



Pacific Composites

**SAFETREAD
FIBREGLASS GRATING**

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SAFETREAD grating systems from Pacific Composites provide an efficient and cost effective solution for all flooring, walkways and decking areas requiring long term performance in aggressive and corrosive environments. Constructed from glass reinforced thermoset resins, Safetread is designed and manufactured with a structural integrity commonly associated with steel and aluminium, without their corrosion problems.

CHEMICAL AND CORROSION RESISTANCE

Due to the use of premium grade resins containing UV inhibitors and an outer reinforcing continuous strand mat topped by a non glass surfacing tissue, optimum protection against corrosion and weathering can be achieved. Safetread resists a wide range of aggressive acids, salts, alkalis and other chemical environments which can have disastrous effects on metallic grating systems. All transverse locking components that maintain the load bar centres, are made from the same high strength, glass reinforced thermoset resins so that there is no sacrifice of corrosion resistance in the total grating panel.

HIGH STRENGTH TO WEIGHT RATIO

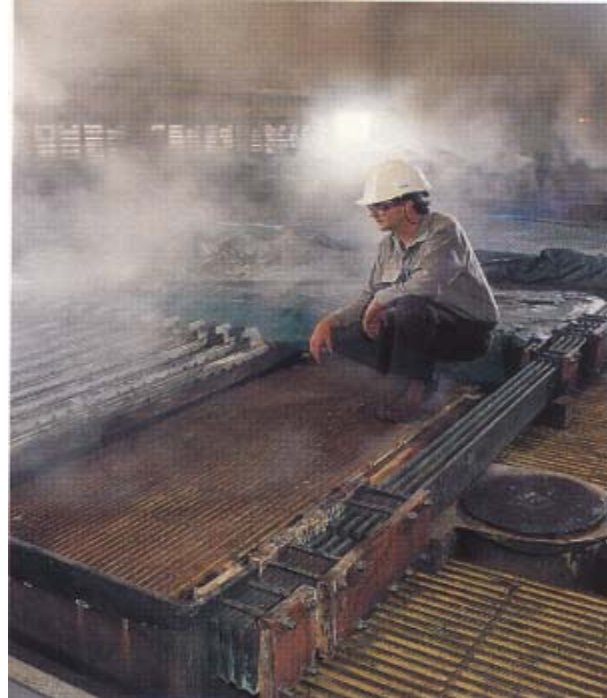
Safetread has a superior strength to weight ratio to steel or aluminium systems. It is highly resistant to fatigue, creep or permanent deformation. The pultrusion process utilised in manufacture results in high glass content and consistent reinforcement location. These are critical factors for consistent performance and the achievement of the necessary physical properties. The highly efficient I-Beam load carrying members are mechanically locked together, yielding a highly stable and high strength grating panel. The inner core of unidirectional glass reinforcement provides the high strength and stiffness required by the load bar. Due to the engineered shape of the load bar Safetread offers the maximum resistance to deflection and an ability to support greater loads than other fibreglass systems. Flexibility in design is offered by the ability to space the load bars either 25mm (1in) or 38mm (1 ½in) apart to achieve the optimum in load carrying capacity.

LIGHTWEIGHT AND MANAGEABLE

The pultruded fibreglass used in Safetread has a specific gravity of one-fourth that of steel and two-thirds that of aluminium which considerably simplifies installation and handling. Unlike metallic grating, Safetread grating can be easily cut on site using only hand tools.

TRANSPARENT TO RADIO FREQUENCIES

Fibreglass composites do not interfere with electromagnetic and radio frequency transmissions. Safetread grating can be safely applied in towers and other structures used in the transmission of such signals.



Pacific Composites' FRP grating installed in the highly corrosive acidic environment at the BHP Electrolytic Manganese Dioxide plant in Newcastle.

NON-CONDUCTIVE

Safetread can be used safely in electrical work areas. Special support conditions to prevent electrolytic corrosion are not required.

STABLE

Unlike other fibreglass systems, the use of a double mechanical lock system to locate and space the load bars makes Safetread a permanently stable panel.

NON SKID SURFACE

Safetread has a tough, quartz epoxy finish that will ensure the maximum in skid resistance and safety even in wet environments.

COST PERFORMANCE

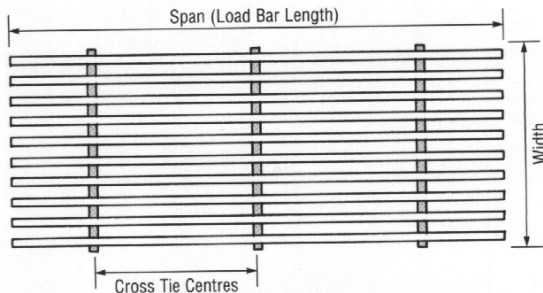
Very favourable results have been demonstrated with Safetread emphasising low installation costs and long service life with minimum maintenance.

PRODUCT FEATURES

Safetread is designed using high strength to weight ratio pultruded structural composite profile.

DIMENSIONS

Standard panel sizes are nominal 914mm (36 in) or 1219 mm (48in) wide by 3048 (120 in) span. Other sizes are available to order to a maximum of 1219 mm (48in) wide by 6096 (240in) span. Panel weight must be considered when ordering large panels. Special shape panels can be cut from standard width stock panels.



Panel sizes are specified: Width X Span. Width is the measurement from end to end of cross ties.

SAFETREAD STANDARD GRATING

Made with premium grade isophthalic polyester resin yielding excellent chemical resistance with high physical properties. This is used in areas not complying with ASTM D-635 or UL94 V-0 fire rating.

SAFETREAD FIRE RETARDANT GRATING

Also made with isophthalic polyester resin but with built-in fire retardant additives. This also gives good chemical resistance, high physical properties and is used in areas which must comply with ASTM E-84 and the self-extinguishing requirements of ASTM D-635 and UL94 V-0.

SUPERIOR CHEMICAL RESISTANCE

A premium grade of vinyl ester resin is used to replace isophthalic polyester, in either standard or fire retardant versions.

COLOUR

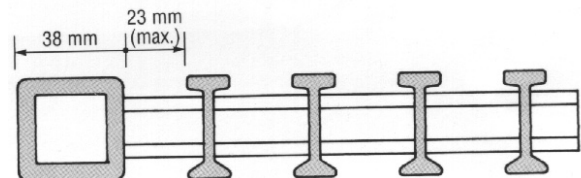
Standard and fire retardant Safetread is made in Safety Yellow. Vinyl ester systems for additional chemical resistance are beige in colour. Other colours can be made to order.

DESIGN

Safetread grating is engineered to meet the requirements of Australian Standard AS1657-1992. An exception is Series 600 Type 600 which exceeds the open area requirement of the standard.

STAIR TREADS

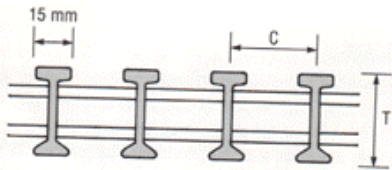
Constructed from the same high strength load bars as used in Safetread grating. The nosing of the tread is a tubular pultrusion finished on the upper and facing surface with a highly visible anti skid surface promoting pedestrian safety.



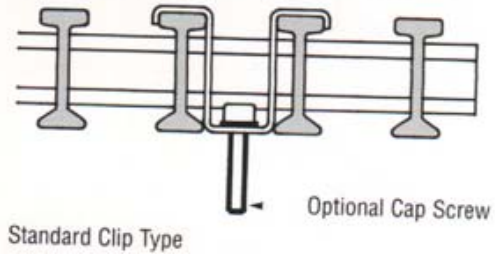
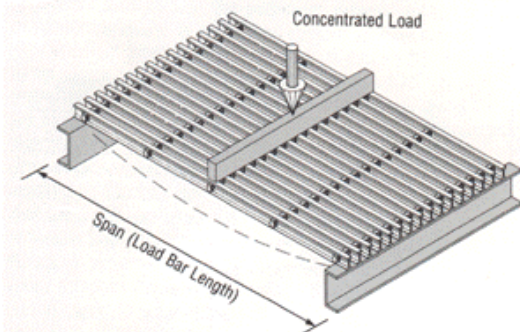
TECHNICAL SPECIFICATIONS

Series	Type	Grating Thickness (T)		Cross Tie Centres		Load Bars per 300 mm (12in) of Width	Load Bar Centres (C)		% Open Area	kg Per Square Metre	lb per Square Foot
		mm	(in)	mm	(in)		mm	(in)			
400	400	38	1.5	305	12	12	25	1	40	24.0	4.9
	409	38	1.5	228	9	12	25	1	40	24.0	4.9
	406	38	1.5	152	6	12	25	1	40	25.0	5.1
	403	38	1.5	76	3	12	25	1	40	28.0	5.7
600	600	38	1.5	305	12	8	38	1.5	60	17.0	3.5
	609	38	1.5	228	9	8	38	1.5	60	17.0	3.5
	606	38	1.5	152	6	8	38	1.5	60	18.0	3.7
	603	38	1.5	76	3	8	38	1.5	60	21.0	4.3

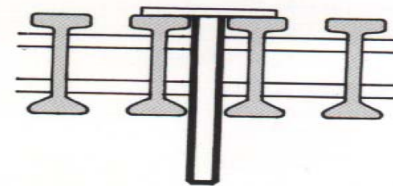
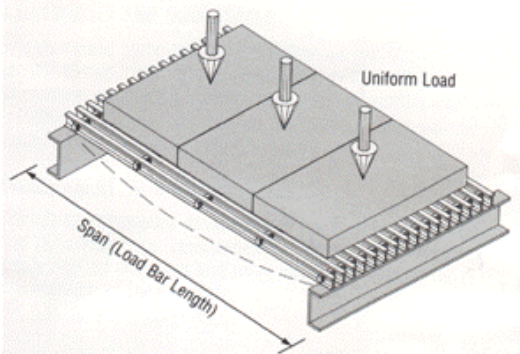
INSTALLATION



Safetread Series 600 grating can be securely fixed to the support members via 316 stainless steel clips. These clips clamp the top surface of the load bar, using a fastener located between load bars



Safetread Series 400 grating can be securely fixed via 316 stainless steel stud type clips as shown.



Stud Type Fastener

For those applications where drilling the sub-structure is not permitted, an ancillary angle clamp can be provided for use with either the standard or stud type clips. All cut edges must be sealed with resin sealer prior to installation.

LOAD DEFLECTION DATA (METRIC)

Series 600		CONCENTRATED LOAD						8 Load Bars / 300 mm of Width	
Span (mm)	KiloNewtons							Load for Deflection	
	0.5	1	2	3	5	7	10	6.4 mm	9.5 mm
Deflection (mm)							KiloNewtons		
300	*	*	*	0.30	0.50	0.70	1.00	13.70†	20.30†
450	*	0.30	0.60	0.89	1.49	2.08	2.96	13.70†	20.30†
600	*	0.47	0.93	1.40	2.34	3.27	4.67	13.70	20.30
900	0.57	1.15	2.31	3.46	5.77	8.08	11.64	5.55	8.23
1200	1.33	2.68	5.35	8.03	13.39	*	*	2.39	3.55
1500	2.56	5.12	10.23	*	*	*	*	1.25	1.86
1800	4.35	8.71	*	*	*	*	*	0.73	1.09

Series 600		UNIFORM LOAD						8 Load Bars / 300 mm of Width	
Span (mm)	KiloPascals							Load for deflection	
	2	3	4	5	7	9	12	6.4 mm	9.5 mm
Deflection (mm)							KiloPascals		
300	*	*	*	*	*	*	*	119.25†	177.00†
450	*	*	*	*	*	*	*	119.25†	177.00†
600	*	*	*	0.27	0.38	0.48	0.64	119.25	177.00
900	0.40	0.59	0.79	0.99	1.39	1.78	2.38	32.32	47.98
1200	1.22	1.84	2.45	3.06	4.28	5.51	7.34	10.50	15.60
1500	2.92	4.39	5.85	7.31	10.23	13.16	*	4.40	6.50
1800	5.97	8.95	11.94	14.93	*	*	*	2.10	3.20

Series 400		CONCENTRATED LOAD						12 Load Bars / 300 mm of Width	
Span (mm)	KiloNewtons							Load for deflection	
	0.5	1	2	3	5	7	10	6.4 mm	9.5 mm
Deflection (mm)							KiloNewtons		
300	*	*	*	*	0.33	0.46	0.66	20.60†	30.50†
450	*	*	0.40	0.60	0.99	1.39	1.97	20.60†	30.50†
600	*	0.31	0.62	0.93	1.56	2.18	3.11	20.60	30.50
900	0.38	0.77	1.54	2.31	3.85	5.39	7.69	8.32	12.35
1200	0.89	1.79	3.57	5.35	8.92	12.49	*	3.59	5.32
1500	1.71	3.41	6.82	10.23	*	*	*	1.88	2.79
1800	2.90	5.80	11.61	*	*	*	*	1.10	1.64

Series 400		UNIFORM LOAD						12 Load Bars / 300 mm of Width	
Span (mm)	KiloPascals							Load for deflection	
	2	3	4	5	7	9	12	6.4 mm	9.5 mm
Deflection (mm)							KiloPascals		
300	*	*	*	*	*	*	*	180.00†	267.00†
450	*	*	*	*	*	*	*	180.00†	267.00†
600	*	*	*	*	*	0.32	0.43	180.00	267.00
900	0.26	0.40	0.53	0.66	0.92	1.19	1.58	48.50	72.00
1200	0.82	1.22	1.63	2.04	2.86	3.67	4.90	15.70	23.30
1500	1.95	2.92	3.90	4.87	6.82	8.77	11.70	6.60	9.80
1800	3.98	5.97	7.96	9.95	13.27	*	*	3.20	4.70

*Deflection <0.25mm and > 15.00 mm have been omitted.

†Loads have been limited to allow for shear effects.

LOAD DEFLECTION DATA (IMPERIAL)

Series 600		CONCENTRATED LOAD						8 Load Bars / Foot Of Width	
Span (in)	Pounds							Load for deflection	
	100	250	500	750	1000	1500	2000	0.25 in	0.375 in
Deflection (inches)							Pounds		
12	*	*	*	0.01	0.02	0.03	0.04	2924†	4386†
18	*	0.01	0.03	0.04	0.05	0.08	0.11	2924†	4386†
24	*	0.02	0.04	0.06	0.09	0.13	0.17	2924	4386
36	0.02	0.05	0.11	0.16	0.21	0.32	0.42	1175	1765
48	0.05	0.12	0.25	0.37	0.49	*	*	505	760
60	0.09	0.24	0.47	*	*	*	*	265	395
72	0.16	0.40	*	*	*	*	*	155	235

Series 600		UNIFORM LOAD						8 Load Bars / Foot Of Width	
Span (in)	Pounds / ft ²							Load for deflection	
	40	65	75	100	150	200	250	0.25 in	0.375 in
Deflection (inches)							Pounds / ft ²		
12	*	*	*	*	*	*	*	2314†	3472†
18	*	*	*	*	*	*	*	2314†	3472†
24	*	*	*	*	0.02	0.03	0.04	2314	3472
36	0.02	0.03	0.04	0.05	0.06	0.08	0.10	625	935
48	0.05	0.08	0.09	0.12	0.19	0.25	0.31	200	300
60	0.11	0.18	0.21	0.28	0.43			85	130
72	0.24	0.39	0.46					41	61

Series 400		CONCENTRATED LOAD						12 Load Bars / Foot Of Width	
Span (in)	Pounds							Load for deflection	
	100	250	500	750	1000	1500	2000	0.25 in	0.375 in
Deflection (inches)							Pounds		
12	*	*	*	*	0.01	0.02	0.03	4385†	6579†
18	*	*	0.02	0.03	0.04	0.05	0.07	4385†	6579†
24	*	0.01	0.03	0.04	0.06	0.09	0.11	4385	6579
36	0.01	0.04	0.07	0.11	0.14	0.21	0.28	1768	2650
48	0.03	0.08	0.16	0.25	0.33	0.49	*	760	1140
60	0.06	0.16	0.31	0.47	*	*	*	395	595
72	0.11	0.27	*	*	*	*	*	230	345

Series 400		UNIFORM LOAD						12 Load Bars / Foot Of Width	
Span (in)	Pounds / ft ²							Load for deflection	
	40	65	75	100	150	200	250	0.25 in	0.375 in
Deflection (inches)							Pounds / ft ²		
12	*	*	*	*	*	*	*	3570†	3570†
18	*	*	*	*	*	*	*	3570†	3570†
24	*	*	*	*	*	0.02	0.03	3570	3570
36	0.01	0.02	0.03	0.04	0.05	0.06	0.07	935	1405
48	0.03	0.05	0.06	0.08	0.12	0.16	0.21	305	457
60	0.08	0.12	0.14	0.19	0.30	0.38	0.47	133	200
72	0.16	0.26	0.30	0.40	*	*	*	61	92

Deflection <0.010 in and > 0.50 in have been omitted.

† Loads have been limited to allow for shear effects.

SUGGESTED GRATING SPECIFICATION



Safetread Grating installed at ICI Sodium Chloride Plant, Yarraville, Victoria.



Pacific Composites' Safetread grating installed in a corrosive environment at the Porgera Gold Mine in Papua New Guinea.

- Grating shall be Safetread Pultruded grating as manufactured by Pacific Composites.
- Grating shall be constructed from high quality pultruded profiles. All load bearing members shall be mechanically locked to each other via two spacing bars and a central locking rod.
- All pultruded profiles used in grating shall be made with premium grade isophthalic polyester or vinyl ester resins and meet the fire retardancy requirements of UL94 V-0, ASTM D-635 and ASTM E-84 where required.
- All pultruded profiles shall contain nominally 70% by weight E glass reinforcement. The pultruded load bar will be of high strength I-Beam design.
- Where anti-skid is required, a tough epoxy-quartz coating shall be applied to the surface of all load bearing members.
- All pultruded load bearing members shall have a non-glass surfacing veil applied to the outer surface and the resin matrix is to contain UV absorbers.
- Grating shall comply with Australian Standard AS1657-1992.



Safetread grating as installed at Gunpowder Copper Limited Queensland.



Extensive physical testing can be carried out in Pacific Composites' well equipped R&D facilities.

QUALITY ASSURANCE

The quality management system operating throughout Pacific Composites is certified to the International Standard ISO 9001. This system is fully implemented throughout the company and covers design, development, production and management.

RESEARCH AND DEVELOPMENT

Pacific Composites has a fully equipped R&D Laboratory and highly trained personnel. The company's Chemists and Engineers welcome the opportunity to develop innovative solutions to customer problems.

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