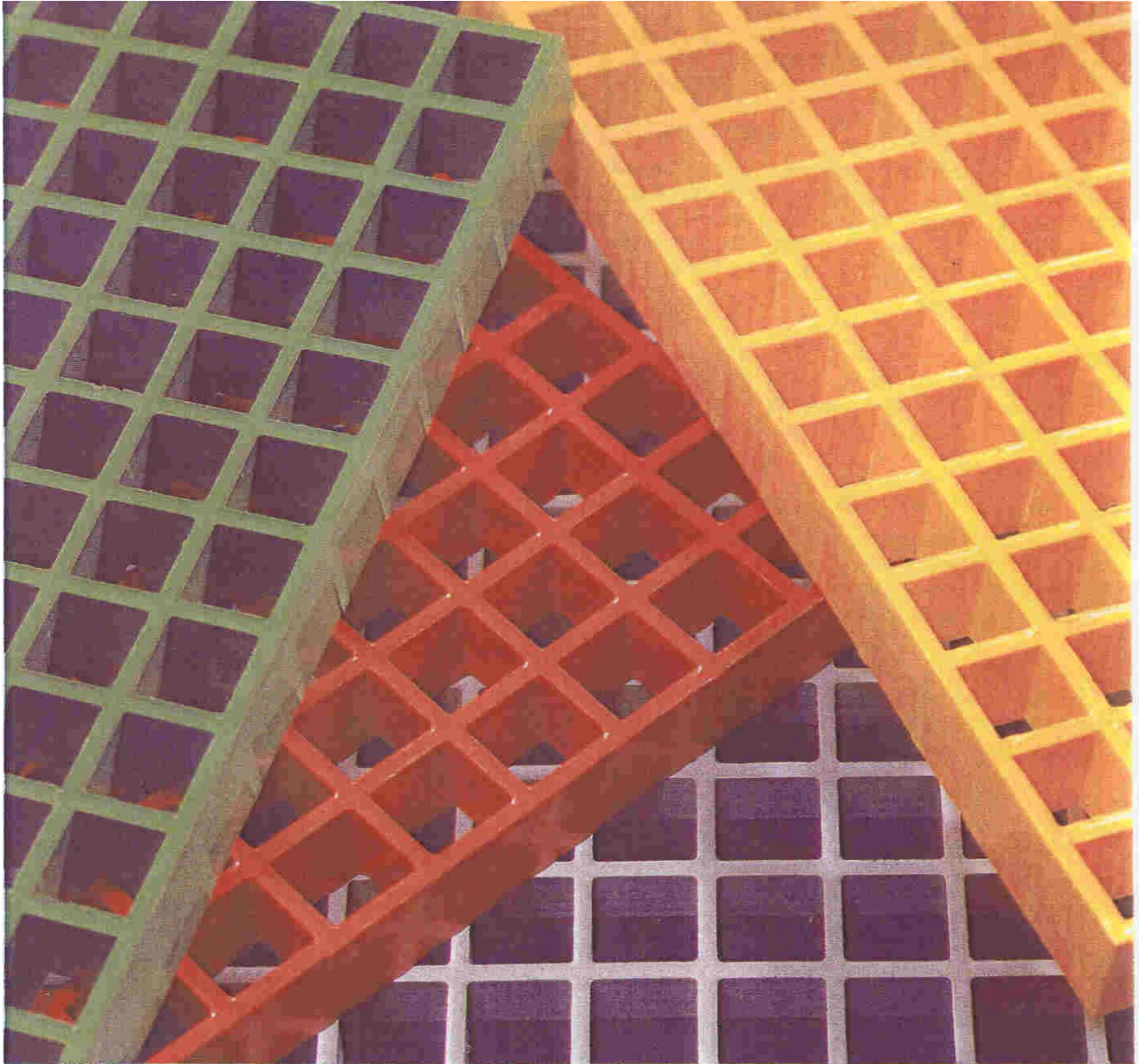


GRP MOULDED GRATING



PO Box 72 Bayswater Victoria 3153 Australia
Tel +61 3 8727 9600 Fax +61 3 8727 9688
Website www.exelcomposites.net

GRP MOULDED GRATING

Exel Composites moulded grating provides an efficient and cost effective solution for all flooring, walkways and decking areas requiring long term performance in very aggressive and corrosive environments. Constructed from glass reinforced thermoset resins, Exel Composites moulded grating is an excellent choice to replace conventional steel and aluminium flooring systems in such aggressive environments.

CHEMICAL AND CORROSION RESISTANCE

Exel Composites moulded fibreglass grating is manufactured using high strength fibreglass rovings and a range of premium grade thermosetting resins. A high resin content of nominally 65-70% provides long maintenance free performance in corrosive environments.

HIGH STRENGTH TO WEIGHT RATION

The use of high strength E-glass roving reinforcement, moulded to form a square mesh grating panel, produces a strong flooring system suitable for safe pedestrian traffic on a wide range of spans.

LIGHT WEIGHT AND MANAGEABLE

The composite used in the construction of Pacific Composites moulded grating has a specific gravity one-fourth that of steel and two-thirds that of aluminium which considerably simplifies installation and handling. Unlike metallic grating, moulded grating panels can be easily cut on site using only hand tools. The ease of handling makes it the ideal grating to install in those difficult to access areas. Load bearing bars in both directions of the panel allow for use without continuous side support.

NON-CONDUCTIVE

Exel Composites moulded grating can be safely used in electrical work areas. Special Support conditions to prevent electrolytic corrosion are not required.

IMPACT RESISTANT

Having a square mesh and a continuous woven roving reinforcement pattern assists in providing a grating panel with high impact resistance. Repeated loads can be applied with little or no permanent deformation.

STABLE

Panels of moulded grating are inherently stable due to their square mesh construction. No amount of pedestrian traffic will separate the grid components thus affording a safe reliable walking surface.

NON SKID SURFACE

Standard moulded grating panels have a concave profile on the upper surface for skid resistance. This is created in the moulding process. Grit surfaces are also available on request and this tough quartz finish will ensure the maximum in skid resistance and safety even in wet environments.

NON SPARKING

Impact on metallic grating by metallic objects can create sparks of sufficient energy to ignite combustible gases. Exel Composites moulded grating installed in such dangerous areas will not create sparks when impacted with metallic or other objects.

TRANSPARENT TO RF TRANSMISSION

Fibreglass does not cause electromagnetic interference and is transparent to radio frequency transmissions. Exel Composites moulded fibreglass grating provides a solution in applications where clarity of communication transmissions is paramount.

COST PERFORMANCE

Very favourable results can be demonstrated with Exel Composites moulded grating with emphasis on low installation costs, long service life and minimum maintenance.

PRODUCT FEATURES

DIMENSIONS

Two standard panel sizes are available: 1220 x 3660mm and 915 x 3050mm. Other sizes on request. Standard panels are available in 3 thicknesses: 25, 38 and 51mm. Whilst ample stocks are normally maintained, it is recommended that availability be confirmed pending project requirements.

Special shape panels can be cut from standard width stock panels. Panel weight should be considered when ordering large panels.

RESIN SYSTEMS

The isophthalic polyester resin system is designed for corrosive conditions associated commonly with food processing, beverage, waste water, certain chemicals, salt environments, pulp and paper to name some.

Premium grade vinyl ester resin offers superior resistance to corrosion over a broad range of chemicals coupled with elevated temperatures. Both types of resin systems come standard with UV inhibitors and fire retardants conforming to class 1 flame spread rating of less than 10 when tested to the Tunnel Test requirements of ASTM E-84.

To suite various environments, isophthalic polyester panels are available in green or yellow whilst vinyl ester panels are available in yellow. Other colour options are available on request.

IP-F1

This premium grade isophthalic polyester resin system is recommended for use in industrial and chemical applications where moderately corrosive environments are encountered. It has a Class 1 flame spread rating of less than 25 when tested to the Tunnel Test requirement of ASTM E-84.

VE-F2

Premium grade vinyl ester resin offers excellent resistance to a wide range of highly corrosive environments. It has a Class 1 flame spread rating of less than 25 when tested to the Tunnel test Requirements of ASTM E-84.

DESIGN

Exel Composites moulded grating is engineered to meet the requirements of Australian Standard AS1657-1992.

STAIR TREADS

Constructed from the same square mesh grating panel with a nosing edge finished with a quartz anti-slip coating coloured to match.

SOLID SURFACE

Exel Composites moulded grating is available with an integral cover bonded to the top surface and finished with a tough quartz anti-slip surface.

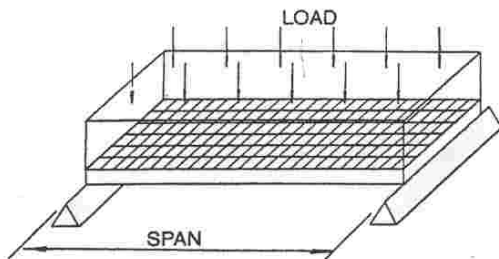
TYPICAL APPLICATIONS

- Food Processing
- Water Treatment
- Chemical
- Mineral Processing
- Pulp and Paper
- Beverage
- Fertilizers
- Electrical
- Aqua Culture
- Materials Handling
- Power Plants
- Sewerage Treatment
- Metal Finishing
- Marina Platforms
- Offshore
- Agriculture

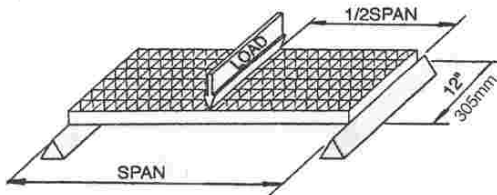
TECHNICAL SPECIFICATIONS

Mesh Type	Thickness (nominal)		Bar Spacing		% Open Area	Kg per Square Metre	Lb per Square Foot
	mm	in.	mm	in.			
Square	25	1	38 x 38	1½ x 1½	70	11.42	2.35
	38	1½	38 x 38	1½ x 1½	70	18.36	3.75
	51	2	51 x 51	2 x 2	69	20.0	4.1
Rectangular	25	1	25 x 100	1 x 4	69	13.4	2.75

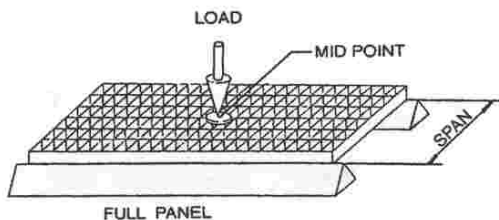
LOADING TYPE



U Uniform load – kg/m² (lbs/ft²)
 u Uniform load deflection – mm (in.)



C Concentrated (line load – kg/m width (lbs/ft)
 c Concentrated line load deflection – mm (in.)

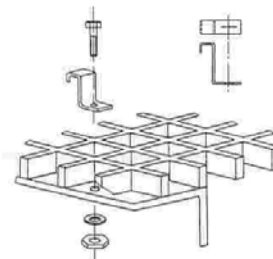


P Concentrated load – kg (lbs)
 p Concentrated point load deflection – mm (in.)

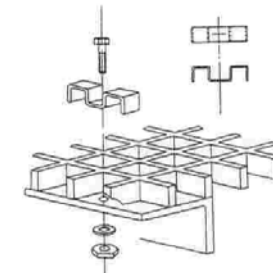
INSTALLATION

Exel Composites moulded grating can be securely fixed to support members via stainless steel clips. Clips type L and M clamp the top surface of the grating panel with a fastener located in the mesh opening.

TYPE L
 HOLD DOWN
 CLIPS

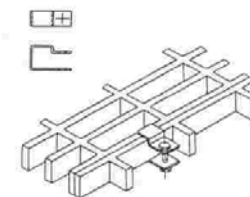


TYPE M
 HOLD DOWN
 CLIPS



Where adjacent panels are required to be joined, a type C end panel clip is used.

TYPE C
 END PANEL
 CLIPS



For those applications where drilling the sub-structure is not permitted, an ancillary angle clamp can be provided for use with the M type clip.

Caution: In the case of site fabrication, all cut edges must be sealed with resin sealer prior to installation.

LOAD DEFLECTION DATA (METRIC)

Clear Span (mm)	Load Type	25 mm THICK (38mm x 38mm) Square Mesh									
		500	1500	2500	3500	4400	5000	6800	8800	*	*
305	U u	500 0.26	1500 0.54	2500 1.02	3500 1.27	4400 2.03	5000 2.58	6800 2.80	8800 3.31	*	*
	C c	50 0.25	100 0.75	150 1.02	200 1.27	250 1.53	300 2.08	360 2.29	410 2.80	460 3.06	500 3.30
460	U u	250 0.51	500 1.02	1000 1.78	1500 2.54	2000 3.56	2500 4.60	3000 5.60	3500 6.29	*	*
	C c	25 0.51	50 1.04	90 1.78	140 2.03	180 3.56	230 4.32	280 5.56	320 6.61	*	*
	P p	50 0.25	100 0.51	150 1.02	200 1.27	240 1.78	280 2.01	320 2.28	360 2.52	410 3.02	450 3.56
610	U u	120 0.76	250 1.27	370 2.04	490 2.54	1000 5.84	1250 7.28	1500 8.85	*	*	*
	C c	12 0.51	23 1.02	34 1.77	45 2.50	90 4.32	120 5.84	140 7.12	*	*	*
	P p	45 0.76	135 1.78	230 3.05	270 3.55	320 4.10	360 5.06	410 5.59	460 6.35	*	*
915	U u	120 3.05	250 6.35	370 10.4	490 14.5	740 22.4	1000 29.5	1250 37.4	*	*	*
	C c	12 1.78	23 3.56	45 7.60	68 11.5	90 15.5	115 19.8	140 23.9	*	*	*
	P p	50 1.55	100 3.10	150 4.36	200 6.20	250 7.74	300 8.95	350 10.9	*	*	*
1120	U u	120 6.35	250 12.7	370 19.1	490 24.9	740 37.8	*	*	*	*	*
	C c	12 3.02	23 6.10	34 8.38	45 11.7	90 22.6	*	*	*	*	*
	P p	25 1.78	35 2.55	45 3.56	90 6.35	140 8.90	*	*	*	*	*

LOAD DEFLECTION DATA (METRIC)

Clear Span (mm)	Load Type	38 mm THICK (38mm x 38mm) Square Mesh									
		500	1000	1500	2000	2500	3000	3500	3900	4400	4900
305	U u	500 <0.25	1000 <0.25	1500 <0.25	2000 0.26	2500 0.32	3000 0.48	3500 0.51	3900 0.63	4400 0.76	4900 1.04
	C c	50 <0.25	100 0.25	150 0.32	200 0.51	250 0.63	300 0.76	360 0.88	410 1.04	460 1.13	500 1.27
460	U u	250 <0.25	500 0.25	1000 0.76	1500 1.04	2000 1.27	2500 1.54	3000 1.78	3500 2.29	3900 2.56	4400 3.05
	C c	50 <0.50	100 0.78	150 1.35	200 1.58	250 2.18	300 2.36	350 2.70	400 2.91	450 3.43	500 3.95
	P p	50 <0.25	100 <0.25	150 0.50	200 0.62	250 0.78	300 0.93	350 1.03	400 1.25	450 1.42	500 1.53
610	U u	500 0.76	1000 1.27	1500 2.29	2000 3.56	2500 4.58	3000 5.60	3200 6.10	4200 8.12	*	*
	C c	50 0.76	100 1.52	150 2.29	200 3.05	250 4.06	300 4.58	350 5.35	400 6.10	450 6.96	*
	P p	50 <0.25	100 <0.51	150 0.75	200 1.25	250 1.56	300 1.78	350 2.04	400 2.29	450 2.60	500 3.05
915	U u	250 2.08	370 3.33	500 4.58	610 5.60	730 6.86	850 8.14	1000 9.65	1700 17.17	*	*
	C c	25 1.04	35 1.87	50 2.64	75 3.85	100 5.20	125 6.24	150 7.81	175 8.95	200 9.99	*
	P p	50 0.76	100 1.27	150 2.08	200 2.64	250 3.10	300 4.16	350 4.82	400 5.62	450 6.45	500 7.39
1220	U u	195 5.10	240 6.61	270 7.44	290 8.32	320 9.26	340 9.94	370 10.7	490 14.1	*	*
	C c	23 2.50	27 3.05	32 3.84	36 4.58	41 5.08	45 5.83	90 10.4	115 12.7	140 16.0	*
	P p	50 1.27	100 2.55	150 4.07	200 5.33	250 6.86	300 8.13	350 9.65	400 10.9	450 12.2	500 14.0

LOAD DEFLECTION DATA (METRIC)

Clear Span (mm)	Load Type	51 mm THICK (51mm x 51mm) Square Mesh									
		1250	2500	3500	4900	9800	14600	20000	25000	29000	32000
305	U	1250	2500	3500	4900	9800	14600	20000	25000	29000	32000
	u	<0.25	0.25	0.38	0.50	1.04	1.50	2.04	2.50	2.80	3.05
	C	50	125	230	340	450	680	900	1200	1400	1600
460	u	<0.25	0.25	0.51	1.04	1.50	2.04	2.29	3.31	4.33	5.12
	c	<0.25	0.25	0.50	1.04	1.50	1.78	2.29	2.80	3.56	4.07
	P	50	125	230	340	450	680	900	1200	1400	1600
610	p	<0.25	0.25	0.51	1.04	1.27	1.78	2.50	3.56	4.58	5.85
	U	500	1250	2000	2500	3000	3500	3900	4400	4900	6100
	u	0.51	1.04	1.78	2.29	2.80	3.31	3.81	4.32	4.83	6.10
760	C	50	125	180	275	360	410	450	550	640	680
	c	0.51	1.04	1.50	2.50	3.31	3.56	4.07	5.12	5.60	6.10
	P	50	125	230	340	450	570	680	800	900	1200
915	p	<0.25	0.51	1.04	1.27	1.78	2.29	2.50	3.05	3.56	4.83
	U	500	750	1000	1250	1500	2000	2500	3000	3500	3900
	u	0.77	1.27	1.78	2.29	3.31	4.32	5.34	6.40	7.65	9.15
1070	C	50	125	180	230	275	320	360	410	450	500
	c	0.77	1.50	2.29	3.31	4.07	4.83	5.60	6.40	7.14	7.88
	P	50	125	230	340	450	570	680	800	900	1200
1220	p	0.25	0.77	1.50	2.29	3.05	3.81	4.32	5.34	5.85	7.38
	U	250	375	500	750	1000	1250	1500	1700	2000	2500
	u	1.04	1.50	2.04	3.05	4.32	5.34	6.40	7.38	8.65	10.93
1380	C	23	50	90	140	180	230	275	320	360	410
	c	0.51	1.27	2.04	3.05	4.32	5.34	6.62	7.28	9.15	10.42
	P	50	125	230	340	450	570	680	800	900	1200
1520	p	0.25	1.04	1.78	2.80	3.81	4.58	5.60	6.40	7.65	9.92
	U	250	375	500	750	1000	1250	1500	1700	*	*
	u	1.78	2.58	3.57	5.10	6.90	8.65	10.68	12.97	*	*
1220	C	23	34	50	68	90	140	180	230	275	320
	c	1.04	1.27	1.78	2.50	3.31	5.12	6.88	8.65	10.68	12.96
	P	23	50	125	230	340	450	570	680	780	860
1220	p	0.25	0.51	1.50	3.05	4.83	6.40	7.88	9.40	10.42	11.43
	U	250	375	500	625	750	1000	1250	*	*	*
	u	3.05	4.83	6.40	8.14	9.92	11.94	14.50	*	*	*
1220	C	23	34	50	90	140	180	230	275	*	*
	c	1.50	2.04	2.80	5.34	8.14	11.18	14.23	17.02	*	*
	P	23	50	125	230	340	450	570	680	800	900
1380	p	0.25	0.76	1.78	3.81	5.60	7.65	9.40	11.43	13.21	15.24
	U	125	250	375	500	625	750	1000	*	*	*
	u	1.27	4.32	7.12	10.16	13.21	16.51	20.58	*	*	*
1380	C	23	34	50	68	90	140	180	230	*	*
	c	1.78	2.80	3.81	5.60	7.65	11.43	15.24	19.05	*	*
	U	125	250	375	500	625	*	*	*	*	*
1520	u	3.56	8.90	13.21	17.80	22.61	*	*	*	*	*
	C	12	23	34	50	90	140	*	*	*	*
	c	1.27	2.80	4.32	5.60	11.69	17.28	*	*	*	*

CHEMICAL RESISTANCE

Chemical Environment	ISOPHTHALIC		VINYL ESTER	
	% Concentration	Temperature °F/°C	% Concentration	Temperature °F/°C
Acetic Acid	50	125/50	50	185/85
Acetone	N/R	N/R	N/R	N/R
Aluminium Salts	All	160/70	All	195/90
Ammonium Chloride	All	160/70	All	185/85
Ammonium Hydroxide	N/R	N/R	20	100/38
Ammonium Carbonate	N/R	N/R	All	150/65
Ammonium Bicarbonate	15	125/50	All	125/50
Ammonium Nitrate	All	160/70	All	185/85
Benzene	N/R	N/R	N/R	N/R
Benzene Sulfonic Acid	25	115/45	All	195/90
Benzoic Acid	All	150/65	All	195/90
Calcium Hydroxide	25	150/65	35	185/85
Calcium Hypochlorite	All	150/65	All	185/85
Calcium Salts	All	150/65	All	195/90
Calcium Nitrate	All	185/85	All	195/90
Carbonic Acid	All	125/50	All	185/85
Carbon Tetrachloride	N/R	N/R	100	140/60
Chlorine Dioxide	N/R	N/R	All	140/60
Chlorine Water	All	75/25	All	125/50
Chromic Acid	10	140/60	10	185/85
Citric Acid	All	150/65	All	185/85
Copper Cyanide Plating	N/R	N/R	All	185/85
Copper Salts	All	150/65	All	185/85
Ethanol	50	N/R	50	85/30
Ethyl Acetate	N/R	N/R	N/R	N/R
Ferric Chloride	100	150/65	100	185/85
Ferric Salts	All	150/65	All	185/85
Glycerine	100	150/65	100	195/90
Heptane	100	105/40	100	125/50
Hydrobromic Acid	50	125/50	50	125/50
Hydrochloric Acid	37	75/25	37	95/35
Hydrocyanic Acid	All	150/65	All	185/85
Hydrogen Peroxide	10	75/25	30	75/25
Hydrochlorous Acid	10	85/30	20	150/65
Lactic Acid	All	170/75	All	195/90
Lead Acetate	All	170/75	All	195/90
Lead Chloride	All	140/60	All	195/90
Lead Nitrate	All	150/65	All	195/90
Lime Slurry	All	150/65	All	185/85
Magnesium Salts	All	150/65	All	185/85
Maleic Acid	100	150/65	100	185/85
Mercury Chloride	100	150/65	100	185/85
Nickel Salts	All	170/75	All	195/90
Nitric Acid	N/R	N/R	20	105/40
Perchloric Acid	N/R	N/R	30	85/30
Phosphoric Acid	100	125/50	100	195/90
Potassium Salts	All	150/65	All	185/85
Phthalic Acid	-	-	All	185/85
Silver Nitrate	100	150/65	100	185/85
Sodium Hypochlorite	N/R	N/R	10	150/65
Sodium Salts	All	75/25	All	105/40
Stannic Chloride	All	160/70	All	195/90
Styrene	N/R	N/R	N/R	N/R
Sulphuric Acid	50	N/R	50	185/85
Sulphuric Acid	25	75/25	25	195/90
Tartaric Acid	All	170/75	All	195/90
Trisodium Phosphate	N/R	N/R	All	170/65
Urea	All	75/25	All	140/60
Vinegar	100	170/75	100	195/90
Water, distilled	100	170/75	100	195/90
Water, sea	All	170/75	All	195/90
Zinc Salts	100	150/65	100	185/85

SUGGESTED GRATING SPECIFICATION AND APPLICATION

SPECIFICATION

The moulded fibreglass grating shall be as supplied by Exel Composites.

Grating panels shall be of square or rectangular mesh in 25, 38 or 51mm (1", 1½" or 2") thicknesses.

Grating shall be constructed using E-glass roving reinforcement with a matrix of either Orthophthalic Polyester, Isophthalic Polyester or Vinyl Ester resin and where necessary shall comply with the fire retardancy requirement of ASTM E-84.

The grating shall be of one piece construction with all upper load bearing surfaces in the same plane.

Upper walking surface can be concave or gritted with quartz, bonded with a tough epoxy.

Colours can be green, grey, orange or yellow.

APPLICATION

Exel Composites moulded grating is designed for use in walkways, platforms and other flooring applications in these wide range of industries:

- Oil and Gas
- Industrial
- Food Processing
- Water Treatment
- Marine
- Mining
- Mineral Processing
- Power Generation
- Environmental Control
- Pulp and Paper
- Breweries
- Chemical
- Plating
- Electrical
- Telecommunications

QUALITY ASSURANCE

The quality management system operating throughout Exel 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

Exel 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.



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



Head Office:

991 Mountain Highway, Boronia, Victoria 3155
P.O. Box 72, Bayswater, Victoria, 3153, Australia
Telephone 61 3 8727 9600 Facsimile 61 3 8727 9688
Website: www.exelcomposites.net
E-mail: office.melbourne@exel.net

Brisbane Office:

15 Ada Street, Coopers Plains, Queensland 4108
P.O. Box 391, Archerfield, Queensland 4108
Telephone 61 7 3274 1099 Facsimile 61 7 3274 2041
Email: office.brisbane@exel.net

Exel Composites—ABN 41 005 952 698

Although we believe the data in this publication to be accurate and reliable, we offer it as a service only and assume no liability in regard to its use.

Brochure No. 13