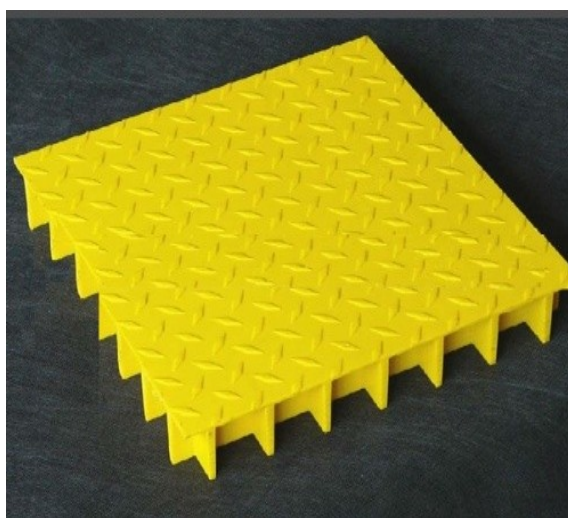
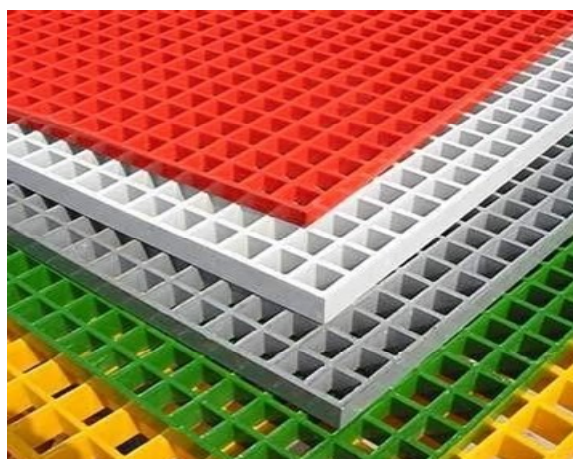


NO: AC.2006.MG.01



**Asia Composite Co.
(Knowledge Base)**

SPECIFICATIONS OF GRP/FRP MOLDED GRATINGS



MOLDED GRATING PROCESS

Molded grating is manufactured in an open, heated mold that resembles a large waffle iron. Continuous reinforcements are placed in the mold in alternating layers and thoroughly wetted out with resin. This continuous process produces an integral, one-piece construction, which offers excellent corrosion resistance as well as bi-directional strength.

When the weaving process is completed, the mold is heated to cure the panel. If the grating is to have embedded grit, the mold will receive the grit at this time before the part is cured.

After curing, the part is extracted from the mold. The standard part would have a meniscus (concave) top surface for slip resistance. Should a standard grit surface be specified, the grit would be bonded to the top of the completed grating panel as a secondary operation.

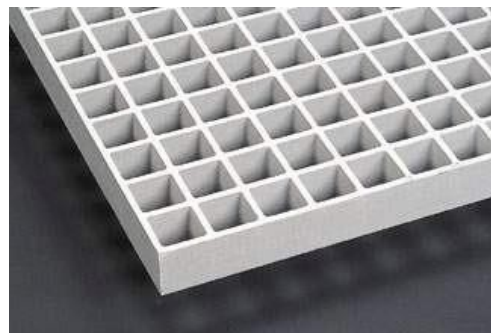
MOLDED GRATING

Liquid resin and continuous fiberglass roving are systematically laid in the mold, layer after layer manually, to produce the desired thickness and panel dimensions. The finished molds are set aside for a predetermined time to allow the panel to cure. The panel is then ejected from the mold. The molds are cleaned and prepared for the process to begin again.



The one piece interwoven square mesh construction of molded grating produces two primary benefits: maximum corrosion resistance and high strength.

Because the grating is "cast" in one piece, there is no mechanical joint between bearing bars. The high percentage of resin in molded grating offers superior corrosion resistance. The molded grating with a square mesh pattern offers increased load capacity and panel utilization due to this bi-directional trait.



Cutting access holes in the molded grating does not weaken the panel and does not require additional or costly supports.

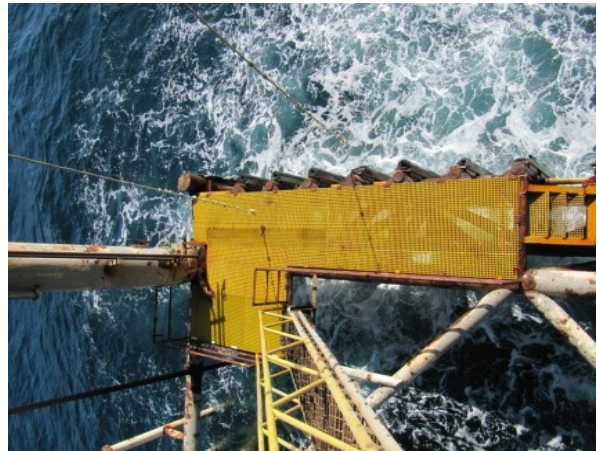
APPLICATIONS AND MARKET OF MOLDED GRATING

Applications

- Flooring
- Platform
- Walkways
- Assembly Lines
- Trench Covers
- Stairs
- Ramps
- Greenhouse Shelving
- Pool Drainage
- Portable Building Floors
- channel's cover

Markets

- Oil & Gas
- Chemical
- Electronics
- Marine (including military vessels)
- Petroleum Processing
- Plating
- Pulp and Paper
- Water/Wastewater
- Zoos/Aquariums
- Recreational Facilities
- Manufacturing



Benefits and Characteristics of GRP/FRP Molded Grating

- Non-Slip
- Corrosion Resistance
- Fire Resistance
- Non-Magnetic
- Impact Resistance
- Non-sparking
- Maintenance Free
- Light Weight
- Design
- Cost Savings
- Non-conductive
- Low Installation Costs
- High Strength-to-Weight Ratio
- Conductive Grating
- High Performance



DESCRIPTION

NON-SLIP

Composite Grating's integral grit top surface provides outstanding anti-slip protection for personnel in wet and oily environments. The grit is embedded in the top surface of each panel prior to curing. This combination of integral construction, plus depth of the embedded grit, creates a long-lasting maximum anti-slip top surface.

CORROSION RESISTANCE

Over a wide PH range (both acidic and caustic) is achieved by use of a premium grade resin system. FRP grating will outperform metallic grating when exposed to continuous submersion, splashing, spills, fumes or gases. Corrosion is a major problem for metal grating, stair treads and other products in many different industries such as chemical plants, food and beverage factories, water and wastewater facilities, power facilities. Molded grating are particularly designed to provide safe, long lasting and economical and worry-free solutions environments where chemicals and other corrosive materials attack and destroy metal.

FIRE RESISTANCE

Composite Grating is available in various resin systems, two of which meet the Class 1 flame spread rating of 25 or less, in accordance with ASTM E-84 Tunnel Test Method. If a flame spread of 10 or less is required, it will be available in request.

NON-MAGNETIC

The non-magnetic properties allow the Composite grating to be used in sensitive installations where the inherent magnetic properties of metallic grating would prove unsuitable.

IMPACT RESISTANCE

The impact resistance of Composite Grating allows repeated deflection without permanent deformation. A certain amount of deflection can occur with loading. However, once the load is removed, the grating will return to its original shape, unlike metallic grating, which will remain deformed and require costly repairs or replacement.

NON-SPARKING

The non sparking qualities of Composite Grating systems are ideally suited for those installations where hydrogen or other combustible gases may be found and which may explode or cause a fire from sparks produced from accidental dropping of tools onto the grating.

MAINTENANCE FREE

The use of Composite Grating virtually eliminates maintenance costs since painting is not required, and UV inhibitors protect against degradation from the sun.

LIGHT WEIGHT

Composite Grating weighs about one-quarter as much as steel grating. Two men can easily handle full panels, without the need for hoists, pulleys or dollies. If the Composite Grating needs to be moved for cleaning, maintenance or utility access, there is less chance of back injuries. The lightweight design of the grating reduces installation and fabrication costs, weighing only 12 kilos per sq meter for 25mm and 18 kilos per sq meter for 38mm.

COST SAVINGS

In a review of costs, Composite grating showed significant savings over the use of stainless steel grating, and when consideration is given to 'life cycle costs', combining anti-slip benefits, the saving over the use of metal grating alternatives is quite considerable.

NON-CONDUCTIVE

The non-conductive properties make Composite Grating ideally suited for work platforms and flooring situated in electrically hazardous locations.

LOW INSTALLATION COSTS

Composite Grating weights considerably less than conventional metal gratings, and are easier and less expensive to transport, install and remove. Only simple hand tools are required for installation and removal, eliminating the need for costly equipment and labor costs associated with heavy lifting, cutting and welding.

HIGH PERFORMANCE

Composite structural Composite grating materials have demonstrated a proven ability to withstand the harsh side effects of corrosive conditions better than galvanized steel. For many years, composites have been reliably used in traditionally corrosive industries such as chemical processing, plating and marine construction. While the cost of material is an important criteria in the design of a project, it does not reflect the total cost of the project. Beyond material purchase price, the engineer also should consider the related costs of installation, maintenance over time and replacement of debilitated materials.



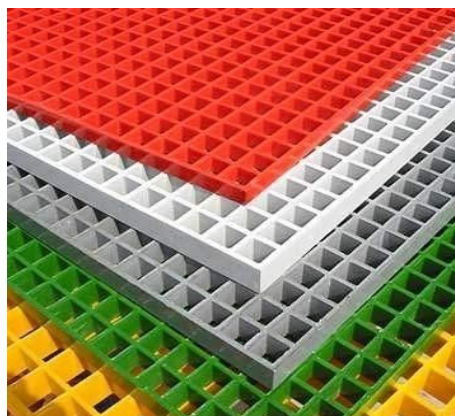
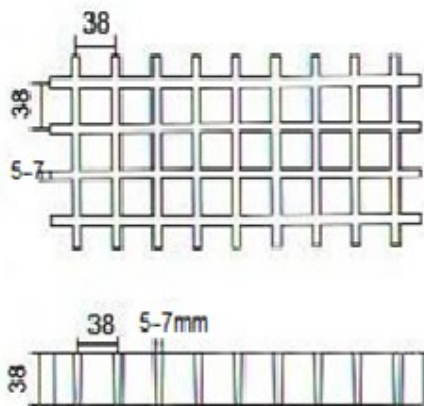
MOLD GRATING SELECTION

There are two types:

1-Mold Gratings without cover:

The Pannels will be cutted according to the customer's enquiry.

Type	Panel Size(mm ²)	Thickness(mm)	Mesh Size(mm)
MGR25	3660×1220	25	38×38
MGR30	3660×1220	30	38×38
MGR38	3660×1220	38	38×38
MGR50	3660×1220	50	50×50



2-Mold Gratings with cover:

The Pannels will be cutted according to the customer's enquiry.

Type	Panel Size(mm ²)	Thickness(mm)	Mesh Size(mm)
MGRC28	3660×1220	28	38×38
MGRC33	3660×1220	33	38×38
MGRC41	3660×1220	41	38×38
MGRC53	3660×1220	53	50×50



MOLD GRATING CHEMICAL RESISTANCE GUIDE

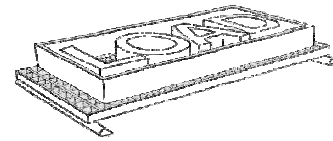
CHEMICAL	TYPE VINIL		TYPE ISO		TYPE ORTHO	
Environment	% Conc.	Max. Oper. Temp. F/C	% Conc.	Max. Oper. Temp. F/C	% Conc.	MAX. OPER. TEMP. F/C
Acetic Acid	50	180/82	50	125/52	25	N/R
Aluminum Hydroxide	100	180/82	100	160/71	ALL	-
Ammonium Chloride	ALL	210/99	ALL	170/77	ALL	-
Ammonium Bicarbonate	50	160/70	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
Ferric Chloride	ALL	210/99	ALL	170/77	ALL	104/40
Ferrous Chloride	ALL	210/99	ALL	170/77	ALL	86/30
Formaldehyde	ALL	150/65	50	75/24	25	-
Gasoline	100	180/82	100	80/27	100	77/25
Glucose	100	210/99	100	170/77	ALL	-
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
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

CHEMICAL	TYPE VINIL		TYPE ISO		TYPE ORTHO	
Environment	% Conc.	Max. Oper. Temp. F/C	% Conc.	Max. Oper. Temp. F/C	% Conc.	MAX. OPER. TEMP. F/C
Magnesium Nitrate	ALL	210/99	ALL	140/66	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
Mercurous Chloride	ALL	210/99	ALL	140/60	ALL	104/40
Nickel Chloride	ALL	210/99	ALL	170/77	ALL	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
Potassium Chloride	ALL	210/99	ALL	170/77	ALL	104/40
Potassium Dichromate	ALL	210/99	ALL	170/77	ALL	77/25
Potassium Nitrate	ALL	210/99	ALL	170/77	ALL	104/40
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

ALL...Concentrations; SAT...Saturated Solution; N/R...Not Recommended; -...No Information Available.

Mechanical and Physical Properties of Mold Grating

Property	Test Method	Units	Value
Tensile Strength	ASTM D-638	PSI	100,000
Tensile Modulus	ASTM D-638	PSI	5.6×10^6
Flexural Strength	ASTM D-790	PSI	100,000
Flexural Modulus	ASTM D-790	PSI	5.6×10^6
Compressive Strength	ASTM D-695	PSI	60,000
Izod Impact Notch	ASTM D-256	Ft.-Lbs./In.	40
Barcol Hardness	ASTM D-2583		50 (Min.)
Specific Gravity	ASTM D-792	gr/cm ³	2
Water Absorption	ASTM D-570	Max. %	0.3
Flame Retardant	ASTM D-635		Self-Extinguishing

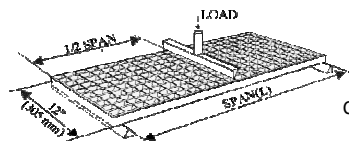


Uniform Load (Kg/m)

Uniform Load Deflection(mm)

Uniform Load & Deflection Tables

Span	Style	Uniform Load & Deflection															Max Rec. L&D
300	38×38×25	Load	481	1922	2883	3844	4806	7208	7689	8650	9611	10572	11533	12495	13456	14417	7593
		Deflection	0.25	0.75	1.25	1.50	2.00	3.00	3.25	3.50	4.00	4.50	4.75	5.25	5.75	6.00	3.25
	38×38×30	Load	481	1441	2162	2918	3647	5434	5814	6976	7813	8594	9453	10398	11333	12239	8763
		Deflection	0.25	0.50	0.75	0.87	1.08	1.62	1.75	2.10	2.35	2.58	2.83	3.10	3.41	3.68	2.50
	38×38×38	Load	481	961	1442	1992	2403	2883	3364	3844	4325	4806	7208	9611	14417	19222	9933
		Deflection	0.25	0.25	0.25	0.25	0.50	0.50	0.50	0.750	0.75	1.25	1.25	1.75	2.50	3.50	1.75
	50×50×50	Load	481	961	1442	1992	2403	3604	4806	7208	9611	14417	19222	24028	28834	30035	12014
		Deflection	0.25	0.25	0.25	0.25	0.25	0.50	0.50	0.75	1.00	1.50	2.00	2.50	3.00	3.00	1.25
450	38×38×25	Load	240	481	961	1201	1442	1922	2403	2883	3364	3844	4325	4806	6007	6247	3374
		Deflection	0.50	1.00	2.00	2.50	2.75	3.75	5.00	5.57	6.75	7.25	8.50	9.50	12.00	12.50	6.75
	38×38×30	Load	240	481	961	1311	1638	2293	1476	1771	1983	2181	2399	2638	2875	3105	3895
		Deflection	0.38	0.75	1.37	1.75	2.18	3.05	3.29	3.90	4.36	4.79	5.26	5.78	6.30	6.80	5.00
	38×38×38	Load	240	481	961	1422	1922	2403	2883	3364	3844	4325	4806	6007	7028	9611	4416
		Deflection	0.25	0.25	0.75	1.00	1.50	1.75	2.00	2.50	2.75	3.25	3.50	4.50	5.25	7.00	3.25
	50×50×50	Load	240	481	961	1442	1922	2403	3004	3604	4205	4806	7208	9611	12014	13215	5339
		Deflection	0.25	0.25	0.50	0.75	0.75	1.00	1.25	1.50	2.00	2.25	3.25	4.25	5.25	6.00	2.25
600	38×38×25	Load	120	240	360	481	961	1201	1442	1922	2403	2883	3604	3700			4898
		Deflection	0.75	1.50	2.25	3.00	6.25	7.75	9.25	12.25	15.50	18.50	23.25	23.75			12.25
	38×38×30	Load	300	600	891	1201	1501	2101	2269	2719	3045	3349	3683	4051	4415		21915.5
		Deflection	0.88	1.50	2.62	6.12	7.65	10.71	11.56	13.87	15.53	17.00	18.70	20.57	22.40		8.875
	38×38×38	Load	481	961	1422	1922	2403	2883	3364	4085	4806	6007	7208	8410	9611		2485
		Deflection	1.00	1.50	3.00	4.25	5.25	6.25	7.25	8.75	10.50	13.00	15.50	18.25	20.75		5.50
	50×50×50	Load	240	481	961	1442	1922	2403	2883	3364	3844	4325	4806	6007	6728	7208	3004
		Deflection	0.25	0.50	1.00	1.50	2.00	2.50	3.00	3.50	4.00	4.50	5.00	6.25	7.00	7.50	3.00
750	38×38×25	Load	120	240	360	481	721	961	1201	1442	1922	2163	2283				1216
		Deflection	1.75	3.50	5.25	6.75	10.25	13.75	17.00	20.50	27.50	30.75	32.50				17.25
	38×38×30	Load	300	600	891	1201	1501	2101	2269	2722	3048	3352	3687	4055			1403.5
		Deflection	2.00	4.00	6.00	8.00	10.16	14.20	15.30	18.36	20.56	22.60	24.86	27.30			12.375
	38×38×38	Load	481	961	1422	1922	2403	2883	3364	3844	4325	4806	5286	5767			1591
		Deflection	2.25	4.50	6.75	9.25	11.50	13.75	16.00	18.25	20.50	22.75	25.52	27.50			7.50
	50×50×50	Load	240	481	721	841	961	1442	1922	2403	2883	3364	3844	4325	4806		1922
		Deflection	0.50	1.25	1.75	2.00	2.25	3.50	4.50	5.75	6.75	8.00	9.00	10.25	11.25		4.50
900	38×38×25	Load	120	240	360	481	721	961	1201	1442	1562						846
		Deflection	3.75	7.75	11.50	15.50	23.25	31.00	38.50	46.25	50.25						27.00
	38×38×30	Load	180	300	420	601	751	1051	1135	1362	1525	1677	1844				975.5
		Deflection	3.13	3.63	8.25	11.50	14.37	20.10	21.70	26.00	29.12	32.00	32.20				19.25
	38×38×38	Load	240	360	481	721	961	1201	1442	1682	1922	2403	2883	3364			1105
		Deflection	2.50	3.75	5.00	7.50	10.00	12.50	14.75	17.25	19.75	24.75	29.75	34.75			11.50
	50×50×50	Load	240	360	481	721	961	1201	1442	1922	2403	2883	3364				1336
		Deflection	1.00	1.75	2.25	3.25	4.50	5.50	6.50	8.75	11.00	13.25	15.25				6.00
1000	38×38×25	Load	114	229	343	450	687	915	1144								590
		Deflection	5.95	1.67	17.62	23.33	35.24	46.90	58.57								30.24
	38×38×30	Load	158	175	295	383	497	695.8	730								681.5
		Deflection	12.15	14.58	15.99	20.78	27.00	33.60	36.20								22.025
	38×38×38	Load	229	252	275	297	320	343	458	527	687	801	915				773
		Deflection	4.05	4.52	5.00	5.24	5.71	6.19	8.10	10.24	12.38	14.29	16.43				13.81
	50×50×50	Load	229	343	458	915	1144	1373	1602	1831	2060	2288	2746				934
		Deflection	1.90	2.86	3.81	7.62	9.52	11.19	13.10	15.00	16.90	18.81	22.62				7.62



Concentrated Line Load & Deflection Tables

Concentrated Load (Kg/m)

Concentrated Load Deflection (mm)

Span	Style	Concentrated Line Load & Deflection															Max Rec. L&D
300	38×38×25	Load	146	293	439	586	732	1099	1117	1318	1465	1611	1758	1904	2051	2197	1157
		Deflection	0.25	0.75	1.00	1.25	1.50	2.50	2.50	3.00	3.25	3.50	3.75	4.25	4.50	4.75	2.50
	38×38×30	Load	146	293	439	586	732	988	1067	1280	1305	1435	1578	1735	1891	2040	1335
		Deflection	0.25	0.75	0.75	0.95	1.18	1.65	1.78	2.13	2.38	2.61	2.87	3.15	3.43	3.70	2.00
	38×38×38	Load	146	293	439	586	732	879	1025	1172	1318	1465	1831	2197	2563	2930	1513
		Deflection	0.25	0.25	0.50	0.50	0.75	0.75	1.00	1.00	1.25	1.25	1.75	2.00	2.50	2.75	1.50
450	38×38×25	Load	146	366	732	879	1025	1172	1318	1392	1465	2197	2930	3662	4394	4541	1831
		Deflection	0.25	0.25	0.50	0.50	0.50	0.75	0.75	0.75	0.75	1.25	1.50	2.00	2.50	2.50	1.00
	38×38×30	Load	73	146	220	293	366	439	586	732	879	1025	1172	1318	1392	1465	772
		Deflection	0.50	1.00	1.50	2.00	2.50	3.0	4.00	5.00	6.00	7.00	8.25	9.25	9.75	10.25	5.25
	38×38×38	Load	110	219	329	439	548	767	828	993	1112	1223	1345	1479	1612	1740	1037
		Deflection	0.50	0.88	1.37	1.75	2.00	2.80	3.02	3.60	4.00	4.40	4.84	5.32	5.79	6.25	3.875
600	38×38×25	Load	146	293	439	586	732	879	1025	1172	1318	1465	1831	2197	2563	2930	1302
		Deflection	0.50	0.75	1.25	1.50	2.00	2.25	2.75	3.00	3.50	3.75	4.75	5075	6.50	7.50	2.50
	38×38×30	Load	73	146	293	439	586	732	915	1099	1282	1465	1831	2197	2563	2930	1200
		Deflection	0.25	0.25	0.50	0.75	1.00	1.25	1.50	1.75	2.00	2.25	2.75	3.50	4.00	4.50	2.00
	38×38×38	Load	37	73	110	146	293	366	439	586	732	879	1099	1128			579
		Deflection	0.50	1.25	1.75	2.50	5.00	6.25	7.50	10.00	12.25	14.75	18.50	19.00			9.75
750	38×38×25	Load	91	183	274	292	370	518	559	670	750	825	907	997.7	1087		668
		Deflection	0.60	1.50	4.25	2.87	3.64	5.09	5.49	6.58	7.36	8.00	8.80	9.68	10.55		7.00
	38×38×30	Load	146	293	439	586	732	879	1025	1172	1318	1465	1831	2197	2563		757
		Deflection	0.75	1.75	2.50	3.25	4.25	5.00	5.75	6.75	7.50	8.25	10.50	12.50	14.50		4.25
	38×38×38	Load	73	146	293	439	586	732	879	1025	1172	1318	1465	1831	2051	2197	915
		Deflection	0.25	0.50	0.75	1.25	1.50	2.00	2.50	2.75	3.25	3.50	4.00	5.00	5.50	6.00	2.50
900	38×38×25	Load	37	72	110	146	220	293	366	439	586	732	879				463
		Deflection	1.00	2.25	3.25	4.50	6.50	8.75	11.00	13.25	17.50	22.00	26.25				13.75
	38×38×30	Load	55	109	201	292	365	511	551	661	740	814	895	984			534
		Deflection	0.88	1.88	3.15	4.50	5.62	7.86	8.40	10.10	11.30	12.40	13.64	15.00			9.875
	38×38×38	Load	73	146	293	439	586	732	879	1025	1172	1318	1465	2197			605
		Deflection	0.75	1.50	3.00	4.50	5.75	7.25	8.75	10.25	11.75	13.25	14.75	22.00			6.00
1000	38×38×25	Load	73	146	293	439	586	732	879	1025	1172	1318	1465	1611	1758		732
		Deflection	0.25	0.75	1.50	2.25	3.00	3.50	4.25	5.00	5.75	6.50	7.25	8.00	8.75		3.50
	38×38×30	Load	37	73	146	220	293	366	439	586	732						385
		Deflection	2.00	4.00	8.25	12.25	16.50	20.50	24.75	33.00	41.25						21.75
	38×38×38	Load	55	91	146	220	275	385	415	498	557	612	673				444.5
		Deflection	1.63	3.00	5.5	8.12	10.15	14.21	15.30	18.36	20.56	22.60	24.86				15.375
1000	38×38×25	Load	73	110	146	220	293	366	439	513	586	732	1099	1465			504
		Deflection	1.25	2.00	2.75	4.00	5.25	6.50	8.00	9.25	10.50	13.25	19.75	26.50			9.00
	38×38×30	Load	73	146	293	439	586	732	879	1025	1172	1318	1465				611
		Deflection	0.50	1.25	2.25	3.5	4.75	5.75	7.00	8.25	9.25	10.50	11.75				5.00
	38×38×38	Load	35	70	105	140	279	419	558								315
		Deflection	2.62	5.48	8.10	10.71	21.43	32.14	42.86								24.29
1000	38×38×25	Load	53	87.5	122	174	217	303	327	392.40	439						363.5
		Deflection	2.26	4.17	5.95	8.21	10.26	14.36	15.80	18.96	21.20						17.74
	38×38×30	Load	70	105	140	209	279	349	384	419	698	1046	1395				412
		Deflection	1.90	2.86	3.81	5.71	7.62	9.29	10.24	11.19	18.81	28.10	37.62				11.19
	38×38×38	Load	70	105	140	279	419	558	698	837	977	1116	1256				498
		Deflection	0.95	1.19	1.67	3.33	5.24	6.90	8.57	10.24	12.14	13.81	15.48				6.19

MOLDED GRATING FASTENERS

Type **"L"** Clip-For use in securing grating to support frames.



Type **"M"** Hold Down Clips-Designed to fix grating on support structure & prevent it from turning in all four directions.



Type **"C"** Clips-Applied to connect two adjacent grating bars.



STANDARDS OF FRP COMPOSITES

The Following Standards are used in composite productions:

ASTM C-177-85	Heat Flux
ASTM D-149-87	Dielectric Strength
ASTM D-229-86	Testing Rigid Sheet for Electrical Insulation (Ladder)
ASTM D-256-87	Impact Resistance
ASTM D-495-84	Electrical Resistance
ASTM D-570-81	Water Absorption
ASTM D-635-81	Flammability
ASTM D-638-87b	Tensile Strength
ASTM D-695-85	Compressive Strength
ASTM D-696-79	Thermal Expansion
ASTM D-709-87	Specifications for Laminated Thermosetting Materials
ASTM D-732-85	Shear Strength by Punch
ASTM D-790-86	Flexural Strength
ASTM D-792-86	Specific Gravity
ASTM D-953-87	Bearing Strength
ASTM D-1499-84	Weathering
ASTM D-1505-85	Density
ASTM D-2344-89	Interlaminar Short Beam Shear Strength
ASTM D-2583-87	Hardness
ASTM D-2584-85	Ignition Loss
ASTM D-3647-84	Classifying Pultruded Shapes
ASTM D-3846-85	In-plane Shear Strength
ASTM D-3914-84	In Plane Shear
ASTM D-3916-84	Tensile
ASTM D-3917-88	Dimensional Tolerances
ASTM D-3918-80	Pultrusion Terms
ASTM D-4385-88	Visual Defects
ASTM D-4475-85	Short Beam Shear Strength
ASTM D-4476-90	Flexural Properties
ASTM E-84-87	Tunnel Beam Test
ASTM E-662-83	Smoke Chamber
ASTM E-831-86	Linear Thermal Expansion (CTE)
ASTM F-1092-94	Handrails