

Fibreglass Reinforced Plastic



WEBFORGE

Contents

Features	1
FRP Products - Standard, Mini Mesh	3
FRP Products - Stair Treads	4
Installation	5
Chemical Resistance Guide	6

What is Fibreglass Reinforced Plastic (FRP)?

WEBFORGE FRP grating is a moulded, one-piece fibreglass reinforced plastic grating, available in standard panels or custom panels made to order from drawings supplied. It is principally used for floors, platforms, stair treads, ramps, catwalks and trench covers.

WEBFORGE FRP grating is composed of 65% resin and 35% continuous fibreglass strand. The standard panel is 3660mm x 1220mm.

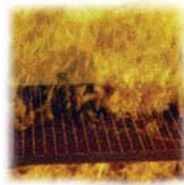
Features

Corrosion Resistance

Whether the grating is exposed to continuous submersion, splash, spills, fumes or gases, the high resin content of FRP resists corrosion to a wide range of chemicals.

Fire Resistance

Flame spread rating of Class 1, 25 or less, in accordance with the American Society for Testing and Materials (ASTM) E-84 tunnel test method.



Non-Sparking

Ideally suited for installations where combustible gases may be present. FRP will not cause sparking when impacted by metallic objects.

Non-Electrically Conductive

FRP is not electrically conductive. This makes it ideal for work platforms, flooring and fencing in electrically hazardous areas.

Light Weight

FRP grating panels are light in weight, they can be easily handled without means of mechanical hoists or lifts.

Two directional load bearing

Squared pattern moulded grating offers load bearing capacity in both directions.

Optional Anti-Slip Surface

An anti-slip surface can be provided by embedding a coarse grit into the resin.

Easy On-Site Fabrication

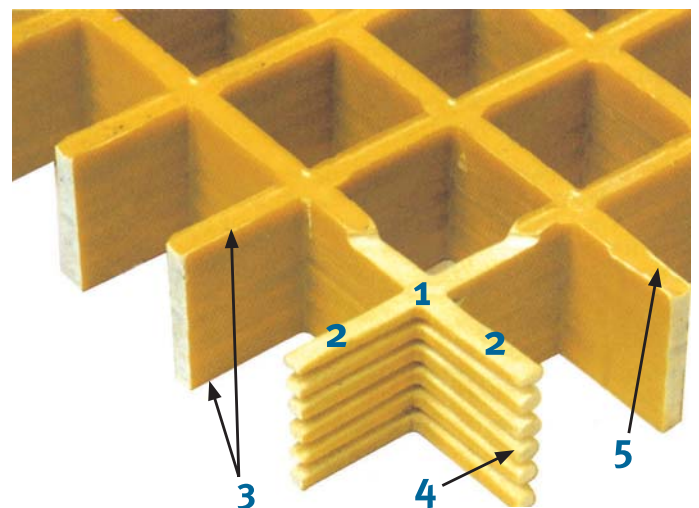
Standard FRP grating panels are ideal for on site fabrication. It is easy to cut with standard cutting tools to suit individual installations. Sealing kits can be provided to seal cut edges.

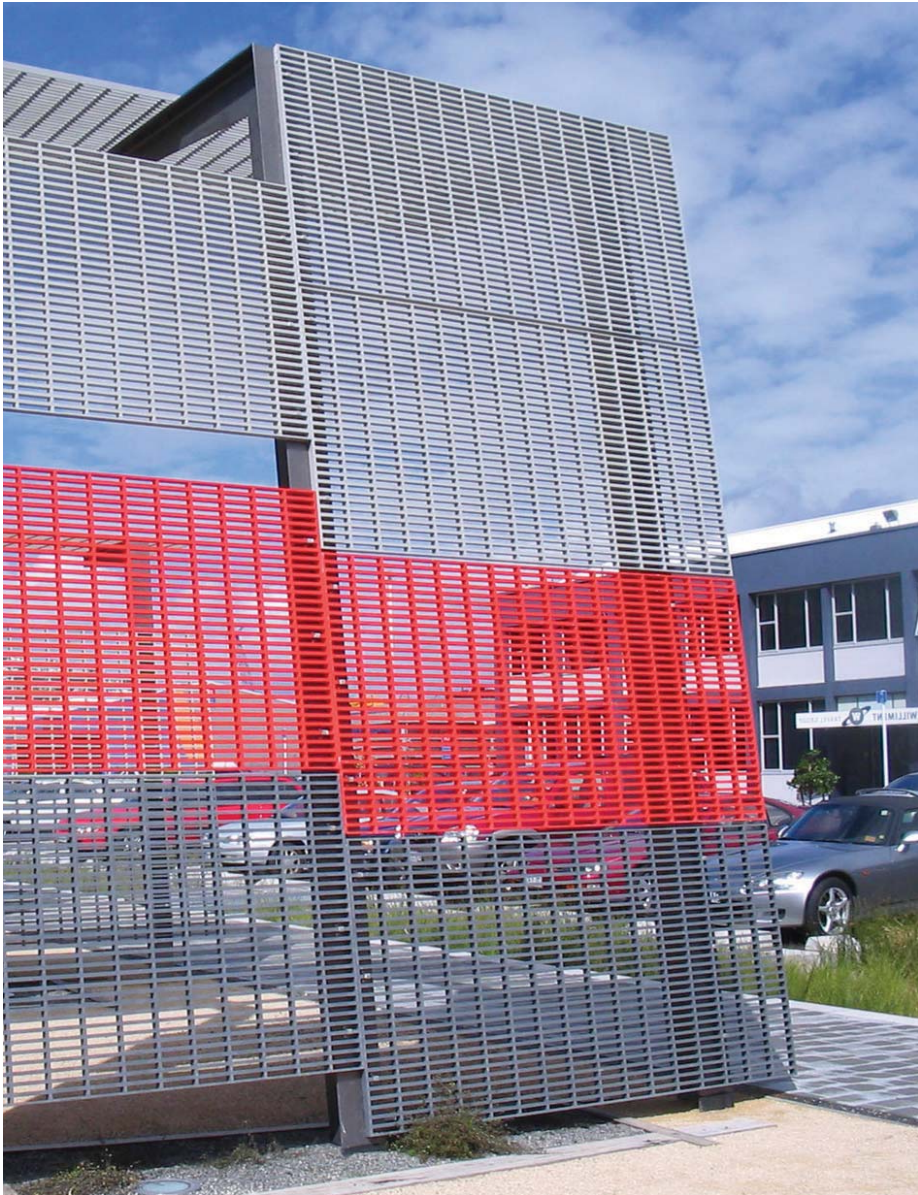
Cost Performance

FRP has a long life span with low installation costs.

Special Features of FRP

1. Integral, one-piece construction increases load-bearing capabilities.
2. Load applied to a WEBFORGE FRP bar is transferred to adjoining bearing bars, assisting in load distribution on the grating as well as on the support structure.
3. Square grid patterns benefit from integral one-piece construction. Smooth resin-rich vertical surfaces and tapered bars allow all debris to fall through.
4. Continuous glass fibre strand in alternating layers is thoroughly wetted with polyester resin for excellent corrosion resistance.
5. ANTI-SKID SURFACE (optional.) The top surface has bonded coarse grit to provide excellent skid resistance.
6. Open area 70%



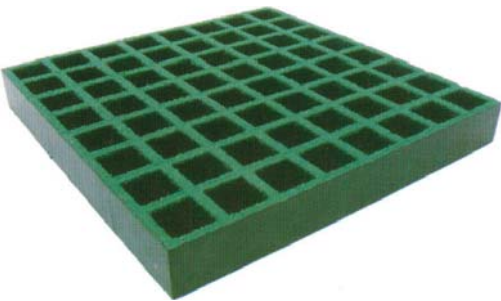


APPLICATIONS



Standard Mesh

Product	Load Bar Size	Mass kg/m2	U = KPa	450	600	750	900	1200	4KPa 5mm Defl. span
G256***	25 x 6	12.1	2.5	0.27	1.03	2.58			
			3.0	0.33	1.25	3.1	6.15		
			4.0	0.44	1.67	4.48	7.6	15.51	750mm
			5.0	0.55	2.37	5.17	9.64	18.61	
			7.5	0.94	3.11	7.76	11.97		
			10.0	1.1	4.15	10.34	17.48		
			15.0	1.74	6.23	15.52			
G386***	38 x 6	18.6	2.5	0.1	0.27	0.98	1.68	4.7	
			3.0	0.12	0.32	1.4	2.03	5.64	
			4.0	0.17	0.43	1.71	2.7	7.52	1050mm
			5.0	0.21	0.53	2.02	3.38	9.4	
			7.5	0.31	0.8	2.81	5.06	14.1	
			10.0	0.41	1.06	3.59	6.75	18.8	
			15.0	0.63	1.6	5.16	10.13		

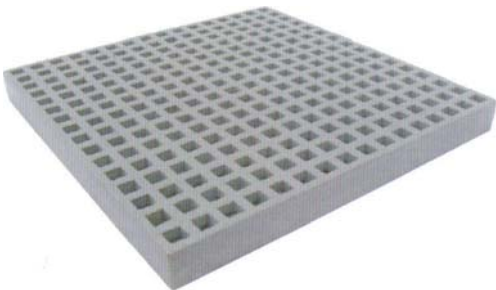


• **Possible Applications:**
Maintenance platforms and general purpose industrial walkways.
Also available in 25mm and 38mm

Note: Where *** indicates Material.
Top Surface. Treatment / Colour.
* Optional colours are available upon request
Standard Mesh Clip Part - Co23SM (38mm Deep)
Co24SM (25mm deep)

Mini Mesh

Product	Load Bar Size	Mass kg/m2	U = KPa	450	600	750	900	1200	4KPa 5mm Defl. span
G38619**	38 x 6	23.1	2.5	0.09	0.27	0.63	1.25	3.71	
			3	0.11	0.32	0.75	1.50	4.45	
			4	0.15	0.43	1.00	2.00	5.93	1140mm
			5	0.18	0.54	1.25	2.50	7.41	
			7.5	0.27	0.81	1.88	3.75	11.12	
			10	0.36	1.08	2.51	4.99	14.82	
			15	0.54	1.62	3.76	7.49		



• **Possible Applications:**
Pedestrian walkways/boardwalks, safe access for disabled, sufficient light penetration for vegetation growth underneath.

Note: Where *** indicates Material.
Top Surface. Treatment / Colour.
* Optional colours are available upon request
Minimesh Clip Part - Co26SM

Grating Information

Material

- Isophthalic Polyester Resin
ASTM E-84 Fire rating Class 1, 25 or less
- Vinyl Ester Resin
ASTM E-84 Fire rating Class 1, 25 or less
- Phenolic Resin
ASTM E-84-97a
Fire spread index 4.
Smoke developed value 1.
Meets: Class 1 Flammability per ASTM E-84.
Class A interior wall & ceiling finish per NFPA No. 255.

Available only in 38mm deep.

Panel Size

Available in a variety of sizes suitable for cutting to suit the application.

Top Surface

Normally provided with an anti-skid surface.
This is a coarse grit embedded into the resin.
Plain top surface is also available.

Treatment / Colour

Available in a variety of colours.
We recommend:
- Isophthalic Polyester Resin - Green
- Vinyl Ester Resin - Yellow
- Phenolic Resin - Reddish Brown

Stair Treads

Safety and Durability - The Most Significant Factors in Stairway Design

Falls and accidents on stairs are more frequent than in any other areas of the flooring system. Selecting a tread with permanent anti-skid properties, high corrosion resistance for long wear and reliability can prevent accidents and reduce costs.

The FRP Tread is an open grating type stair tread with tapered bars to provide a self-cleaning feature. It is moulded in an integral, single-step operation with a solid nose, which increases the rigidity and durability of the tread section receiving the most abuse.

FRP Tread is made of thoroughly wetted continuous glass strand fibres and a special resin that provides maximum corrosion resistance to chemicals.

The leading edge of the FRP Tread has a distinctive coarse grit solid nosing of contrasting colour (normally black) to ensure ready visual identification whether ascending or descending the stairway.



• Other products available upon request, including Handrail & Structural Beams.

FRP PRODUCTS

Load Bar Chart			
No. of Bars	G	No. of Bars	G
41	1530	21	768
40	1492	20	730
39	1454	19	692
38	1416	18	654
37	1378	17	616
36	1339	16	577
35	1301	15	539
34	1263	14	501
33	1225	13	463
32	1187	12	425
31	1149	11	387
30	1111	10	349
29	1073	9	311
28	1035	8	273
27	997	7	235
26	958	6	196
25	920	5	158
24	882	4	120
23	844	3	82
22	806	2	44

How To Order FRP Treads

1. G pattern
2. Choose a load bar from the Load/Deflection Table on page 5
3. Add the options for Material, Top Surface and Colour
4. Panel size suffix should be stated only if you want a stock panel

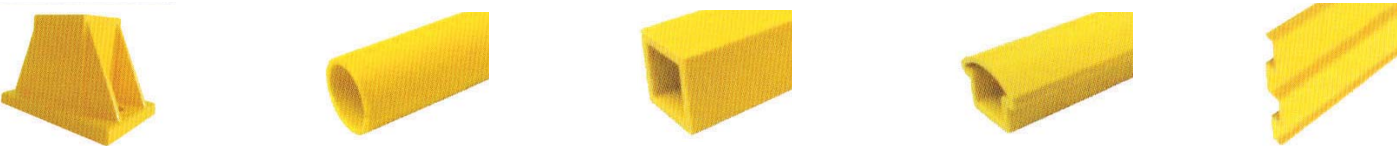
Panels will have fingers unless the required sizes fall on a bar width.

Examples:

G256IGG	1/1500 x 1200 span
G256VGY	2/6250 x 768 span (each in 2 pieces)
G386IGG1	6/1220 x 3660 span Stock panels

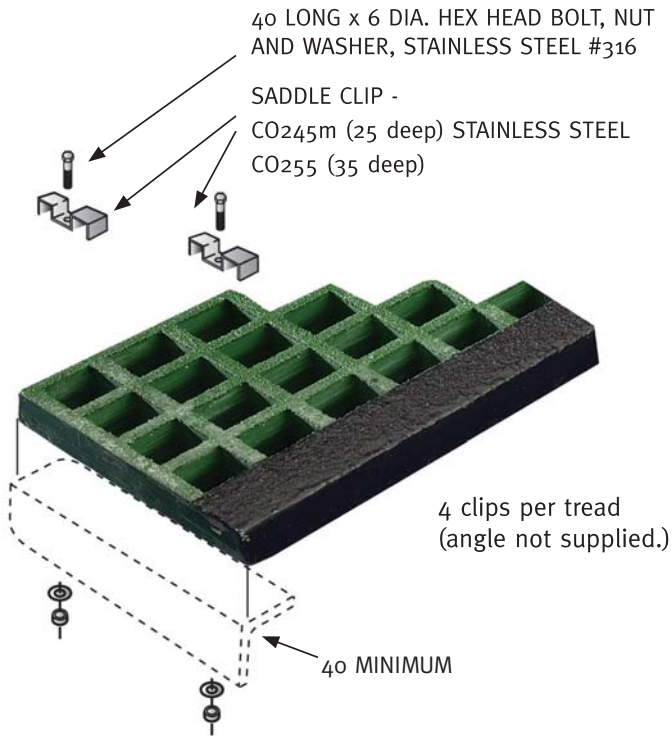
Standard Tread Type

Standard Material:	G386IGG Where G indicates green.
Standard Lengths:	730 or 768mm
Standard Widths:	235 or 273mm
Eg.	T5/G386IGG



Refer to website or local sales representative for further information. Further Products available: • Handrails • Structural Beams

Panel Installation



Clip Frequency

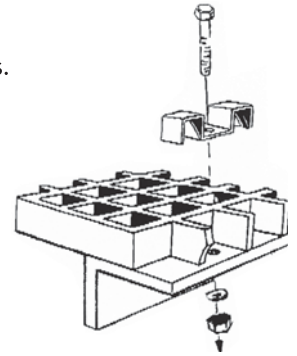
Nominal 4 per panel
(Approximately 3 per M2 where span is > 1500mm.
Approximately 5 per M2 where span is > 750mm or less.)

Installation

A bearing surface of at least 40mm is recommended at the ends of WEBFORGE FRP Stair Treads and panels.

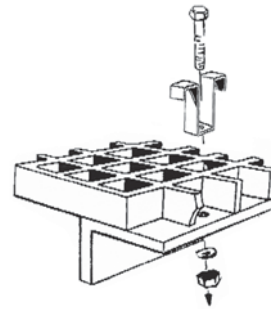
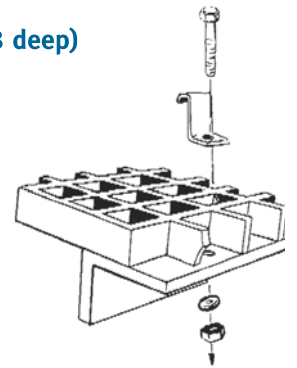
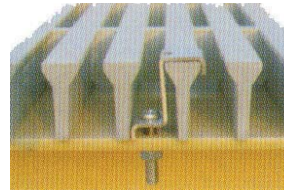
CO245m, CO255

- Restrains movement in all directions.



CO25SM (25 deep), CO23SM (38 deep)

- For moderate loads



CO26SM (Mini Mesh)

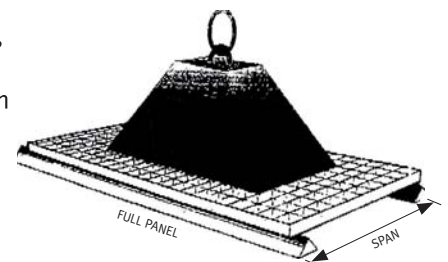
- Restrains movement in all directions.

Load & Deflection

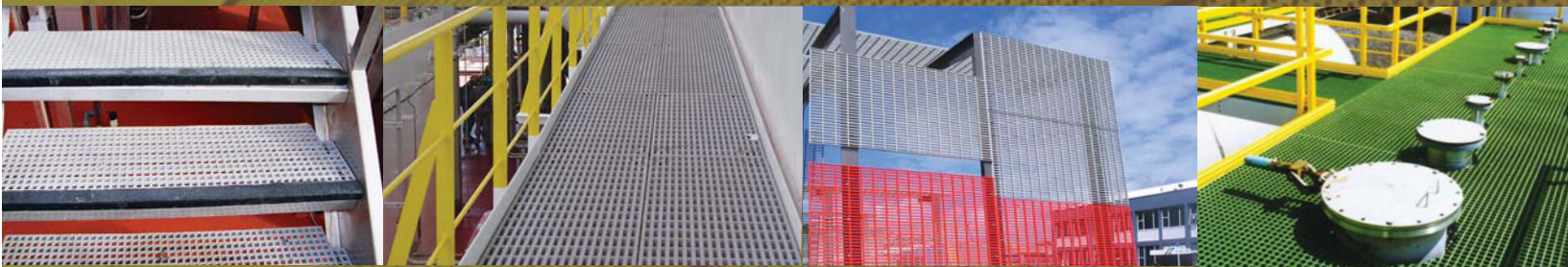
The design procedures associated with fibreglass plastic grating are entirely different from those associated with other materials. The prime consideration in designing WEBFORGE FRP Grating is the allowable deflection as opposed to the ultimate loading used with other materials (steel, aluminium, etc.) This is because the inherent elasticity of fibreglass reinforced plastic permits far greater deflection than steel without the danger of structural failure (this is based on the relatively lower flexural modulus of the FRP bars versus equivalent-sized metal bars.) This means that if you know the loading and the

allowable deflection, you can select the appropriate span from page 3.

In most cases, the type of grating is selected and the support structure is designed to limit deflection of the grating to that which provides a comfortable walking surface.



Chemical Environment	Type 'V'		Type 'I'	
	% CONCENTRATION	MAX. OPER. TEMP. F/C	% CONCENTRATION	MAX. OPER. TEMP. F/C
Acetic Acid	50	180/82	50	125/52
Aluminium Hydrozide	100	180/82	100	160/71
Ammonium Chloride	All	210/99	All	170/77
Ammonium Hydroxide	28	100/38	28	N/R
Ammonium Bicarbonate	50	160/71	15	125/52
Ammonium Sulphate	All	210/99	All	170/77
Benzene	N/R	N/R	N/R	N/R
Benzoic Acid	SAT	210/99	SAT	15/66
Borax	SAT	210/99	SAT	170/77
Calcium Carbonate	All	180/82	All	170/77
Calcium Nitrate	All	210/99	All	180/82
Carbon Tetrachloride	100	150/65	N/R	N/R
Chlorine - Dry Gas	-	210/99	-	140/60
Chlorine - Water	SAT	200/93	SAT	80/27
Chromic Acid	10	150/65	5	70/21
Citric Acid	All	210/99	All	170/77
Copper Chloride	All	210/99	All	170/77
Copper Cyanide	All	210/99	All	170/77
Copper Nitrate	All	210/99	All	170/77
Ethanol	50	100/38	50	75/24
Ethylene Glycol	100	200/93	100	90/32
Ferric Chloride	All	210/99	All	170/77
Ferrous Chloride	All	210/99	All	170/77
Formaldehyde	All	150/65	50	75/24
Gasoline	100	180/82	100	80/27
Glucose	100	210/99	100	170/77
Glycerine	100	210/99	100	150/66
Hydrobromic Acid	50	150/65	50	120/49
Hydrochloric Acid	37	150/65	37	75/24
Hydrogen Peroxide	30	150/65	5	100/38
Lactic Acid	All	210/99	All	170/77
Lithium Chloride	SAT	210/99	SAT	150/66
Magnesium Chloride	All	210/99	All	170/66
Magnesium Nitrate	All	210/99	All	140/60
Magnesium Sulphate	All	210/99	All	170/77
Mercuric Chloride	100	210/99	100	150/66
Mercurous Chloride	All	210/99	All	140/60
Niuckel Chloride	All	210/99	All	170/99
Nickel Sulphate	All	210/99	All	170/77
Nitric Acid	20	120/49	20	70/21
Oxalic Acid	All	210/99	All	75/24
Perchloric Acid	30	100/38	N/R	N/R
Phosphoric Acid	100	210/99	100	120/49
Potassium Chloride	All	210/99	All	170/77
Potassium Dichromate	All	210/99	All	170/77
Potassium Nitrate	All	210/99	All	170/77
Potassium Sulphate	All	210/99	All	170/77
Propylene Glycol	All	210/99	All	170/77
Sodium Acetate	All	210/99	All	170/77
Sodium Bisulphate	All	210/99	All	170/77
Sodium Bromide	All	210/99	All	170/77
Sodium Cyanide	All	210/99	All	170/77
Sodium Hydroxide	25	180/82	N/R	N/R
Sodium Nitrate	All	210/99	All	170/77
Sodium Sulphate	All	210/99	All	170/77
Stannic Choride	All	210/99	All	160/71
Sulphuric Acid	75	100/38	25	75/24
Tartaric Acid	All	210/99	All	170/77
Vinegar	100	210/99	100	170/77
Water - Distilled	100	180/82	100	170/77
Zinc Nitrate	All	210/99	All	170/77
Zinc Sulphate	All	210/99	All	170/77



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