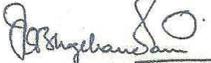
- (a) Conformance of the product with specifications, description of BOQ etc. of the tender document.
- (b) Submission of relevant valid test certificates, BIS license (in case of BIS approved/ listed products) etc. to EIL site-in-charge.

Continuance of the enlistment shall depend on satisfactory performance of the product(s) and the same shall be reviewed periodically based on the feedbacks from the construction site(s), clients etc.

In case of any change in any of the listed product's specifications or change your company's location or profile, you are requested to inform the same to us immediately.

Thanking you,

Very truly yours,



(J.K. BHAGCHANDANI)
H.O.D. (ARCHITECTURE)

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Certificate of Registration

CDG Certification Limited has assessed the Quality Management System of

Shiv Shakti Fibre Udyog

(Brand Name: Rooffit)

Unit I: Kila No. 71/8/1/1, Village Hasangarh, Teh. Sampla, Distt. Rohtak

(Haryana) / INDIA

Unit II: Plot No 1 G, Northern India Complex, 20/3, Mathura Road, Faridabad

(Haryana) / INDIA

for following spheres of activities:

**Manufacturers, Suppliers & Exporter of Complete Industrial Building & Roofing System-
PEB, Metal Color Coated Sheets, Fiberglass Reinforced Plastics (FRP) & Polycarbonate
Sheets, FRP Gutter, FRP Lining, FRP Chemical Resistant Sheets, Roof Ventilator, FRP
Gratings, FRP & PVC Doors & Frames**

corresponding to:

ISO 9001:2008

Certificate Number: CDG/QMS/11147

This certificate is valid from 03 Sept 2013 until: 02 Sept 2016 and remains valid subjected to satisfactory surveillance audits.

Re-certification Audit due before: 02 Sept 2016

1st Surveillance Audit due before: 02 Sept 2014

Issue 1. Certified since: 03 Sept 2013

2nd Surveillance Audit due before: 02 Sept 2015

Managing Director

CDG Certification Limited

H.O.: 308, 11th Floor, L.S.C., C Block, DDA Market, Vikas Puri, New Delhi 110018 INDIA
T: +91 11 42674494 E: info@cdgcertification.com W: www.cdgcertification.com



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