




www.njengitech.co.in

ALL MAINTANANCE & CORROSION FREE COMPOSITES SOLUTION

We Build Our Future

INDEX >>



The background of the entire page is a photograph of an offshore oil rig. The rig's complex metal structure, including pipes and walkways, is visible in the foreground and middle ground. The sun is setting or rising over the ocean, creating a bright, golden glow that reflects on the water's surface. The sky is filled with soft, white clouds. The overall scene is industrial yet serene.

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We are committed for quality

Fastest Growing **FRP Organization** in India.



About NJ Engitech

NJ Engitech is a reference to wide experience in composite FRP GRP Walkway concept generation to product development in the new products we entered into this business field to cater all over the India and the globe. We reaffirm our commitment for on time delivery, strict compliance to Client's stipulated Product Quality requirement and total Client satisfaction on all other aspects like prompt response to queries/complaints, Service during Product Warranty period etc.

Mission

NJ Engitech is dealing with all range of composite or metal composite products. providing all design services related to composite or metal composite products. Ready to accept challenges. To cater our services worldwide. One stop solution for composite or metal composite products and services. To serve in all industrial segments. To serve all the range of accessories products as per industrial needs.

Vision

To serve best to the valuable customers and to become a leading one stop composite solution company in India. to give quality work and service with required valuable time to create real credentials with valuable customers for long term business and services to serve all the industries where we can deliver composite products and services to develop the new products in composite or metal composite as per industrial needs.

Advantages of FRP/GRP/ FIBERGLASS



Corrosion/Chemical Resistance



High Strength



Light Weight



Electrical Non Conductivity



Thermal Non Conductivity



EMI/RFI Transparent



Ease of Fabrication



Low Life Cycle Cost



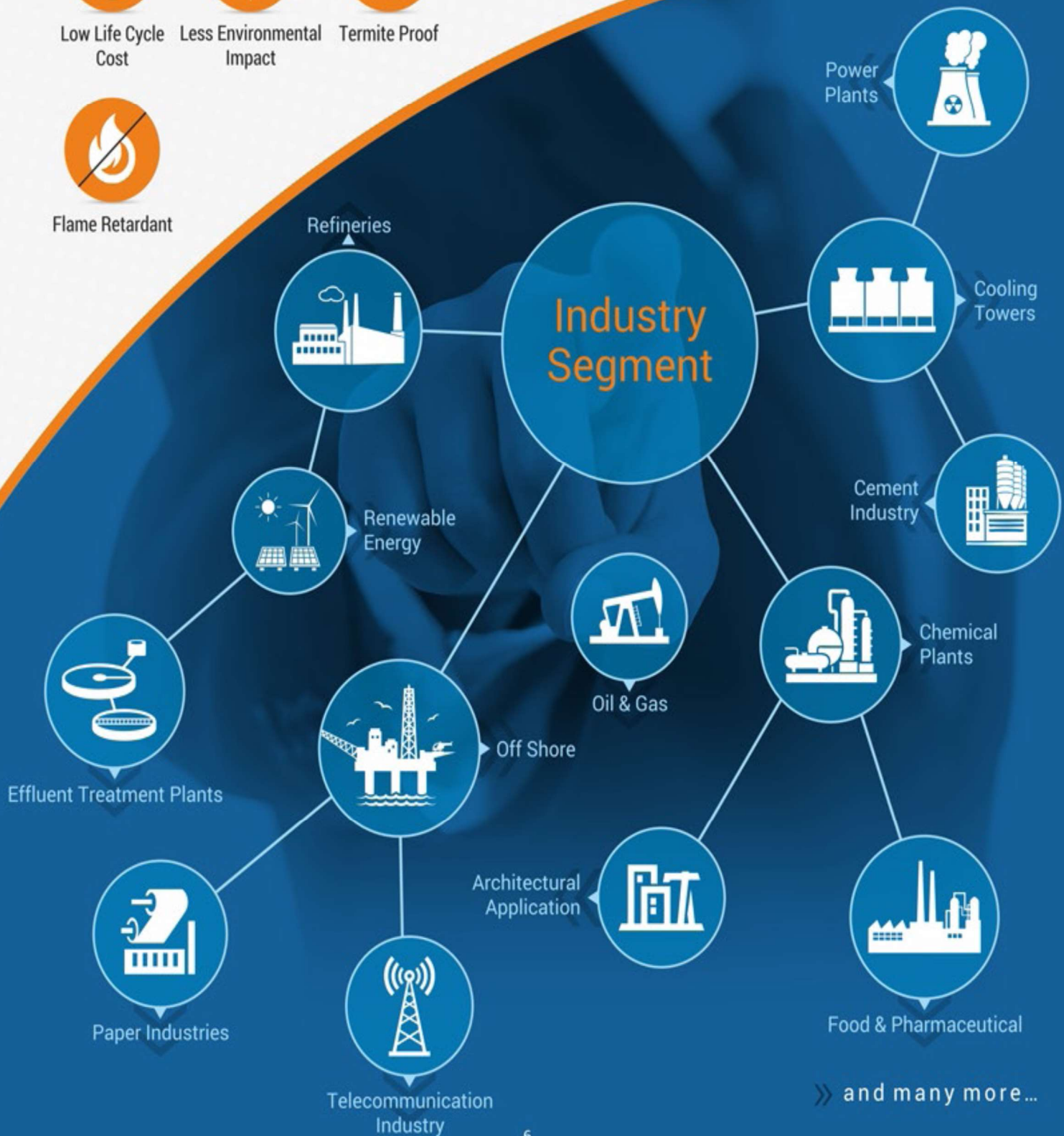
Less Environmental Impact



Termite Proof



Flame Retardant



>> and many more...

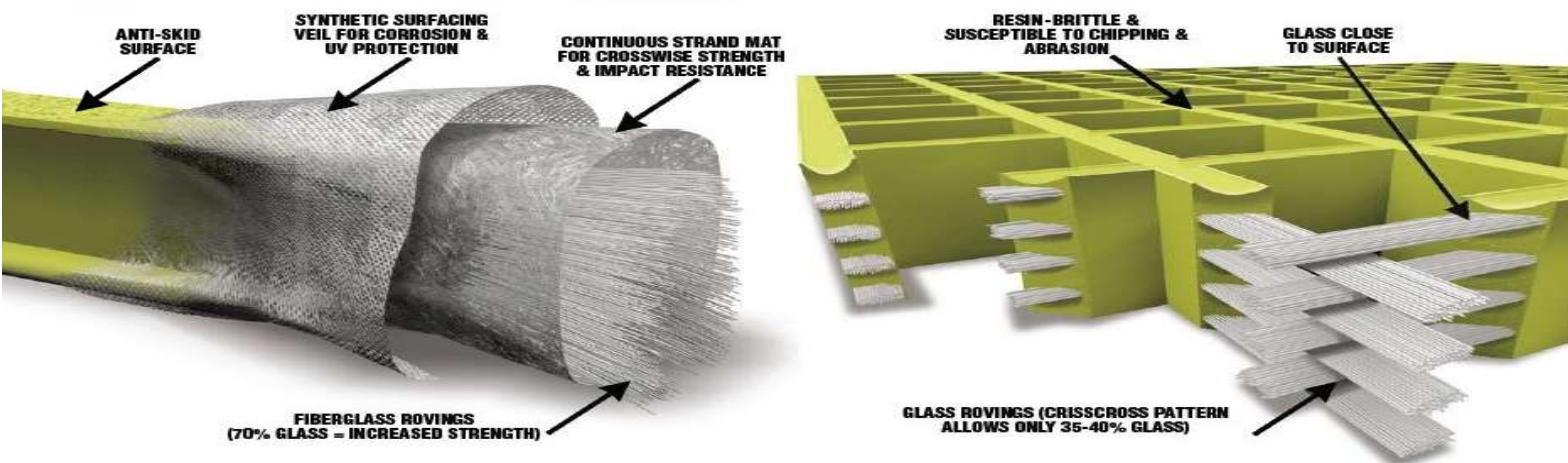
What is composite Material?

Composite material are made up of two more material on a macroscopic scale. Polymer matrix composites are plastics (resin) within which there are embedded fibres. The plastic is known as the matrix, and the fibres orientated within it are known as the reinforcement.

The reinforcement tends to be stiffer and stronger the matrix providing stiffness and strength. Reinforcement is laid in a particular direction, within the matrix, so that the resulting material will have different properties in different direction i.e., composites have anisotropic properties. This characteristic is exploited to optimise the design and provide high mechanical performance where it is needed.

What is FRP/GRP/ Fiberglass?

Fiber Reinforced Plastic/ Glass Fiber Reinforced Plastic is a composites material made of a polymer matrix reinforced with fibres. The Fiber are usually fiberglass, Carbon or Aramid while the polymers is usually an Epoxy, Vinyl ester or Polyester Thermosetting Plastic.



Comparison with Conventional Materials

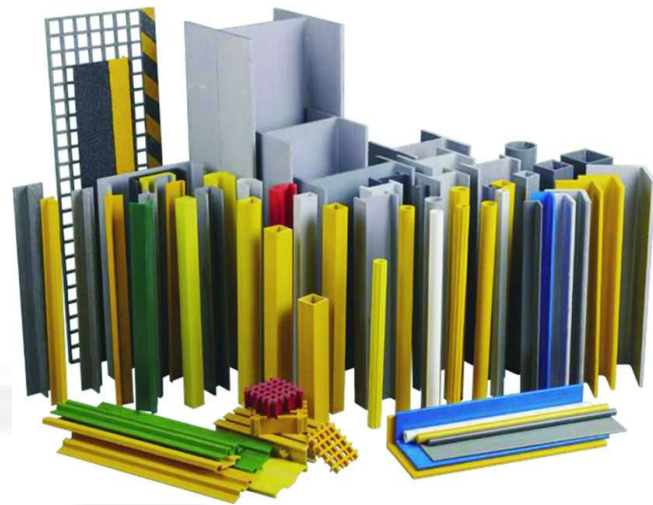
	NJE/ FRP	STEEL	ALUMINIUM	TIMBER
Corrosion Resistance	High	Low	Medium	Low
Strength	High	High	High	Low
Weight	Low	High	Low	Medium
Electrical conductivity	Low	High	Low	Moderate
Thermal Conductivity	Very Low	High	High	Low
EMI/RFI Transparency	Yes	No	No	Yes
Fabrication	Easy	Easy	Moderate	Easy
Life Cycle Cost	Low	Moderate	Moderate	High
Environmental Impact	Low	High	High	Low

We are Solved Corrosion Problem



FIBERGLASS STRUCTURAL PROFILES

GRP or FRP Structural pultruded profiles are manufactured by combining a resin matrix with a fiber reinforcement. This is Formed and cured in a continuous process creating a product of extraordinary strength and resilience. GRP Structural Pultruded profiles provide a variety of benefits and mechanical properties matching or exceeding steel equivalents. A wide range of structural profiles are available including U Channel, I-Beam, Tube Box, Angle, Rod & Handrail.



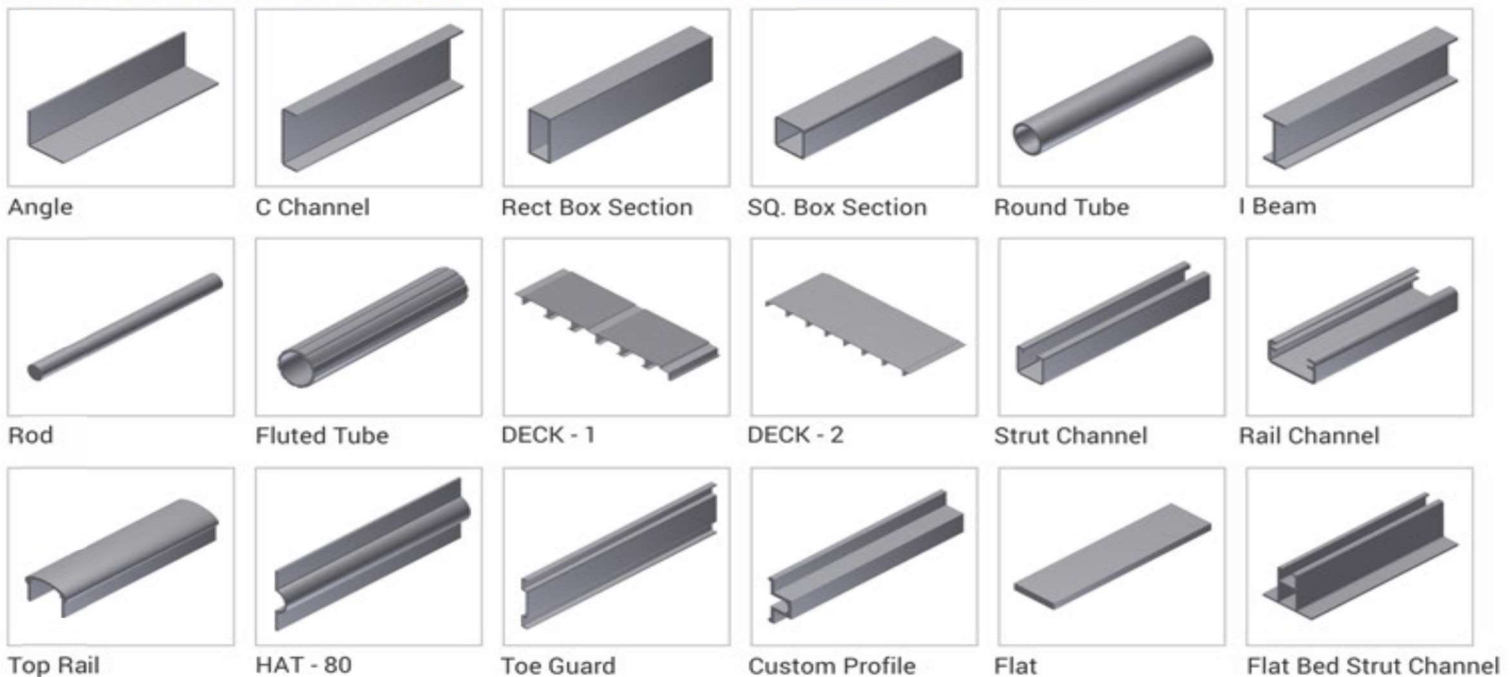
Resin System

As a standard, Isophthalic polyester resin are used for the matrix. To fulfil special requirements the following resin type are applied:

- Isophthalic resin: Moderate corrosion resistance and fire resistance.
- Vinyl ester resin: extreme corrosion resistance and fire resistance.

For design parameters ask for design manual from sales team.

Type of Structural Profiles



The profiles listed are only a very small proportion our range. If you should required a custom profile please do not hesitate to contact us.

FIBERGLASS
ADVANTAGE



INDUSTRY
SEGMENT

VARIOUS PROPERTIES OF FIBERGLASS PULTRUDED STRUCTURAL PROFILE

Mechanical Properties	Standard Followed	Units	Lengthwise Min. Value	Crosswise Min. Value
Tensile Stress	ASTM D-638	MPa	206.8	48.2
Tensile modulus	ASTM D-638	GPa	17.2	5.5
Compressive Stress	ASTM D-695	MPa	206.8	103.4
Compressive modulus	ASTM D-695	GPa	17.2	6.9
Flexural Stress	ASTM D-790	MPa	206.8	68.9
Flexural Modulus	ASTM D-790	GPa	11	5.5
Izod Impact	ASTM D-256	J/mm	1.28	0.22
Ultimate Bearing Stress	ASTM D-953	MPa	206.8	206.8
Modulus of Elasticity	Full Section	GPa	17.9	-
Shear Modulus	Full Section	GPa	2.9	-
Poison's Ratio	ASTM D-3039	mm/mm	0.33	-
Short Beam Shear	ASTM D-2344	MPa	31	-

Physical Properties	Standard Followed	Units	Min. Value
Barcol Hardness	ASTM D-2583		45
24 Hours Water Absorption	ASTM D-570	%	Max 0.6
Density	ASTM D-792	gm/cc	1.72-1.95
Glass Content	ASTM D-2584	%	min 55%
Limiting Oxygen Index	ASTM D-2863	%	min 30%

Electrical Properties	Standard Followed	Units	Min. Value
Arc Resistance Lengthwise	ASTM D-495	Seconds	120
Dielectric Strength Lengthwise	ASTM D-149	kV/mm	4.5

Flammability Properties	Standard Followed	Units	Min. Value
Flame Spread	ASTM E-84	Flame spread	Less than 25 mm
Flammability	ASTM D-635	Seconds	Less than 5 sec.
Vertical Burn Test	UL 94	---	V0

Profiles are checked for Visual Defect as per ASTM D 4385-02 and Dimensional Tolerance as per ASTM D 3917-12



FIBERGLASS CABLE MANAGEMENT SYSTEM

NJ Engitech are gaining more popularity than the traditional material due to several benefits and durable performance in challenging environments. In the area of cable management, NJ can offer a versatile range of solutions, from standard product range customers-tailored solutions.

Quality & Consistency

NJ Products performance and reliable as all the products go through comprehensive programs of quality control in a world-class testing laboratory.

Engineering & Design Assistance

All Engineering and design assistance for your project will be handled by our highly qualified and experienced staff. With our wide exposure we would be able to tackle a unique design problem that you face.

Specification Assistance

The most important for the success of a composites cable management solution is the specification phase. Our experience of installations in a wide variety of difficult environment can help you specify the best resin system and the correct structural properties that are long lasting and low on acquisition cost.

THE FIBERGLASS ADVANTAGES

As compared galvanizes steel

- Corrosion resistance costing not required.
- No risk of injury.
- Resistance to salt water, sulphur, chlorine or basis environments.

As compared of aluminium

- No electrolytic corrosion due to contact of two metal in humid environment.
- Much more longer life span in basic chlorine or halogen atmosphere.

As compared to stainless steel

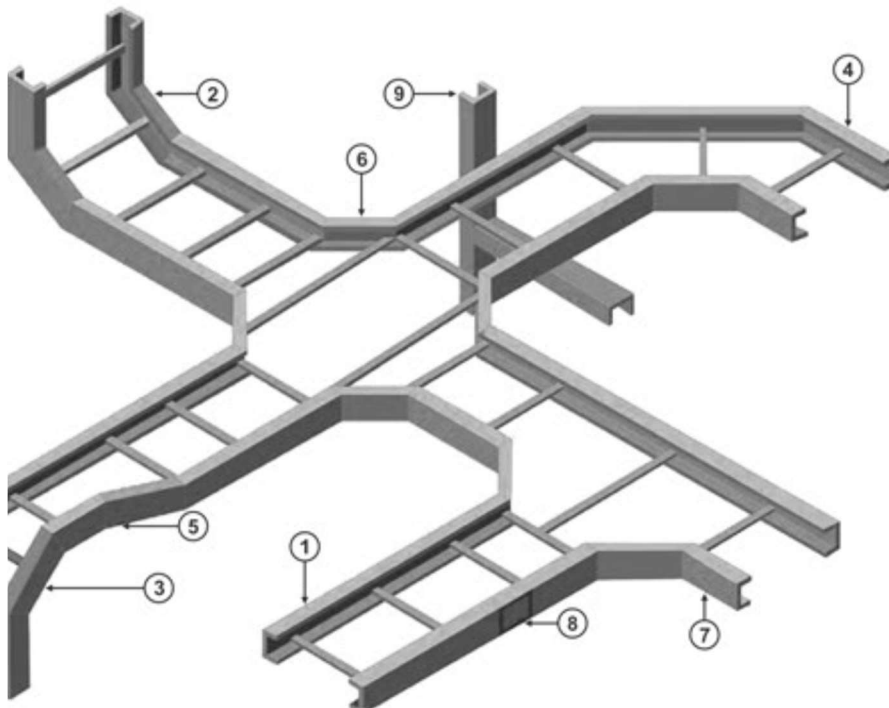
- Absence of corrosion under tension(mechanical)
- Recommended in chlorine environment.

As compared to metals

- No earthing required.
- Resistance to corrosion contributes to reduce the life cycle cost
- No requirements for electric continuity test.
- Will not deform under impact.
- Easy to work (Cut, Drill) at site and is much easier to move and place because it is light weight.

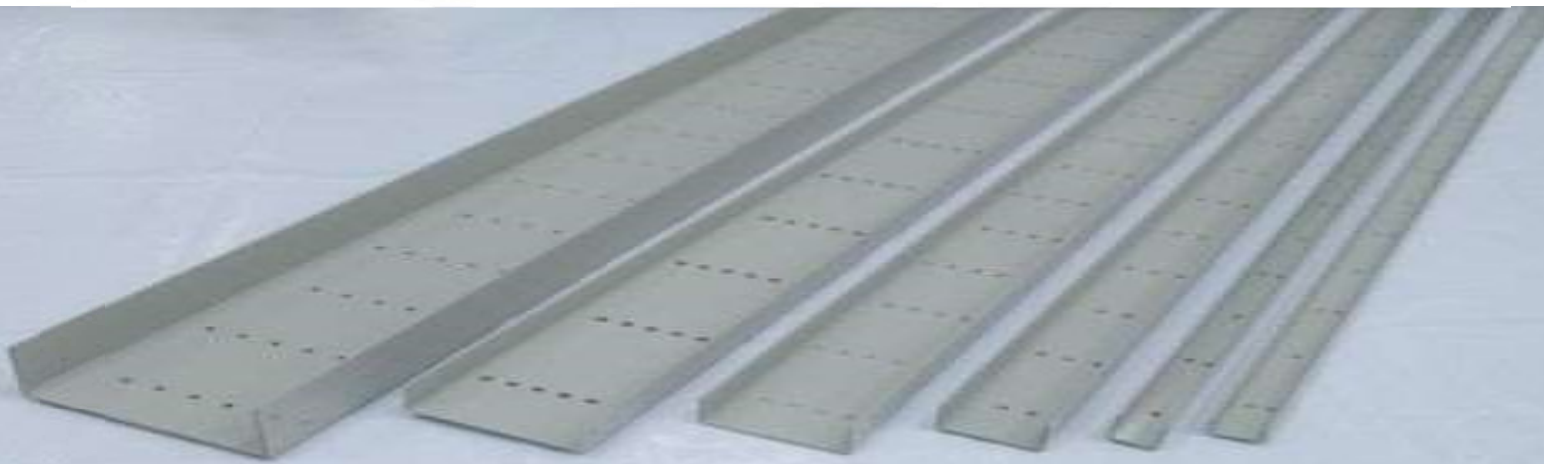


Fibreglass Reinforced plastics (FRP) are increasingly being considered as a superior material of construction in many fields. FRP has proved immensely beneficial in a wide range of industrial applications due to the following salient features



Fiberglass Cable Tray Assembly System

- | | |
|---|---------------------------|
| 1 | Straight Run |
| 2 | 90° Inside Vertical Bend |
| 3 | 90° Outside Vertical Bend |
| 4 | 90° Horizontal Bend |
| 5 | Left Hand Reducer |
| 6 | Horizontal Cross |
| 7 | Horizontal Tee |
| 8 | Splice Plate For Joining |



Working Load Capacity.

The working load capacity represents the ability of a fiberglass cable tray to support the static weight of cables. It is equivalent to destructive load capacity, with minimum safety factor of 1.5

Width of Cable Tray	Side Rail	Load Kg/Mtr. For Support span 2.0 Mtr.
150mm	75	35
300mm	75	65
450mm	100	85
600mm	100	95
750mm	100	125
900mm	150	155

Concentrated Static Load is 70 Kg. at the centre of the span.
As per NEMA loading standard.

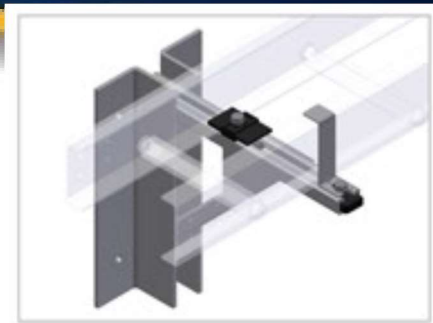
Load	Lb/ft.	Kgs/Mtr.	Side Rail	Load Class
A	50	74	75	8A
B	75	111	100	8C, 12C, 16A
C	100	148	150	12C, 16B, 20A, 20C

Support span : 8, 10, 12 are in Feet

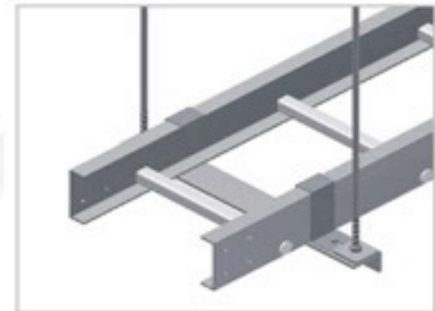
Effect of Temperature

Strength properties of fiberglass are reduced when continuously exposed to elevated temperatures. Working loads shall be reduced based on the following:

Temp. in °F	75	100	125	150	175	200
Approx. % of Strength	100	90	78	68	60	52



Wall Mounted



Ceiling Hanged

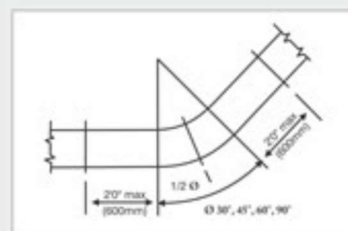
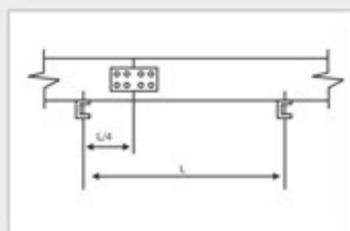
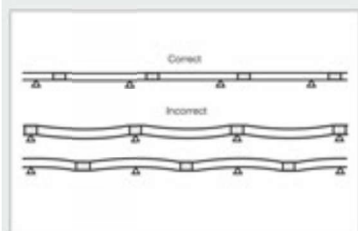


Strut Channel

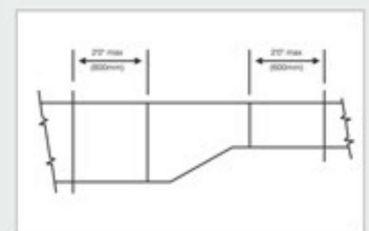


Floor Mounted

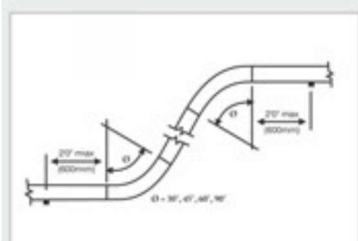
As Per Nema FG1, Splice Plate Is Recommended To Be Located At ¼ Of The Span From The Support, Where The Bending Moment Is Zero.



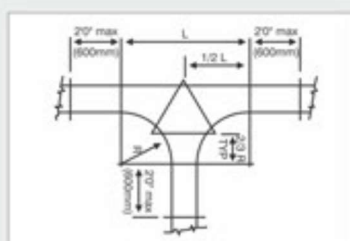
Horizontal Elbows



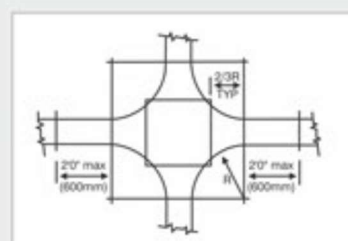
Offset Reducer



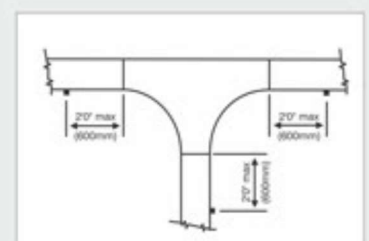
Vertical Elbows



Horizontal Tee

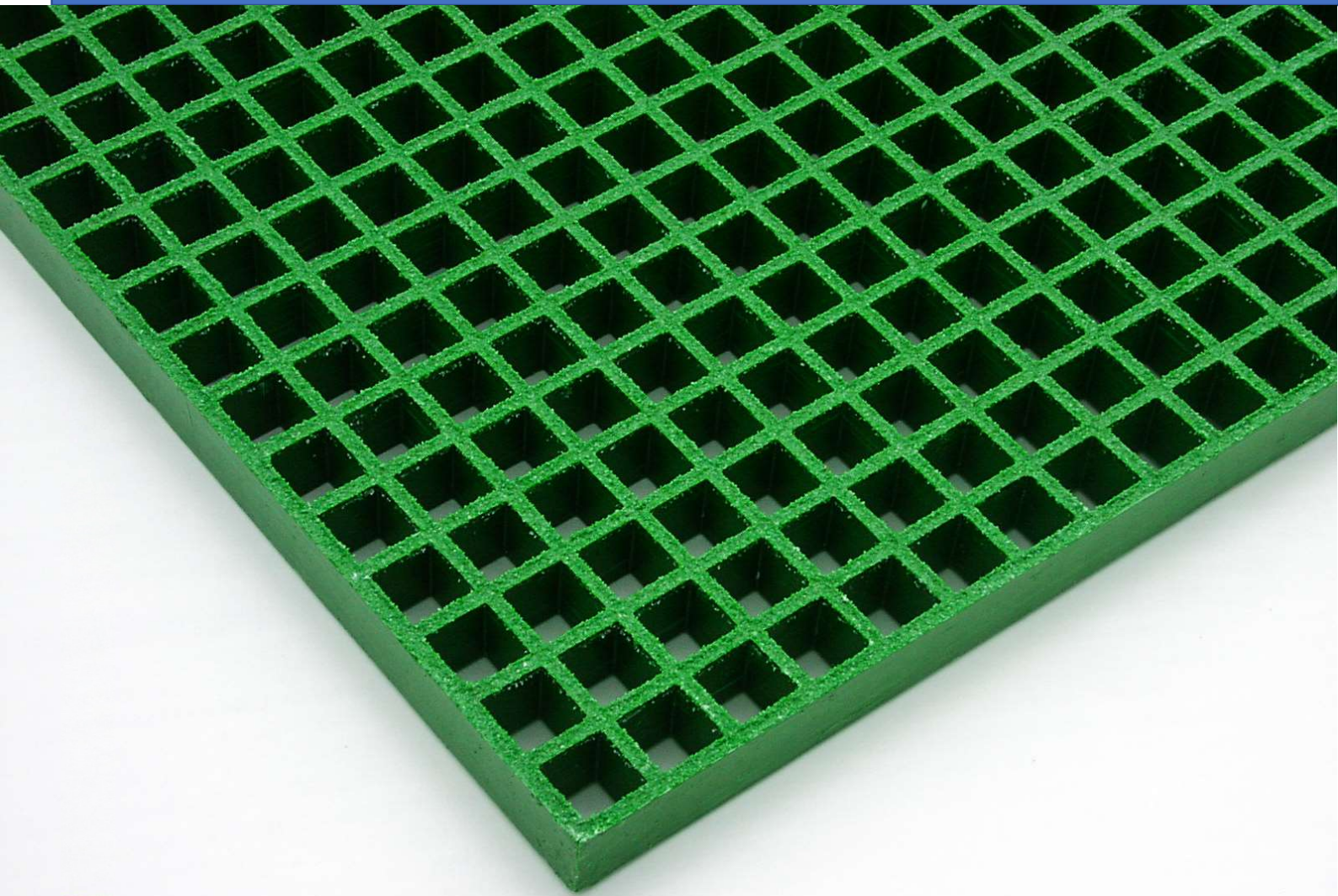


Horizontal Cross



Vertical Tee

FIBERGLASS GRATING SYSTEMS



A well-designed composites system like nj grating is needed for flooring. Walkway and decking areas in corrosive environment for supplier load bearing and corrosion resistance. This can be achieved with the use of good quality grade resin with UV inhibitors and other additives with sufficient glass reinforcement.

Molded Grating:

- Installation around piping. Tanks and other is much simpler with moulded grating
- Fixed panels sizes to be fitted on site.
- The chemical resistance of moulded grating is superior.
- Well suited for forklift traffic.
- Designed for a max deflection of span/100.



Pultruded Grating:

- Used where mechanical load is very high or support distance are very wide.
- Panels are fabricated to drawing with minimum wastage.
- Preforms structurally better then molded grating with a maximum deflection to be limited to SPAN/200 (The same limit as for steel grating)

INDUSTRY
SEGMENT

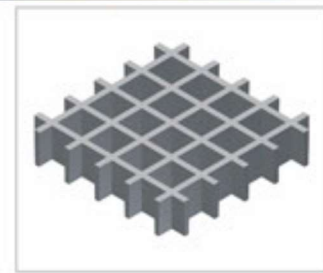
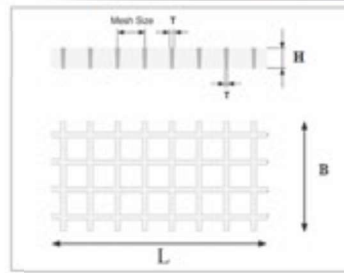


SIZE

Height (MM)	Mesh Size (MM)	Rib Thickness (MM)	Open Area(%)	Sheet Size (MM)
25	38 x 38	7-5	69	1220 X 3660, 1007 X 2007*, 1007 X 4047*, 1247 X 4047*, 1638 X 4038
30	38 x 38	7-5	68	1220 X 3660, 1007 X 2007*, 1007 X 4047*, 1220 X 4045
38	38 x 38	7-5	68	1220 X 3660, 1007 X 2007*, 1007 X 4047*, 1247 X 4047*
38	38 x 38	8-6	71	1220 x 4038 (Curved Bottom) [®]
50	50 x 50	8-5	71	1220 X 4068

FIBERGLASS MOLDED GRATING

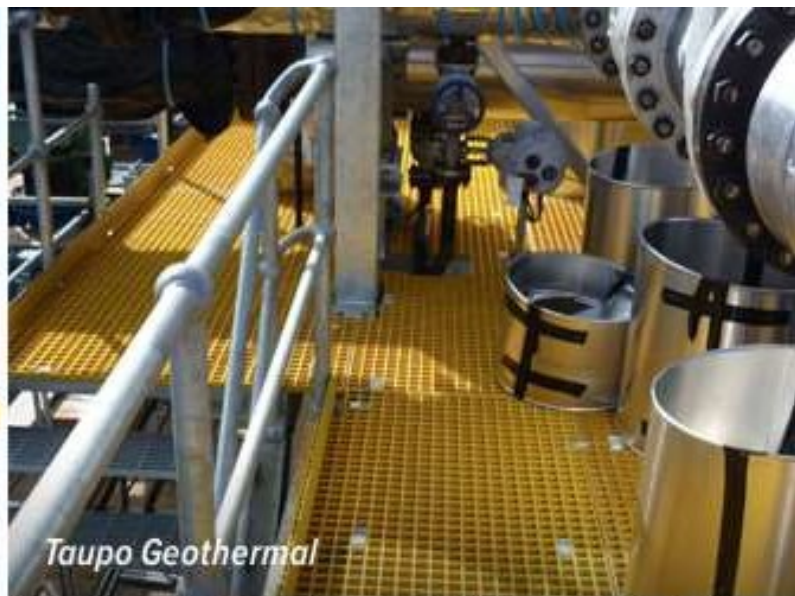
Nj is one of the India's Leading supplier of molded grating. Renowned for their high strength, corrosion resistance in the harshest environments, long life and safety. Molded grating meet the heights international standard. Produced from carefully selected resin system designed to deliver many years of reliable service, out perfuming the traditional material they replace.



SM-Square Mesh



Roof Walkway



Taupo Geothermal

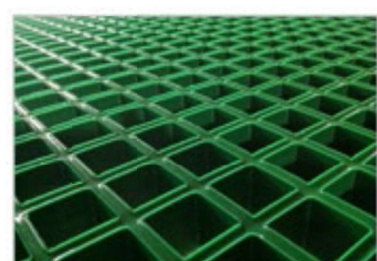


Perry Metal Protection Hamilton

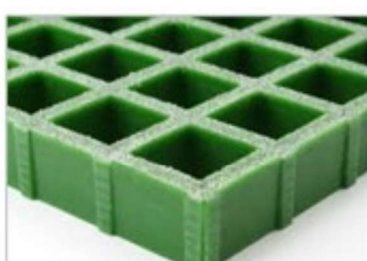


Surface

To provide safest working surface NJ grating are available in three anti-slip surfaces.



Concave/Meniscus Top



Grit Top



Chequered Plate Top



Covered Grit Top

Resin Selection Systems

Resin Type	Resin Base	Description	Flame spread rating ASTM E84
Type V	Vinyl Ester	Superior Corrosion Resistance & Fire Retardant	Class1, 25 or less
Type IFR	Isophthalic Polyester	Industrial Grade Corrosion resistance & fire retardant	Class 1, 25 or less
Type I	Isophthalic Polyester	Industrial Grade Corrosion resistance in acidic environment	Non fire retardant
Type P	Phenolic	Low smoke and superior Fire Resistance	Class 1, 5 or less

Comparison with conventional material

PARAMETERS	FIBERGLASS GRATINGS	HOT DIPPED GI	SS
Life Span	High	Moderate	High
Strength To Weight Ratio	High	Low	Low
Life Cycle Cost	Low	High	High
Corrosion Resistivity	Very High	Moderate	High
Chemical Resistivity	Very High	Moderate	High
Electrical Conductivity	Nil	High	High
EMI / RFI Transparency	High	Nil	Nil
Installation Cost	Low	Moderate	Moderate
Handling	Very Easy	Difficult	Difficult
Anti Skid	Available	NA	NA
Colour Range	Available	NA	NA

Applications

- Walkways
- Platforms
- Trench covers
- Staircase
- Floorings
- Foot Bridges
- Step Treads
- Swimming pool overflow
- Fencing
- Elevated car parking
- Earth pit covers
- Etc...



THE FIBERGLASS HANDRAIL SYSTEMS



Handrail Constructions

NJ FIBERGLASS HANDRAIL offer now various solutions for different situations. All systems are designed and tested according to the relevant standards. Systems are designed to satisfy both the End User in terms of performance as well as the Contractor in terms of ease of installation and costs

We provide:

- Design/costing services Applicable test certificates All components in kit form Site supervision if required
- Handrail construction includes precisely manufactured Fiberglass profiles by automatic pultrusion technology. It includes top rail, mid rails, kick plate (also known as toe guard) and vertical post. Accessories like connectors, vertical post shoe (also called stanchion) and various hardware are available in kit form for ease of contractor.

Why fiberglass handrails?

- Corrosion and Chemical Resistance
- High Strength to Weight Ratio
- Electric and Thermal Non-Conductive
- No need of Painting
- Less Environmental Impact
- Long Life Cycle
- Superior Ergonomics
- Good Aesthetics
- UV Stable
- Fire Retardant



COMPARISON WITH CONVENTIONAL MATERIAL

	NJE HANDRAIL	Steel	Aluminum	Timber
Corrosion Resistance	High	Low	Medium	Low
Strength	High	High	High	Low
Weight	Low	High	Low	Medium
Electrical Conductivity	Low	High	High	Moderate
Thermal Conductivity	Very Low	High	High	Low
EMI/RFI Transparency	Yes	No	No	Yes
Fabrication	Easy	Easy	Moderate	Easy
Life Cycle Cost	Low	Moderate	Moderate	High
Environmental Impact	Low	High	High	Low

HIGHLY DURABLE SAFETY MARKER LINE

Highly Visible and long lasting durable permanent line marking is a one time and cost-effective solution to indicate safe traffic management, factory safety, walkway, process plans etc, the preventive of workplace OH & S Incidences continues to be vital for all industries as employers aim to ensure a safe and injury free environment. A business's ability to highlight designed pedestrian and vehicular traffic are as in essential component in elevating accidents involving machinery and vehicles.

Available in 50 & 100mm Width & 3mtr Standard Light-coloured Yellow or White.



Features of NJ Safety Marker Line

- One time Solution
- Tapered from both ends to extend ease in movement and prevent tripping
- No need of overriding maintenance cost of painting
- Excellent resistance to chemical/acids
- Long life-virtually permanent
- Fast installation due pre drilled holes
- Virtually no need of surface preparation before installation
- Comes in k kit from with plastic dowel and hardware
- High abrasion resistant
- Zero environmental effect-best for road limit marker
- Option for antiskid coating also available.

Problem with conventional yellow marker line

- Not a one-time Process
- Gets invisible after certain time due to dust, oil and grease etc
- Preparation of the surface before painting of application
- Time consuming process





WHY NJ ENGITECH???

- ❖ DESIGN & ENGINEERING SERVICE
- ❖ CUSTOM SOLUTIONS
- ❖ SHORT DELIVERY PERIOD
- ❖ FABRICATION & ASSEMBLY
- ❖ HIGH QUALITY
- ❖ OPTIMUM INVESTMENT

NJ ENGITECH

Punagam Surat-395010

T: +91 9427475985

E-Mail: njengitech@hotmail.com | njengitech@gmail.com

Web: www.njengitech.co.in

