

## Molded FRP Grating

### —. Product Introduction

The glass fiber reinforced plastic (FRP) molding grid is a kind of plate-like material with a certain opening rate made by special process on the customized mold with unsaturated polyester resin (including isophthalic type, ortho-phthalic type, vinyl type, phenolic type, bisphenol A type, etc.) as the matrix and glass fiber roving (medium alkali or alkali free) as the skeleton.





## 二. Product features

### 1. Corrosion preventive

Different resin properties endow GRP with different corrosion resistance, so that it can be used for a long time in the corrosive environment of gas and liquid media with different acids, alkalis, salts and organic solvents.

### 2. Flame retardant

The high-quality matrix resin and unique flame retardant formula give the product excellent flame retardant performance. The FRP grille products have passed the flame retardant test of the American Society for Testing and Materials (ASTM), and the flame diffusion coefficients of polyester resin, vinyl resin and phenolic resin grille are less than 15/10/5 respectively, and the smoke density is less than 500/300 respectively.

### 3. Light weight and high strength

The perfect combination of alkali-free glass fiber yarn and resin endows the product with unique lightweight and high-strength characteristics. The proportion of the product is 1/4 of that of steel, which is suitable for various bearing structures in corrosive environment.

### 4. Aging resistance

The product is made of high quality matrix resin and anti-aging additive, so that the product has a lasting anti-aging performance, can maintain a long gloss and sustained high strength, and has a service life of more than 20 years.

### 5. Designability

In addition to the flexible design performance of GRP, the color of the product can be customized according to the customer's requirements, and the overall dimensions can also be cut and spliced into the size required by the customer.

### 6. Safety and anti-skid

Different surface effects make the grille have anti-skid performance, and slight elasticity reduces the fatigue feeling of the staff. Different surfaces provide different anti-skid performance for different occasions.

### 7. Electrical performance

Glass fiber and high-performance resin endow the product with superior electrical properties. The product has a puncture strength of 10kv/mm, and there is no electric spark when metal tools resist. The product is non-magnetic and can be safely used in anti-electromagnetic and anti-explosion environment.

≡. Size: grid size: 38x38mm

Grille thickness(mm)	Rib wall thickness	Grid size (mm)	Length width(mm)	x	The weight (kg/m <sup>2</sup> )	Permeability %
13	6.0/5.0	38x38	1200x3600, 1200x4000 1200x2440,		6.0	78

			1268x4010 915x3050		
14	6.0/5.0	38x38	1200x3600, 1200x4000  1200x2440, 1268x4010 915x3050	6.5	78
20	6.0/5.0	38x38	1220x3660, 1220x4000  1524x4010, 997x3012	9.8	65
25	6.0/5.0	38x38	1220x3660, 1226x4010  1532x4010, 915x3050  1524x4000, 997x3012	12.3	68
30	6.5/5.0	38x38	1220x3660, 1220x4010  915x3050, 1524x4010	14.6	68
38	7.0/5.0	38x38	1200x3660, 1220x4010  1524x4038, 2100x4010  998x4010, 1220x2440  915x3050, 1532x4010  1532x3050,	19.5	68

			1000x4000		
50	9.5/7.5	38x38	1220x4010, 1220x3660  1230x4010, 1220x2440  915x3050	42	56
60	10.5/8.5	38x38	1230x4010	50.4	54
65	9.5/6	38x38	1220x3660	37	68

Grille thickness(mm)	Rib wall thickness	Grid size (mm)	Length width(mm) x	The weight (kg/m <sup>2</sup> )	Permeability %
25	7.0/5.0	40x40	1007x3007, 1007x4047  1527x4047	12.3	67
30	7.0/5.0	40x40	1527x4047, 1007x3007  1247x4047	14.6	67
38	7.0/5.0	40x40	1527x4047, 1247x4047  1007x3007, 1007x4047	19.2	67
40	7.0/5.0	40x40	1527x4047, 1007x3007  1007x4047, 1247x4047	19.5	67

Grid-size: 40x40mm

grid size: 50x50mm

Grille thickness(mm)	Rib wall thickness	Grid size (mm)	Length x width(mm)	The weight (kg/m <sup>2</sup> )	Permeability %
15	6.0/5.0	50x50	1220x4000, 1220x3660 1220x2440	5.9	82
20	6.8/5.0	50x50	1787x4530, 1225x4530	18.2	80
25	7.0/5.0	50x50	1220x3660, 1220x2440 915x3050	11.5	78
50	8.0/5.0	50x50	1524x4000, 1220x3660 1220x2440, 1220x4000 915x3050, 1532x4020	23.7	78
63	8.3/6.0	50x50	1225x4000, 1225x3660 1225x2440, 915x3050	28.8	78

四. Performance table of FRP grating: Linear load(mm)

1. Grid size: 38x38x25mm

Span	Kg/m						Breaking point
	75	150	300	450	600	750	

450	0.559	1.146	2.15	3.073	4.115	4.75	3910
600	0.864	1.702	3.505	5.156	6.706	8.179	2824
900	2.896	5.918	12.116	18.44	----	----	1948
1200	5.715	11.63	----	----	----	----	1461

2. Grid size: 38x38x30mm

Span	Kg/m						Breaking point
	75	150	300	450	750	1500	
300	0.254	0.254	0.254	0.508	0.762	1.524	9923.4
450	0.254	0.508	1.016	1.524	2.54	----	4827.6
600	0.508	1.27	2.286	3.556	5.842	----	4112.4
750	1.27	2.54	4.826	7.366	12.446	----	3173.7
900	1.778	3.81	7.62	11.43	----	----	2637.3

3. Grid size: 38x38x38mm

Span	Kg/m						Breaking point
	75	150	300	450	600	750	
300	0.279	0.356	0.483	0.61	0.76	0.889	17116
600	0.356	0.66	1.245	1.85	2.46	3.073	8718
900	0.864	1.803	3.683	5.563	7.41	9.29	5817
1200	2.261	4.749	9.677	14.63	19.58	----	3755

#### 4. Grid size: 50x50x50mm

Span	Kg/m						Breaking point
	75	150	300	450	600	750	
300	0.279	0.305	0.406	0.483	0.635	1.041	21727
600	0.356	0.508	0.813	1.128	1.753	3.327	11713
900	0.508	1.118	2.235	3.2	5.8156	10.058	7780
1200	0.914	1.93	3.937	5.918	9.957	----	5834

#### 五. Engineering application cases

Widely used: Chemical, pharmaceutical, machinery, petroleum, electronics, mining, landscaping, sewage treatment plant, environmental protection engineering, pedestrian walkway, substation guardrail, FRP maintenance platform, electroplating workshop walkway, corrosion resistant environment, etc.



Device platform



Car washing shop



Sewage plant



Protective tree



Ship deck



Cultivation

# Pultruded FRP Grating

## 1. What is Pultruded FRP Grating?

Pultruded FRP (Fiber-Reinforced Polymer) grating is a structural flooring and walkway product manufactured through the pultrusion process. Continuous glass fiber rovings are impregnated with thermosetting resin and pulled through a heated die, forming a one-piece, high-strength, uniform cross-section panel with integral bearing bars and cross bars. Unlike molded grating, pultruded grating offers higher glass content (typically 65–75%), resulting in superior stiffness, load capacity, and span capability per unit weight.

## 2. Key Advantages

**High Strength-to-Weight Ratio** – Up to 50% lighter than steel with comparable or higher flexural strength.

**Superior Corrosion Resistance** – Resists acids, alkalis, salts, seawater, and most chemicals; no protective coating required.

**Non-Conductive & Dielectric** – Electrically insulating, safe for power substations and electrical rooms.

**Anti-Slip Surface** – Available with gritted top surface (silica or aluminum oxide) for safe footing in wet or oily environments.

**Low Maintenance** – Does not rust, rot, or splinter; no painting, galvanizing, or regular treatment needed.

**Fire Retardant Options** – Meets ASTM E84 Class 1 / Class A flame spread index (<25) and smoke development.

**UV Resistant** – Added UV stabilizers for long-term outdoor use without discoloration or degradation.

**Easy Fabrication** – Can be cut, drilled, machined with standard carbide-tipped tools.

## 3. Product Types

Type	Description	Typical Span (mm)	Surface
<b>Standard Mesh</b>	Square grid – I-shaped bearing bars; open area up to 70%	600 – 1500	Smooth or gritted
<b>Heavy Duty</b>	Deeper bearing bars (e.g. 50mm)	1000 –	Gritted

Type	Description	Typical Span (mm)	Surface
<b>(HD)</b>	height) for high-load industrial platforms	2400	standard
<b>Molded Alternative</b>	Not pultruded – see separate range	–	–

⚠ Pultruded FRP grating is distinct from molded grating; it provides higher directional strength and longer spans.

## 4. Standard Specifications

### (1) Bearing Bar Heights & Grid Patterns

Bar Height (mm)	Bar Pitch (mm)	Cross Bar Pitch (mm)	Typical Unsupported Span (mm) @ 3kN/m <sup>2</sup>
25	30	38	600
30	30	38	800
38	30	38	1100
50	30	50	1500
60	40	50	2000

⚠ Other bar pitches and custom dimensions available upon request.

### (2) Standard Panel Sizes

Width: 609 mm (24"), 1000 mm, 1200 mm

Length: 3000 mm, 3660 mm, 4000 mm (custom lengths up to 12 m available)

Thickness: 19 mm, 25 mm, 32 mm, 38 mm, 50 mm (bearing bar height)

## 5. Resin Systems – Select by Environment

Resin Type	Best For	Max Temp. (°C)	Chemical Resistance
<b>Isophthalic Polyester</b>	General industrial, water treatment, mild chemicals	80	Good (acids, salts)
<b>Vinyl Ester</b>	Strong acids, bleaches, aggressive chemicals	100	Excellent
<b>Orthophthalic Polyester</b>	Economy applications, dry indoor use	70	Moderate
<b>Phenolic</b>	Fire & smoke critical areas (offshore, tunnels)	150	Good (limited alkalis)
<b>Fire Retardant Polyester</b>	FRP grating for public buildings, electrical rooms	80	Good, meets Class A flame spread

💧 Phenolic and fire-retardant polyester are recommended for API, OSHA, and NFPA compliance.

## 6. Mechanical Performance (Typical – Vinyl Ester, 38mm bar height, 30mm pitch)

Property	Value
Flexural Strength (bar direction)	≥ 310 MPa
Flexural Modulus	16 GPa
Tensile Strength	240 MPa
Compressive Strength	200 MPa

Property	Value
Glass Content	65 – 75%
Density	~1.9 g/cm <sup>3</sup>

Load tables available upon request for specific spans & uniform live loads.

## 7. Applications & Industries

Pultruded FRP grating is widely used in corrosive or safety-sensitive environments:

**Chemical Plants** – Acid storage areas, battery rooms, tank platforms

**Water & Wastewater Treatment** – Walkways over basins, media filter floors, trench covers

**Marine & Offshore** – Ship decks, helidecks, offshore platforms (NORSOK compliant)

**Power Generation** – Cooling tower decks, transformer enclosures, cable trenches

**Food & Beverage** – Processing floors requiring high hygiene and slip resistance

**Mining & Mineral Processing** – Corrosive slurry areas, flotation cells

**Electrical Substations** – Non-magnetic, non-conductive walkways near live equipment

## 8. Selection Guide – How to Specify Pultruded FRP Grating

**Determine load requirements** – Uniform live load (kN/m<sup>2</sup>) or concentrated wheel load.

**Select resin type** – Based on chemical exposure and max temperature.

**Choose bar height & span** – Refer to load/span tables.

**Decide surface finish** – Smooth (easy clean) or gritted (slip-resistant).

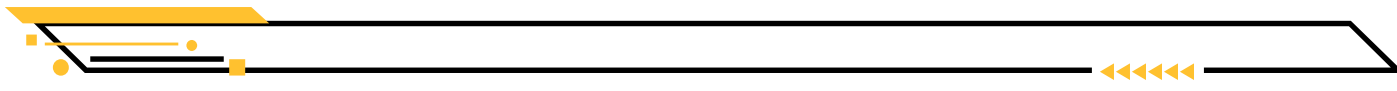
**Check fire rating** – If required by local code, specify phenolic or Class A resin.

**Installation method** – Panel clips, saddle clips, or field cutting with stainless steel fasteners.

## 9. Installation & Accessories

**Cutting** – Diamond blade circular saw or carbide grit blade; dust extraction recommended.

**Fastening** – Use 316 stainless steel or FRP composite clips to avoid galvanic corrosion.



**Support structure** – FRP beams, steel, or concrete; ensure proper support spacing.

**Edge finishing** – Available with solid border bars for strength and safety.

## 10. Quality & Certifications

Manufactured under ISO 9001:2015

ASTM D4385 – Standard specification for pultruded FRP grating

ASTM E84 – Class 1 / Class A available

DNV / ABS type approval for marine applications (upon request)

FDA compliant resin options for food contact

## 11. Ordering Information

Please provide the following when requesting a quote:

Panel dimensions (width × length × bar height)

Resin type (polyester / vinyl ester / phenolic)

Surface finish (gritted or smooth)

Quantity (pieces or m<sup>2</sup>)

Load / span requirements (if critical)