



Fiberglass Grating By

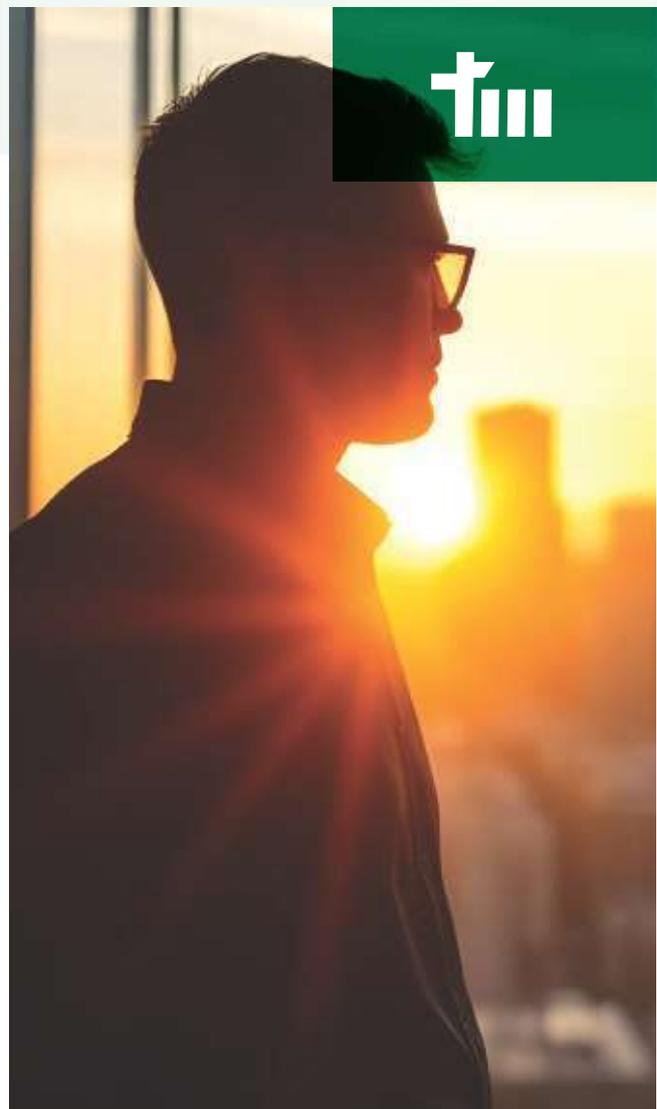
Techmech Composites Private Limited | INDIA

About *Our Company :*

We take this opportunity to introduce ourselves as fastest growing composite products which is being used in various industries and engineering services company located at Rajkot (Gujarat, India) established in 2017.

With reference to wide experience in composite concept generation to product development in the new products we entered in to 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,

TechMech Composites Private Limited commitment to innovation is as strong as its ability to offer tailor-made solutions that go beyond industry standards. Our main aim is to deliver our products or services in time with satisfactory quality.



Choose **TechMech Composites Private Limited** for the best in FRP Moulded Grating, designed for quality, performance, and lasting value.



Our *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.

Our *Mission :*

Become essential to our customers by providing differentiated products and services to help them achieve their aspirations.

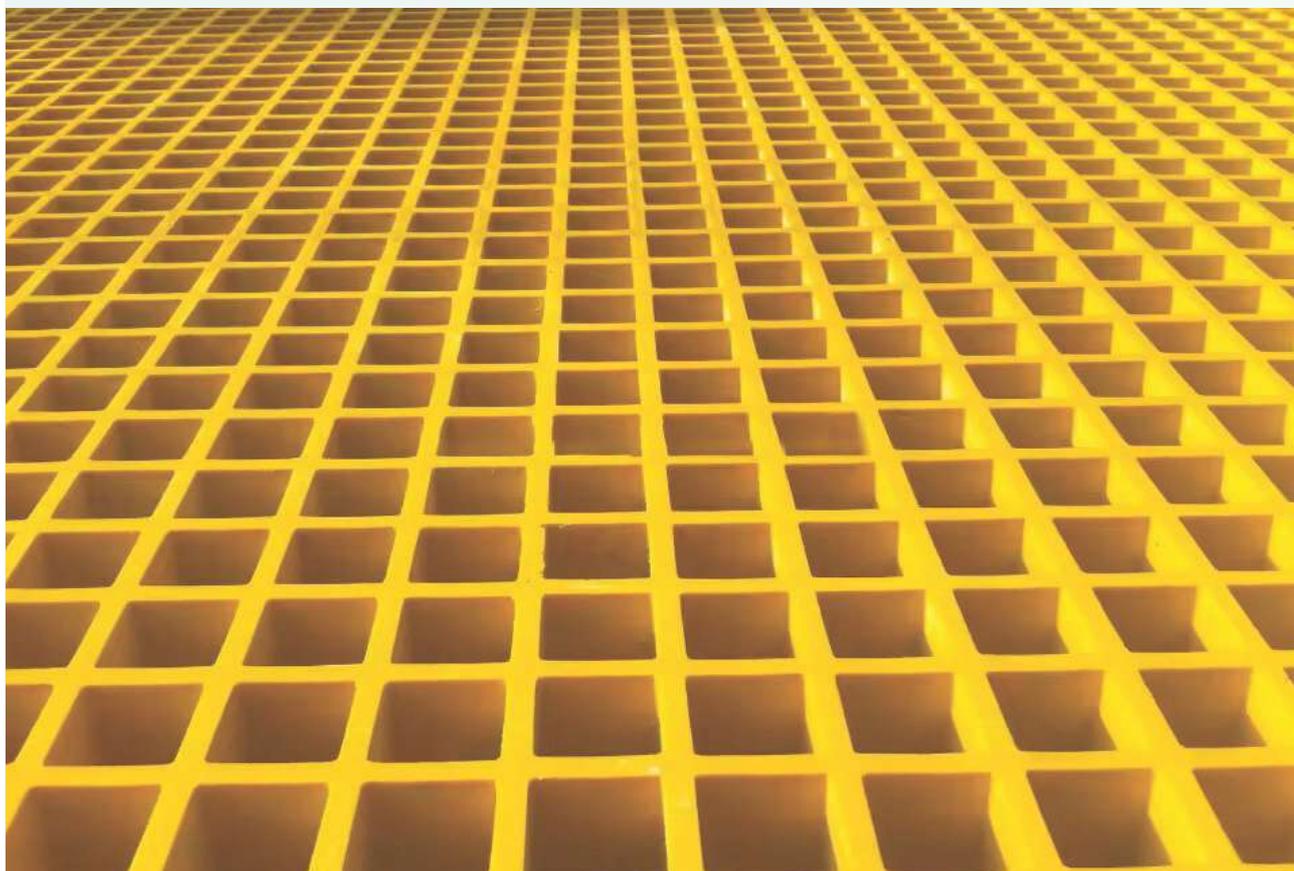
To serve our customers globally under one roof complete composite solution.

Our *QUALITY POLICY :*

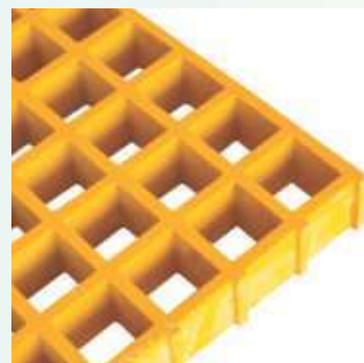
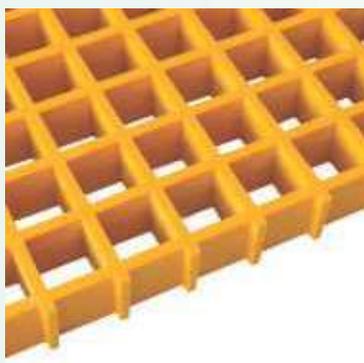
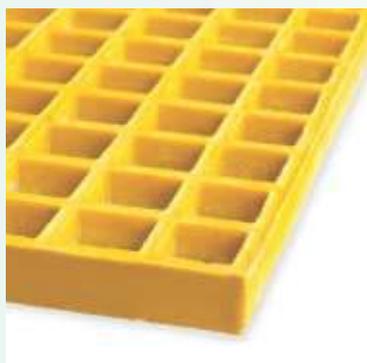
- › Techmech Engineering Products & services is committed to supplying products and services which exceed the needs and expectations of our customers and satisfy any related regulatory and statutory requirements. The company is also committed to continually improving the effectiveness of its Quality Management System to ensure an increasing level of customer satisfaction.
- › Achieve leadership as a trusted complete FRP product solution provider to the customer.
- › Maintain keeps record of quality management system accordance with international standard ISO 9001:2015.

Product Introduction

FRP MOULDED GRATING :



TCPL Moulded Grating are manufactured by thermally curing reinforcing fiberglass and Resin in a single mold and are cast integrally by heating and compressing. it is composed of certain number of symmetrical lattices with Loading Properties in both length and width direction. TCPL Moulded grating can be customized to fit specific application requirements



› Advantages



High Strength
to Weight Ratio



Light Weight
(Density 4 times less than steel and 1.5 times less than Aluminum)



Corrosion Resistance
(Resistance to almost all chemicals & in most hostile environment conditions)



Thermally Insulated
(Its can be installed in are of high Temperature)



Fire Retardant
(Available with class 1 fire rating & oxygen index less than 32)



Low Installation cost
Affordable installs, exceptional quality.



Long Service Life,
Lowest in life cycle



Impact Resistance
Protection you can trust, with high impact resistance.



Slip Resistance
(Special anti-skied surface prevents accident sue to slipping)



Non-Conductive
(Does not carry Electric current)



Easy to Install
(Its can be installed by anybody being light weight & can be cut by hand tools)



Aesthetic
(Improve the plant look with attractive color)



Give comfort
with walking or standing.



Easy to Clean
(Washable since they are completely rust and corrosion free)



No welding
required while installing



Resistant
to microbial growth.



Monolithic
one-piece construction in molded type.



UV Resistance
(Prolonged exposure to sunlight is not a problem)



Low Maintenance
No painting No cleaning Required.

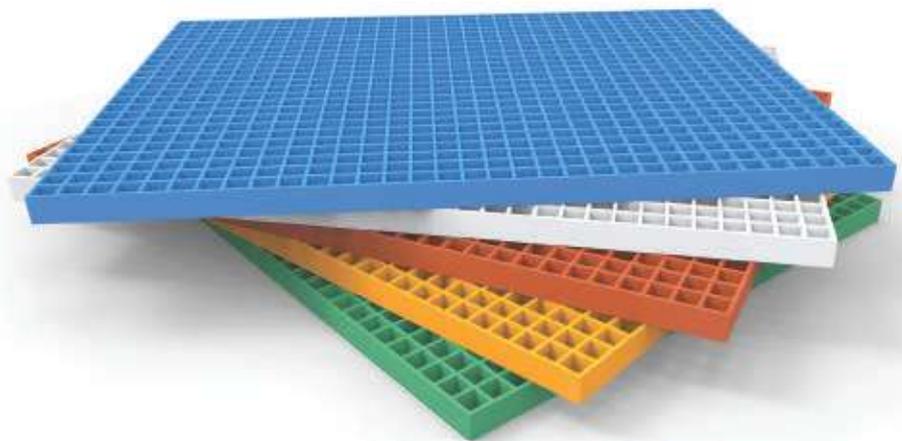


Quick Ship
Fast, reliable, and on time – that's the promise of Quick Ship.

› Comparison with Steel Material



Description	TCPL Grating	Hot Dip Galvanised	Stainless Steel
Chemical Resistivity	Excellent	Good	Excellent
Strength to weight ratio	Excellent	Average	Average
Installation cost	Very low	High	High
Anti-skid	Available	Not Available	Not Available
Life span	Excellent	Good	Very Good
Life Cycle Cost effectiveness	Excellent	Good	Good
Rust proof Features	Excellent	Average	Excellent
Handling	Very easy	Difficult	Difficult
Electrical non-conductivity	Excellent	Poor	Poor
Colour selection	Available	Not Available	Not Available



› Resin Section

- Type O (Orthophthalic Polyester): This is an economical option suitable for light industrial applications and environments with moderate exposure to chemicals. It offers moderate corrosion resistance and is fire retardant with a flame spread rating of ASTM E84 Class 1, 25 or less. The operational temperature range is approximately 50°C to 100°C
- Type I (Isophthalic Polyester): This resin provides better chemical resistance than Type O and is ideal for environments where occasional splashes or spills occur. It maintains a similar fire-retardant rating as Type O but can withstand slightly higher temperatures, ranging from -50°C to 105°C.
- Type V (Vinyl Ester): Designed for harsh chemical environments, this resin offers superior corrosion resistance and is suitable for applications involving frequent contact with aggressive chemicals. It also has a fire-retardant rating of ASTM E84 Class 1, 25 or less, with an operational temperature range from -50°C to 110°C.

› Typical Material Properties



Material Properties	Value
Barcol Hardness	39
Tensile Strength Mpa	69.02
Flexural Modulus Gpa	3.281
Impact Strength kJ/m ²	10
Elongation at break	5.88
Density Kg/m ³	1250
Tensile Modulus Gpa	3.2
Flexural Strength Mpa	107.2
Heat Distortion Temperature °C	79

› Mechanical & Electrical Properties :

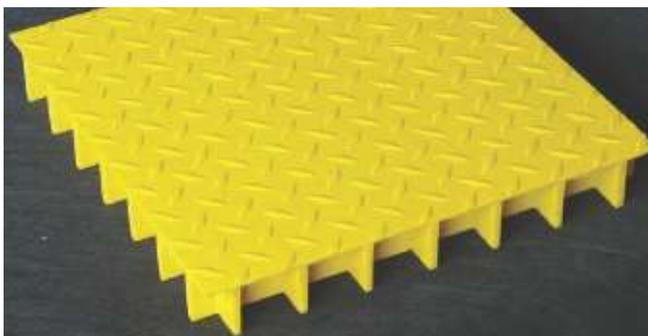
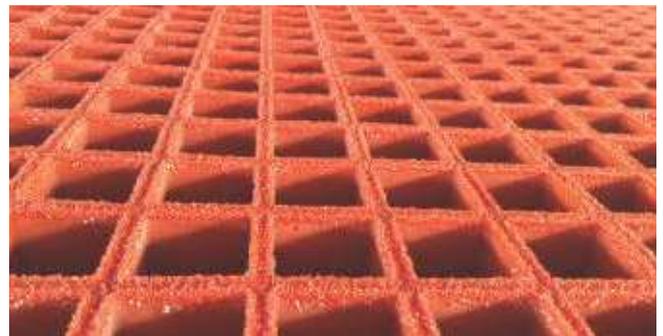
Characteristics	Value	Test Standard
Tensile Strength	412Mpa	ASTM D-638
Tensile Modulus	24.3Gpa	ASTM D-638
Flexural Strength	763Mpa	ASTM D-790
Flexural Modulus	18.5Gpa	ASTM D-790
Compressive Strength	451Mpa	ASTM D-695
Compressive Modulus	23.3Gpa	ASTM D-695
Flame Spread Index	10	ASTM E-84
Water Absorption	0.278 %	ASTM D-570
Surface Resistivity	1.4x10 ¹⁰ Ω	ASTM D-257
Axial Dielectric Strength	9.7 Kv/mm	ASTM D-149
Warp Dielectric Strength	1.383 Kv/mm	ASTM D-149
Relative Permittivity	3.96	ASTM D-150
Dielectric Dissipation Factor	0.027	ASTM D-150
Barcol Hardness	47	ASTM D-2583

FRP Molded Grating *Surface Options*



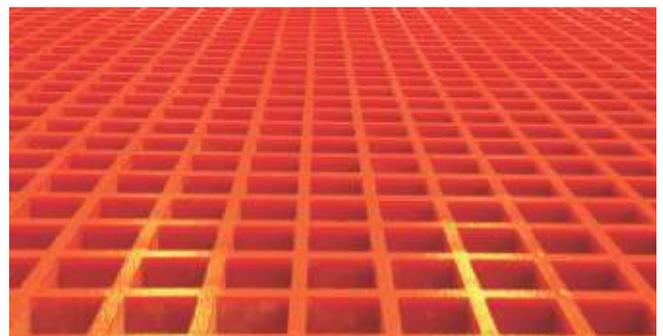
› **Meniscus Top:** Meniscus top grating, also known as concave top fiberglass grating, is a specialized type of flooring solution made from fiberglass reinforced plastic (FRP). This type of grating features a unique surface design that provides slip resistance, making it particularly suitable for industrial environments where wet or oily conditions are common. The meniscus top creates a hydrophobic surface that effectively channels liquids away from the walking surface, thereby enhancing safety and reducing the risk of slips and falls.

› **Gritted Top:** Gritted top grating is a type of flooring or platform material that features a surface designed to enhance slip resistance. This is achieved through the application of a coating made from refined, extra-hard aluminum oxide granules. The primary purpose of this design is to provide superior traction in various environments, making it particularly useful in areas where wet or oily conditions may be present.



› **Chequered Top (Diamond type):** Chequered grating, also known as checker plate or diamond plate, is a type of flooring material characterized by its raised diamond pattern. This design provides enhanced traction and slip resistance, making it suitable for various applications in industrial and architectural settings. It is commonly used in environments where safety is paramount, such as walkways, stair treads, and platforms.

› **Smooth Top:** Smooth top fiberglass reinforced plastic (FRP) grating is a type of composite material that combines resin and fiberglass to create a lightweight, durable, and corrosion-resistant product. This specific design features a smooth surface, making it suitable for various applications where slip resistance is not the primary concern but ease of cleaning and aesthetic appeal are important.



› **Gritted Top (Surface Plate):** Discover the ultimate in safety and reliability with our Gritted Top solutions, meticulously engineered to deliver exceptional traction and durability in the most demanding industrial environments, ensuring a secure and slip-resistant surface that protects your workforce and enhances operational efficiency.

> Available Grating Size :



FRP Moulded Grating

Model No.	Hight	Mesh Size	Panel Size	Approx Weight	Work Loading Capacity	Rib Thickness	
	mm	mm	mm	Kg/m2	Kg/m2	Top	Bottom
TCPL-MG-2538	25	38 x 38	1220 x 3660	12.3	250	5.9	5
TCPL-MG-3038	30	38 x 38	1220 x 3660	14.6	350	6.1	5
TCPL-MG-3838	38	38 x 38	1220 x 3660	18.5	500	6.5	5
TCPL-MG-5050	50	50 x 50	1220 x 3660	21	1000	7	5



› Application Areas :



Oil & Gas



Water Infra Projects



Food & Beverage



Recreations



Power Sectors



Chemicals



Architectural



Pharmaceuticals

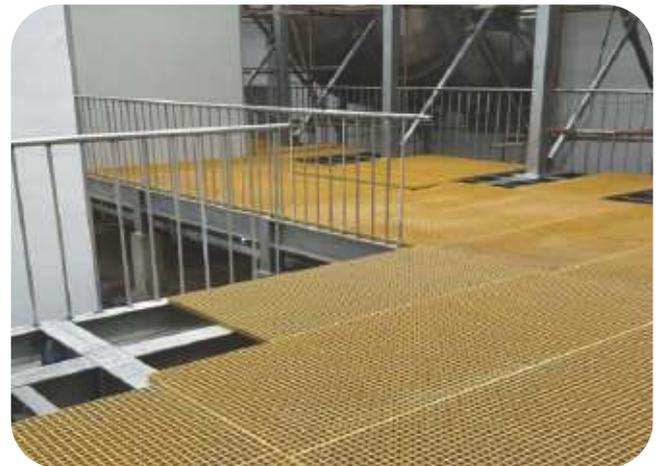
› Application Areas :



Foot Bridges, Highway & Tunnels



FRP Tree Guard



Steel Industries



Shipyards and Offshore Structure



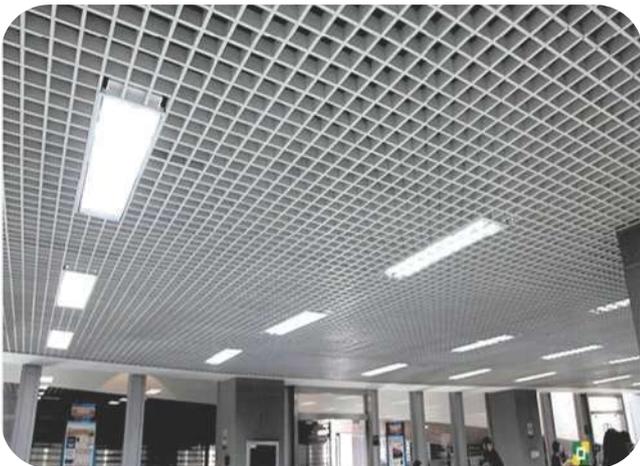
Trench Cover



Solar Rooftop Walkway



Railways



Interior Design



Stircase



Fishing and Aquaculture



Plating Plant

› Application Areas :



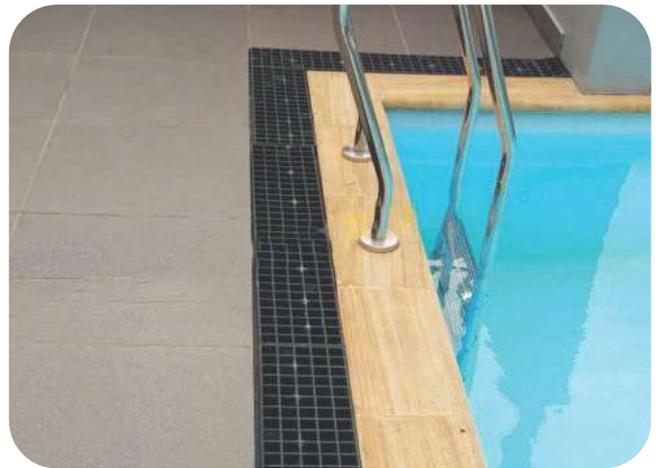
FRP Pallet



Garden



Garage/Washing Center



Swimming Pool



Fence Grating



Farm

› Fitting the Panels :



'M' CLIPS

(1) M CLIP (Saddle Clip) : It provides excellent hold-down capability by anchoring the grating to two adjacent bearing bars. This ensures stability and safety in various applications where FRP gratings are utilized. It is recommended to use approximately four M Clips per square meter of grating for adequate support. The maximum distance between clips should not exceed four feet to maintain structural integrity.

(2) W CLIP (Washer Clip) : W Washer Clips, specifically designed for securing fiberglass reinforced plastic (FRP) gratings, come in two types: Dome washer clips and Recessed washer clips. These clips are essential for ensuring that various types of FRP gratings remain securely fastened to their substrates, providing safety and stability in environments where these materials are used.



'W' CLIPS



'J' CLIPS

(3) J CLIP : The L Washer Clip is a specific type of fastening solution designed for securing fiberglass reinforced plastic (FRP) gratings to their supporting structures. This clip is particularly useful in applications where the grating needs to be held down securely while allowing for some flexibility in installation and maintenance.

(4) L Clips : begin by positioning one in each corner and then place additional clips every 500mm along the length of the grating. Insert the clips into the open mesh squares, ensuring they sit neatly on the load bar(s) with the base of the clip close to the bottom of the grating panel. If fixing to a surface, drill through the clip hole and secure with a screw and plug. For a support frame, drill through, insert a bolt, and tighten with a washer and nut.



'L' CLIPS



'C' CLIPS

(5) C Clips : To be used to join panels together, spacing will be determined by panel thickness but assume one clip to be affixed every 500mm. at an angle slot clip over the 2 load bars and twist so the clip is horizontal then screw in bolt to the threaded base of the clip and tighten.

(6) G CLIP G-Clips : are specialized fasteners designed to securely attach fiberglass reinforced plastic (FRP) gratings to supporting structures. These clips are essential for ensuring the stability and longevity of FRP grating installations, as they help prevent movement and damage due to load-induced differential deflection.



'G' CLIPS

› Chemical Resistance Chart :



RESIN TYPE	Vinylester		Isophthalic (Standard resin system used for GRP Grating)		Orthophthalic	
	Concentration %	Max. Operating Temp. F/C	Concentration %	Max. Operating Temp. F/C	Concentration %	Max. Operating Temp. F/C
Acetic Acid	50	180/82	50	125/52	25	N/R
Aluminum Hydroxide	100	180/82	100	160/71	ALL	-
Ammonium Chloride	ALL	210/99	ALL	170/77	ALL	-
Ammonium Bicarbonate	50	160/70	15	125/52	ALL	-
Ammonium Hydroxide	28	100/38	28	N/R	ALL	N/R
Ammonium Sulfate	ALL	210/99	ALL	170/77	ALL	-
Benzene	ALL	N/R	ALL	N/R	ALL	N/R
Benzoic Acid	SAT	210/99	SAT	150/66	ALL	77/25
Borax	SAT	210/99	SAT	170/77	ALL	-
Calcium Carbonate	ALL	180/82	ALL	170/77	ALL	-
Calcium Nitrate	ALL	210/99	ALL	180/82	ALL	-
Carbon Tetrachloride	100	150/65	100	N/R	100	N/R
Chlorine Dry Gas	-	210/99	-	140/60	-	N/R
Chlorine Water	SAT	200/93	SAT	80/27	SAT	N/R
Chromic Acid	10	150/65	5	70/21	5	N/R
Citric Acid	ALL	210/99	ALL	170/77	ALL	77/25
Copper Chloride	ALL	210/99	ALL	170/77	ALL	104/40
Copper Cyanide	ALL	210/99	ALL	170/77	ALL	77/25
Copper Nitrate	ALL	210/99	ALL	170/77	ALL	-
Ethanol	50	100/38	50	75/24	10	77/25
Ethylene Glycol	100	200/93	100	90/32	100	104/40
Ferrous Chloride	ALL	210/99	ALL	170/77	ALL	86/30
Formaldehyde	ALL	150/65	50	75/24	25	-
Glucose	100	210/99	100	170/77	-	-
Gasoline	100	180/82	100	80/27	100	77/25
Glycerin	100	210/99	100	150/66	100	-
Hydrobromic Acid	50	150/65	50	120/49	18	-
Hydrochloric Acid	37	150/65	37	75/24	10	86/30
Hydrogen Peroxide	30	150/65	5	100/38	5	N/R



RESIN TYPE	Vinylester		Isophthalic (Standard resin system used for GRP Grating)		Orthophthalic	
	Concentration %	Max. Operating Temp. F/C	Concentration %	Max. Operating Temp. F/C	Concentration %	Max. Operating Temp. F/C
Lactic Acid	ALL	210/99	ALL	170/77	ALL	77/25
Lithium Chloride	SAT	210/99	SAT	150/66	ALL	-
Magnesium Chloride	ALL	210/99	ALL	170/77	ALL	104/40
Magnesium Nitrate	ALL	210/99	ALL	140/60	ALL	86/30
Magnesium Sulfate	ALL	210/99	ALL	170/77	ALL	104/40
Mercuric Chloride	100	210/99	100	150/66	100	104/40
Nickel Sulfate	ALL	210/99	ALL	170/77	ALL	104/40
Nitric Acid	20	120/49	20	70/21	2	N/R
Oxalic Acid	ALL	210/99	ALL	75/24	ALL	N/R
Perchloric Acid	30	100/38	10	N/R	10	N/R
Phosphoric Acid	100	210/99	100	120/49	80	N/R
Potass. Chloride	ALL	210/99	ALL	170/77	ALL	104/40
Potassium Dichromate	ALL	210/99	ALL	170/77	ALL	77/25
Potassium Sulfate	ALL	210/99	ALL	170/77	ALL	104/40
Propylene Glycol	ALL	210/99	ALL	170/77	ALL	104/40
Sodium Acetate	ALL	210/99	ALL	160/71	ALL	104/40
Sodium Bisulfate	ALL	210/99	ALL	170/77	ALL	-
Sodium Bromide	ALL	210/99	ALL	170/77	5	-
Sodium Cyanide	ALL	210/99	ALL	170/77	5	N/R
Sodium Hydroxide	25	180/82	N/R	N/R	1	N/R
Sodium Nitrate	ALL	210/99	ALL	170/77	ALL	104/40
Sodium Sulfate	ALL	210/99	ALL	170/77	ALL	104/40
Stannic Chloride	ALL	210/99	ALL	160/71	ALL	104/40
Sulfuric Acid	75	100/38	25	75/24	10	-
Tartaric Acid	ALL	210/99	ALL	170/77	ALL	-
Vinegar	100	210/99	100	170/77	ALL	-
Water Distilled	100	180/82	100	170/77	ALL	86/30
Zinc Nitrate	ALL	210/99	ALL	170/77	ALL	104/40
Zinc Sulfate	ALL	210/99	ALL	170/77	ALL	104/40

> Our Clients :



A joint venture between ArcelorMittal and Nippon Steel Corporation





Our *Other Products :*



GRP
Pipes & Fittings



FRP
Chemical Storage Tanks



FRP
Vessels



FRP
Scrubber Column



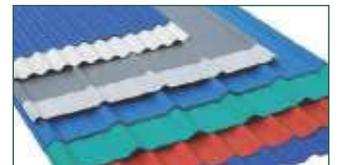
FRP
Filter Housing



FRP
Hand Railings



FRP
Chequered Plate



FRP
Sheets



FRP
Cable Trays



FRP
Profiles



FRP
Canopies



FRP
Street Light Poles

And many more customized products as per customer demands.

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Solutions."

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