



FIBERGLASS PRODUCTS COMPLETE BROCHURE



南通泽昊新材料有限公司
Nantong ZeAll New Materials Co., Ltd.

www.izeall.com



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ZeAll Brand Molded Grating Products



ZeAll FRPmaster™ molded grating panels manufactured by systematically setting layers of liquid resin and continuous fiberglass roving in a mold. The finished panels are released from the molds after they are cured for a predetermined time.

The one-piece interwoven mesh construction of molded grating results in a product with optimal corrosion resistance and bi-directional strength. The grating is “cast” in one piece and there are no mechanical joints between bearing bars.

The high percentage of resin (65%) in molded grating also adds to its superior corrosion and optimal impact resistance. The bi-directional trait of Square Mesh Molded gratings offers increased load capacity and panel utilization. These advantages make molded grating a better alternative to steel and aluminum grating products.



Penetrations for piping, valve access, and columns can be made without the need for additional structural framing. As molded grating panels are constructed as one piece, penetrations do not affect the structural integrity of the panel and the load is evenly distributed throughout the section and around cut-outs. This differs from pultruded grating products which may require additional supports around penetrations.

- **Optimum Corrosion Resistance:** High resin content in **FRPmaster™** Molded Grating ensures optimum corrosion resistance from a variety of harsh chemicals. **FRPmaster™** is also available in several resin combinations to ensure structural integrity and performance in highly corrosive environments.
- **Bidirectional Strength:** Provides structural stability in both axes and allows penetrations without additional supports.
- **High Impact Resistance:** **FRPmaster™** Molded Grating products can withstand major impacts with minimal structural damage.
- **UV Resistance:** Resin mix for **FRPmaster™** Molded Grating has built-in UV inhibitors to resist harmful rays. This means the product retains its color and texture even years after it is installed.
- **Anti-Skid:** **FRPmaster™** is manufactured with either a meniscus or grit surface. Both options provide a safe and slip-resistant walking surface.

- **Fire-Retardant:** FRPmaster™ Molded Grating products are manufactured with a flame spread rating of 25 or less as tested in accordance to ASTM E-84. These products also meet the self-extinguishing requirements of ASTM D-635.
- **Non-Conductive:** All FRPmaster™ Molded Grating products are thermally and electrically nonconductive, providing additional safety for employees.
- **Electronically Transparent:** FRP products do not interfere with electromagnetic and radio waves.
- **Minimal Maintenance:** FRP grating does not need maintenance like steel grating products.
- **Ease of Fabrication:** All FRPmaster™ Molded Grating products are light-weight. They can be lifted without heavy equipment and extra workers.



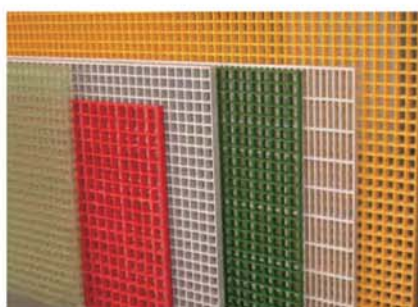
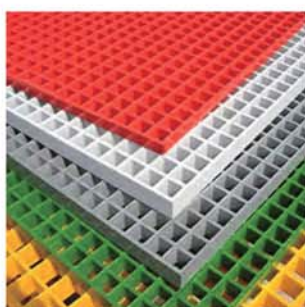
Molded Grating : Available Sizes, Resins, & Colors



FRPmaster™ Molded Grating Selection & Details

THICKNESS	MESH PATTERN	PANEL SIZE	WEIGHT / SQFT	OPEN AREA
½"	1 ½" x 1 ½"	4 Ft x 12 Ft	1.33 lbs	72%
½"	2" x 2"	4 Ft x 12 Ft	1.01 lbs	78%
1"	1 ½" x 1 ½"	3 Ft x 10 Ft, 4 Ft x 8 Ft, 4 Ft x 12 Ft	2.5 lbs	69 %
1"	1" x 4"	10 Ft x 3 Ft	2.61 lbs	68 %
1 ½"	1 ½" x 1 ½"	3 Ft x 10 Ft, 4 Ft x 8 Ft, 4 Ft x 12 Ft, 5 Ft x 10 Ft	3.8 lbs	69 %
1 ½"	¾" x ¾"	4 Ft x 12 Ft	4.75 lbs	44 %
2"	2" x 2"	3 Ft x 10 Ft, 4 Ft x 12 Ft	4.5 lbs	71 %
1 ½"	1 ½" x 6"	4 Ft x 12 Ft	4.4 lbs	55 %
1 ½"	1" x 2"	6 Ft x 4 Ft	6.1 lbs	48 %
2"	1" x 2"	6 Ft x 4 Ft	8.2 lbs	48 %

RESIN	STOCKED COLORS	SURFACE
General Purpose Polyester (CFR)	Yellow, Dark Gray, Green, Light Gray	Meniscus, Grit
Isophthalic Polyester (ISOFR)	Green	Meniscus, Grit
Vinyl Ester (VFR / VEFR)	Orange, Dark Gray	Meniscus, Grit



FRPmaster™ Molded Grating Resins

ZeAll manufactures molded grating products in the following resins:

VINYL ESTER (VFR / VEFR)

Vinyl ester offers outstanding resistance to a wide range of highly corrosive environments, from caustic to acidic. Especially in acidic environments where grating is subjected to frequent and/or direct contact with harsh chemicals, Vinyl Ester resin has no match. Standard stock colors are Orange and Dark Gray. Flame spread rating per ASTM E84 is 20 or less.

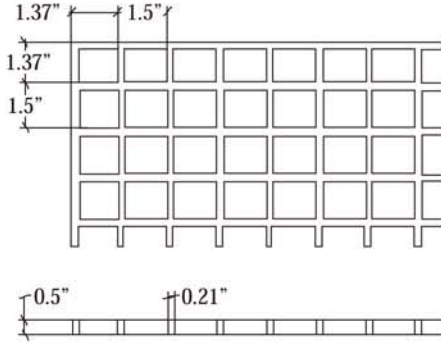
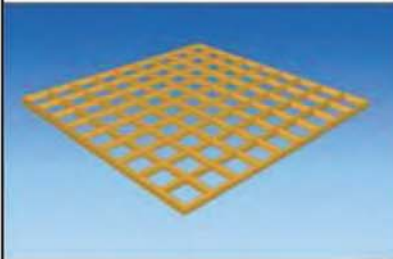
ISOPHTHALIC POLYESTER (ISOFR)

ISOFR resin is designed with flame spread rating per ASTM E84 of 25 or less. This mid-level resin provides corrosion resistance to grating where it is subjected to infrequent contact, splashes, and spills to harsh chemicals. It is available at a lower cost compared to VEFR resin. Standard stock colors are Green and Dark Gray.

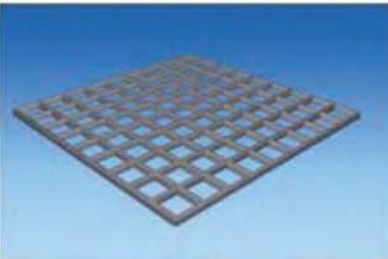
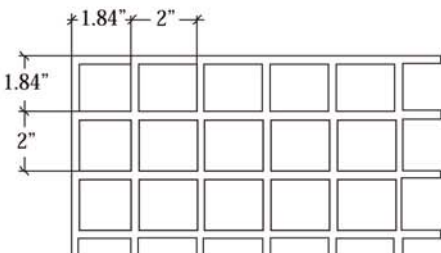
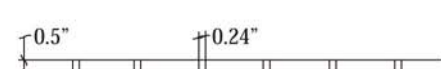
ORTHOPHTHALIC POLYESTER (CFR)

This general purpose resin is designed with flame spread rating per ASTM E84 of 25 or less. It is widely used in light to moderate corrosive environments such as light industrial, water, and wastewater applications. Standard stock colors are Dark Gray, Green, Yellow, and Transparent.

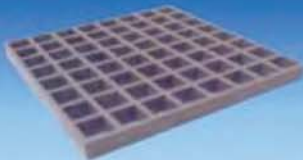
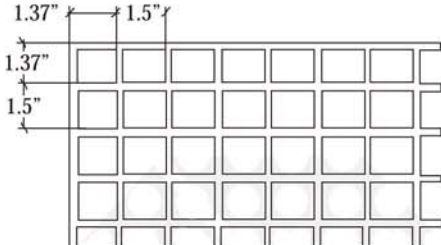
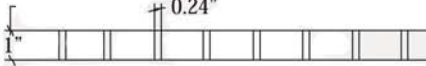
◆ 1/2" Deep x 1 1/2" Square Mesh

Engineering Properties Per Foot of Width:		A=0.84 in ²	I=0.02 in ⁴	S=0.07 in ³								
Grid Pattern												
												
Stocked Item												
Panel Sizes Available:												
4' x 12'												
		<table><tr><td># of Bars:</td><td>8</td></tr><tr><td>Load Bar Width:</td><td>7/32"</td></tr><tr><td>Load Bar Centers:</td><td>1-1/2"</td></tr><tr><td>Open Area:</td><td>72%</td></tr><tr><td>Approx. Weight:</td><td>1.33 lbs/ft²</td></tr></table>	# of Bars:	8	Load Bar Width:	7/32"	Load Bar Centers:	1-1/2"	Open Area:	72%	Approx. Weight:	1.33 lbs/ft ²
# of Bars:	8											
Load Bar Width:	7/32"											
Load Bar Centers:	1-1/2"											
Open Area:	72%											
Approx. Weight:	1.33 lbs/ft ²											

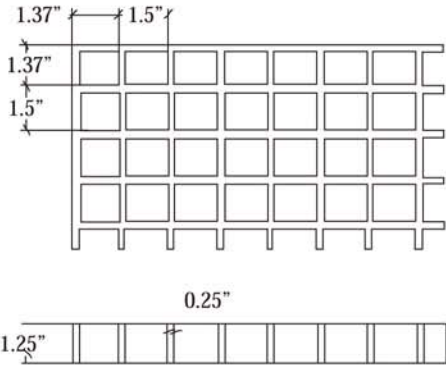
◆ 1/2" Deep x 2" Square Mesh

Engineering Properties Per Foot of Width:		A=0.68 in ²	I=0.02 in ⁴	S=0.08 in ³		
Grid Pattern					# of Bars:	6
Stocked Item					Load Bar Width:	1/4"
Panel Sizes Available:					Load Bar Centers:	2"
4' x 12'					Open Area:	78%
					Approx.	1.01
					Weight:	lbs/ft ²

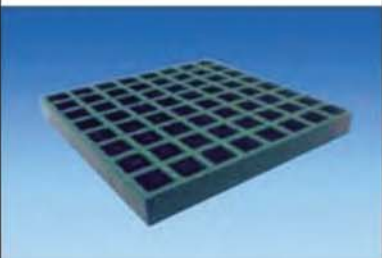
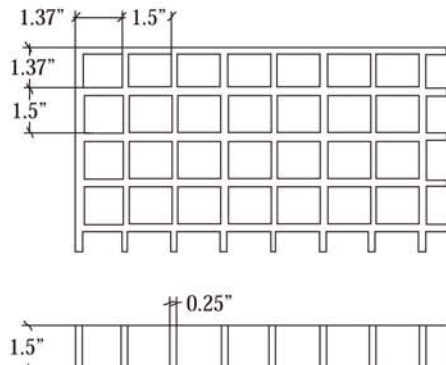
◆ 1" Deep x 1 1/2" Square Mesh

Engineering Properties Per Foot of Width:		A=1.75 in ²	I=0.15 in ⁴	S=0.29 in ³		
Grid Pattern					# of Bars:	8
					Load Bar Width:	1/4"
					Load Bar Centers:	1-1/2"
					Open Area:	69%
					Approx. Weight:	2.50 lbs/ft ²
Stocked Item						
Panel Sizes Available:						
3' x 10', 4' x 8', 4' x 12'						

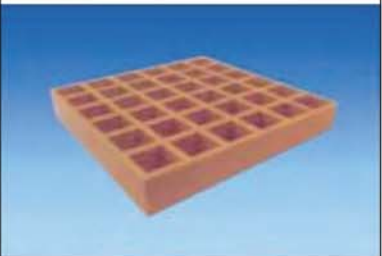
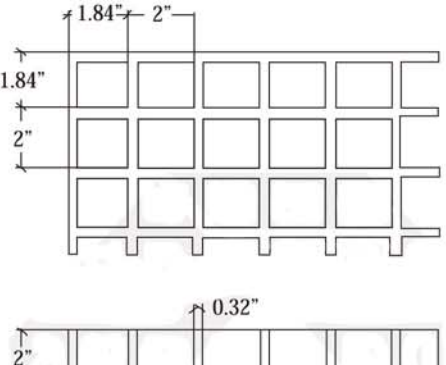
◆ 1 1/4" Deep x 1 1/2" Square Mesh

Engineering Properties Per Foot of Width: $A=2.13 \text{ in}^2$ $I=0.28 \text{ in}^4$ $S=0.45 \text{ in}^3$											
Grid Pattern											
											
Non-Stocked Item (Custom Order)											
Panel Sizes Available:											
Please Call											
	<table border="1"> <tr> <td># of Bars:</td><td>8</td></tr> <tr> <td>Load Bar Width:</td><td>1/4"</td></tr> <tr> <td>Load Bar Centers:</td><td>1-1/2"</td></tr> <tr> <td>Open Area:</td><td>69%</td></tr> <tr> <td>Approx. Weight:</td><td>3.08 lbs/ft²</td></tr> </table>	# of Bars:	8	Load Bar Width:	1/4"	Load Bar Centers:	1-1/2"	Open Area:	69%	Approx. Weight:	3.08 lbs/ft ²
# of Bars:	8										
Load Bar Width:	1/4"										
Load Bar Centers:	1-1/2"										
Open Area:	69%										
Approx. Weight:	3.08 lbs/ft ²										

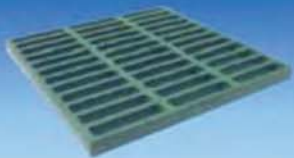
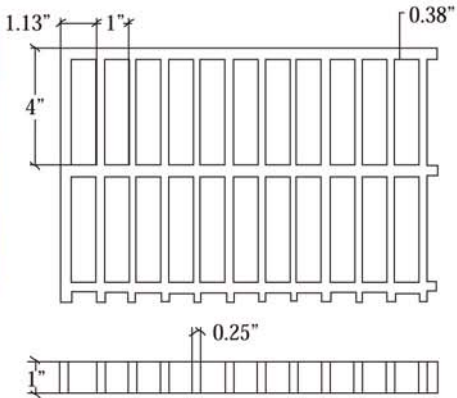
◆ 1 1/2" Deep x 1 1/2" Square Mesh

Engineering Properties Per Foot of Width: $A=2.73 \text{ in}^2$ $I=0.49 \text{ in}^4$ $S=0.65 \text{ in}^3$											
Grid Pattern											
											
Stocked Item											
Panel Sizes Available:											
3' x 10', 5' x 10', 4' x 8', 4' x 12'											
	<table border="1"> <tr> <td># of Bars:</td><td>8</td></tr> <tr> <td>Load Bar Width:</td><td>1/4"</td></tr> <tr> <td>Load Bar Centers:</td><td>1-1/2"</td></tr> <tr> <td>Open Area:</td><td>69%</td></tr> <tr> <td>Approx. Weight:</td><td>3.08 lbs/ft²</td></tr> </table>	# of Bars:	8	Load Bar Width:	1/4"	Load Bar Centers:	1-1/2"	Open Area:	69%	Approx. Weight:	3.08 lbs/ft ²
# of Bars:	8										
Load Bar Width:	1/4"										
Load Bar Centers:	1-1/2"										
Open Area:	69%										
Approx. Weight:	3.08 lbs/ft ²										

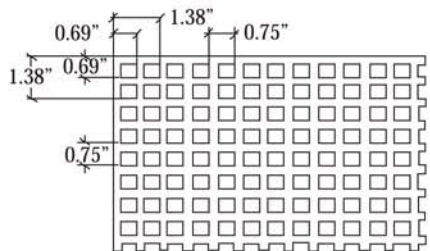
◆ 2" Deep x 2" Square Mesh

Engineering Properties Per Foot of Width: $A=3.12 \text{ in}^2$ $I=0.03 \text{ in}^4$ $S=1.03 \text{ in}^3$											
Grid Pattern											
											
Stocked Item											
Panel Sizes Available:											
4' x 12'											
	<table border="1"> <tr> <td># of Bars:</td><td>8</td></tr> <tr> <td>Load Bar Width:</td><td>5/16"</td></tr> <tr> <td>Load Bar Centers:</td><td>2"</td></tr> <tr> <td>Open Area:</td><td>71%</td></tr> <tr> <td>Approx. Weight:</td><td>4.51 lbs/ft²</td></tr> </table>	# of Bars:	8	Load Bar Width:	5/16"	Load Bar Centers:	2"	Open Area:	71%	Approx. Weight:	4.51 lbs/ft ²
# of Bars:	8										
Load Bar Width:	5/16"										
Load Bar Centers:	2"										
Open Area:	71%										
Approx. Weight:	4.51 lbs/ft ²										

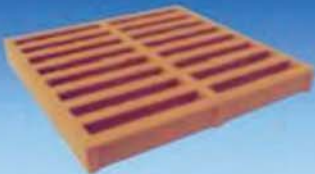
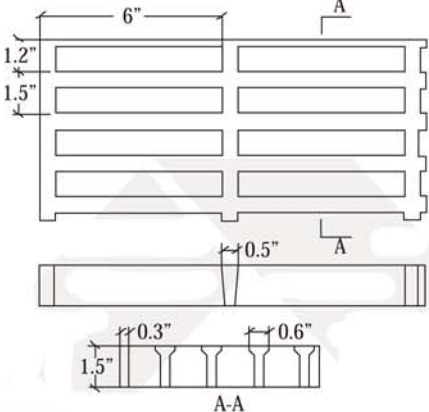
◆ 1" Deep x 1 x 4" Rectangular Mesh

Engineering Properties Per Foot of Width:			$A=2.69\text{ in}^2$	$I=0.22\text{ in}^4$	$S=0.45\text{ in}^3$										
Grid Pattern			<table><tr><td># of Bars:</td><td>12</td></tr><tr><td>Load Bar Width:</td><td>1/4"</td></tr><tr><td>Load Bar Centers:</td><td>1"</td></tr><tr><td>Open Area:</td><td>68%</td></tr><tr><td>Approx. Weight:</td><td>2.61 lbs/ft²</td></tr></table>			# of Bars:	12	Load Bar Width:	1/4"	Load Bar Centers:	1"	Open Area:	68%	Approx. Weight:	2.61 lbs/ft ²
# of Bars:						12									
Load Bar Width:						1/4"									
Load Bar Centers:						1"									
Open Area:						68%									
Approx. Weight:	2.61 lbs/ft ²														
Non-Stocked Item (Custom Order)															
Panel Sizes Available: 10'x 3'															
** Load Bars Run 3' Direction															

◆ 1 1/2" Deep x 3/4" Mini Mesh

Engineering Properties Per Foot of Width:			$A=3.29\text{ in}^2$	$I=0.74\text{ in}^4$	$S=0.9\text{ in}^3$											
Grid Pattern						<table><tr><td># of Bars:</td><td>8</td></tr><tr><td>Load Bar Width:</td><td>1/4"</td></tr><tr><td>Load Bar Centers:</td><td>3/4"</td></tr><tr><td>Open Area:</td><td>44%</td></tr><tr><td>Approx. Weight:</td><td>4.75 lbs/ft²</td></tr></table>	# of Bars:	8	Load Bar Width:	1/4"	Load Bar Centers:	3/4"	Open Area:	44%	Approx. Weight:	4.75 lbs/ft ²
# of Bars:	8															
Load Bar Width:	1/4"															
Load Bar Centers:	3/4"															
Open Area:	44%															
Approx. Weight:	4.75 lbs/ft ²															
Stocked Item																
Panel Sizes Available:																
4' x 12'																

◆ 1 1/2" Deep x 1 1/2" x 6" Rectangular Mesh

Engineering Properties Per Foot of Width:		A=4.39 in ²	I=0.88 in ⁴	S=1.3 in ³	S _B =1.24 in ³
Grid Pattern					
Non-Stocked Item (Custom Order)					
Panel Sizes Available:					
Please Call					
		# of Bars:	8		
		Load Bar Width:	0.6"		
		Load Bar Centers:	1-1/2"		
		Open Area:	55%		
		Approx. Weight:	4.42		
		Weight:	lbs/ft ²		

Molded Grating Deflection Tables



Uniform Load Deflection Table:

SPAN in inches	STYLE	LOAD IN lbs/ft ²								Max Rec. Load	Apparent EI x 10 ⁶ (LB-IN ²)
		50	100	150	200	250	500	1000	2000		
12	SM 1/2" x 1 1/2"	0.03	0.05	0.08	0.10	0.13	0.26	0.52		361	0.04
	SM 1/2" x 2"	0.03	0.06	0.09	0.13	0.16	0.32	0.63		302	0.04
	SM 1" x 1 1/2"	<0.01	<0.01	0.01	0.01	0.02	0.04	0.07	0.14	2,378	0.31
	SM 1 1/4" x 1 1/2"	<0.01	<0.01	<0.01	0.01	0.01	0.01	0.05	0.10	2,832	0.43
	SM 1 1/2" x 1 1/2"	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.03	0.06	4,082	0.80
	SM 2" x 2"	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.03	9,264	1.80
	RM 1" x 1" x 4"	<0.01	<0.01	<0.01	<0.01	0.01	0.02	0.05	0.10	3,668	0.45
	MM 1 1/2" x 3/4"	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	0.04	6,180	1.14
	SS 1 1/2" x 1 1/2" x 6"	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	0.03	7,202	1.40
18	SM 1/2" x 1 1/2"	0.12	0.24	0.36	0.48					160	0.05
	SM 1/2" x 2"	0.14	0.28	0.42	0.57					134	0.04
	SM 1" x 1 1/2"	0.02	0.03	0.05	0.07	0.08	0.17	0.33	0.66	1,245	0.34
	SM 1 1/4" x 1 1/2"	0.01	0.02	0.03	0.04	0.05	0.11	0.21	0.43	1,259	0.53
	SM 1 1/2" x 1 1/2"	<0.01	0.01	0.02	0.02	0.03	0.05	0.10	0.21	1,813	1.11
	SM 2" x 2"	<0.01	<0.01	<0.01	0.01	0.01	0.03	0.05	0.11	4,117	2.13
	RM 1" x 1" x 4"	0.01	0.02	0.03	0.05	0.06	0.11	0.23	0.46	1,892	0.50
	MM 1 1/2" x 3/4"	<0.01	<0.01	0.01	0.02	0.02	0.04	0.08	0.16	2,747	1.43
	SS 1 1/2" x 1 1/2" x 6"	<0.01	<0.01	<0.01	0.01	0.02	0.03	0.07	0.13	3,201	1.75
24	SM 1/2" x 1 1/2"	0.36								90	0.05
	SM 1/2" x 2"	0.41								75	0.04
	SM 1" x 1 1/2"	0.05	0.10	0.15	0.20	0.25	0.50			668	0.36
	SM 1 1/4" x 1 1/2"	0.03	0.06	0.09	0.12	0.15	0.31	0.61		708	0.59
	SM 1 1/2" x 1 1/2"	0.01	0.03	0.04	0.06	0.07	0.14	0.29	0.58	1,021	1.25
	SM 2" x 2"	<0.01	0.02	0.02	0.03	0.04	0.08	0.15	0.30	2,316	2.40
	RM 1" x 1" x 4"	0.03	0.07	0.10	0.14	0.17	0.35	0.69		961	0.52
	MM 1 1/2" x 3/4"	0.01	0.02	0.03	0.04	0.05	0.11	0.22	0.44	1,545	1.64
	SS 1 1/2" x 1 1/2" x 6"	<0.01	0.02	0.03	0.04	0.05	0.09	0.18	0.36	1,800	2.00
30	SM 1" x 1 1/2"	0.12	0.24	0.36	0.47	0.59				427	0.37
	SM 1 1/4" x 1 1/2"	0.07	0.15	0.22	0.29	0.37				453	0.60
	SM 1 1/2" x 1 1/2"	0.03	0.07	0.10	0.13	0.17	0.33	0.67		653	1.31
	SM 2" x 2"	0.02	0.04	0.05	0.07	0.09	0.18	0.35		1,482	2.50
	RM 1" x 1" x 4"	0.08	0.08	0.25	0.33	0.42				615	0.53
	MM 1 1/2" x 3/4"	0.03	0.05	0.08	0.10	0.13	0.25	0.50		989	1.75
	SS 1 1/2" x 1 1/2" x 6"	0.02	0.04	0.06	0.08	0.10	0.20	0.39		1,152	2.24

Notes: SM- Square Mesh Grating, RM- Rectangular Mesh Grating, MM- Mini-Mesh Grating, SS- SuperSpan Grating compliant grating

Molded Grating Deflection Tables

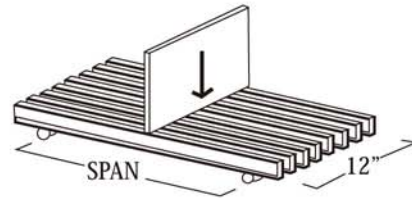


Uniform Load Deflection Table:

SPAN in inches	STYLE	LOAD IN lbs/ft ²								Max Rec. Load	Apparent EI x 10 ⁶ (LB-IN ²)
		50	100	150	200	250	500	1000	2000		
36	SM 1" x 1 1/2"	0.24	0.48							240	0.38
	SM 1 1/4" x 1 1/2"	0.15	0.30	0.45	0.60					315	0.61
	SM 1 1/2" x 1 1/2"	0.07	0.13	0.20	0.27	0.34	0.67			453	1.35
	SM 2" x 2"	0.04	0.07	0.11	0.14	0.18	0.36			1,029	2.35
	RM 1" x 1" x 4"	0.17	0.34	0.51	0.68					427	0.54
	MM 1 1/2" x 3/4"	0.05	0.10	0.15	0.20	0.25	0.50			687	1.83
	SS 1 1/2" x 1 1/2" x 6"	0.04	0.08	0.12	0.16	0.19	0.39			800	2.34
42	SM 1" x 1 1/2"	0.43								205	0.39
	SM 1 1/4" x 1 1/2"	0.27	0.54							231	0.62
	SM 1 1/2" x 1 1/2"	0.12	0.25	0.37	0.49	0.62				333	1.37
	SM 2" x 2"	0.06	0.13	0.19	0.26	0.32	0.65			756	2.61
	RM 1" x 1" x 4"	0.30	0.60							314	0.56
	MM 1 1/2" x 3/4"	0.09	0.18	0.27	0.36	0.45				505	1.87
	SS 1 1/2" x 1 1/2" x 6"	0.07	0.14	0.21	0.28	0.35				588	2.38
46	RM 1" x 1" x 4"	0.43								287	0.57
48	SM 1 1/2" x 1 1/2"	0.21	0.42	0.63						255	1.38
	SM 2" x 2"	0.11	0.22	0.33	0.43	0.54				579	2.65
	MM 1 1/2" x 3/4"	0.15	0.30	0.45	0.60					386	1.90
	SS 1 1/2" x 1 1/2" x 6"	0.12	0.24	0.36	0.48	0.60				450	2.42
54	SM 1 1/2" x 1 1/2"	0.33	0.67							201	1.38
	SM 2" x 2"	0.17	0.34	0.51	0.69					457	2.69
	MM 1 1/2" x 3/4"	0.24	0.48							305	1.93
	SS 1 1/2" x 1 1/2" x 6"	0.19	0.38	0.57						356	2.44
60	SM 2" x 2"	0.26	0.52							371	2.71
	MM 1 1/2" x 3/4"	0.36								247	1.94
	SS 1 1/2" x 1 1/2" x 6"	0.29	0.57							288	2.46

Notes: SM-Square Mesh Grating, RM- Rectangular Mesh Grating, MM- Mini-Mesh Grating, SS- SuperSpan Grating compliant grating

Molded Grating Deflection Tables

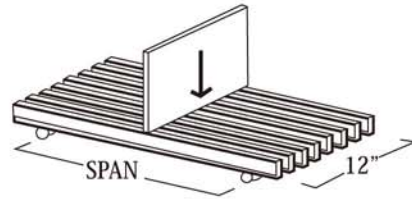


Concentrated Line Load Deflection Table:

SPAN in inches	STYLE	LOAD IN lbs/ft OF WIDTH								Max Rec. Load	Apparent EI x 10 ⁶ (LB-IN ²)
		50	100	150	200	250	500	1000	2000		
12	SM 1/2" x 1 1/2"	0.04	0.08	0.12	0.17	0.21	0.41			282	0.04
	SM 1/2" x 2"	0.05	0.10	0.15	0.20	0.25	0.50			236	0.04
	SM 1" x 1 1/2"	<0.01	0.01	0.02	0.02	0.03	0.06	0.11	0.23	1,189	0.31
	SM 1 1/4" x 1 1/2"	<0.01	<0.01	0.01	0.02	0.02	0.04	0.08	0.17	1,416	0.43
	SM 1 1/2" x 1 1/2"	<0.01	<0.01	<0.01	<0.01	0.01	0.02	0.05	0.09	2,041	0.80
	SM 2" x 2"	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.02	0.04	4,632	1.80
	SM 1" x 1" x 4"	<0.01	<0.01	0.01	0.02	0.02	0.04	0.08	0.16	1,834	0.45
	MM 1 1/2" x 3/4"	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	0.03	0.06	3,090	1.45
	SS 1 1/2" x 1 1/2" x 6"	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.03	0.05	3,601	1.43
18	SM 1/2" x 1 1/2"	0.13	0.26	0.38	0.51	0.64				188	0.05
	SM 1/2" x 2"	1.15	1.30	0.45	0.60					158	0.04
	SM 1" x 1 1/2"	0.02	0.04	0.05	0.07	0.09	0.18	0.35		934	0.34
	SM 1 1/4" x 1 1/2"	0.01	0.02	0.03	0.05	0.06	0.11	0.23	0.46	944	0.53
	SM 1 1/2" x 1 1/2"	<0.01	0.01	0.02	0.02	0.03	0.05	0.11	0.22	1,360	1.11
	SM 2" x 2"	<0.01	<0.01	<0.01	0.01	0.01	0.03	0.06	0.11	3,088	2.13
	RM 1" x 1" x 4"	0.01	0.02	0.04	0.05	0.06	0.12	0.24	0.49	1,419	0.50
	MM 1 1/2" x 3/4"	<0.01	<0.01	0.01	0.02	0.02	0.04	0.09	0.17	2,060	1.43
	SS 1 1/2" x 1 1/2" x 6"	<0.01	<0.01	<0.01	0.01	0.02	0.03	0.07	0.14	2,401	1.75
24	SM 1/2" x 1 1/2"	0.29	0.57							141	0.05
	SM 1/2" x 2"	0.33	0.66							118	0.04
	SM 1" x 1 1/2"	0.04	0.08	0.12	0.16	0.02	0.40			668	0.36
	SM 1 1/4" x 1 1/2"	0.02	0.05	0.07	0.10	0.12	0.24	0.49		708	0.59
	SM 1 1/2" x 1 1/2" 	0.01	0.02	0.03	0.05	0.06	0.12	0.23	0.46	1,021	1.25
	SM 2" x 2"	<0.01	0.01	0.02	0.02	0.03	0.06	0.11	0.24	2,316	2.40
	RM 1" x 1" x 4"	0.03	0.06	0.08	0.11	0.17	0.28	0.56		961	0.52
	MM 1 1/2" x 3/4"	0.01	0.02	0.03	0.04	0.04	0.09	0.18	0.35	1,545	1.64
	SS 1 1/2" x 1 1/2" x 6"	<0.01	0.01	0.02	0.03	0.04	0.07	0.14	0.29	1,800	2.00
30	SM 1" x 1 1/2"	0.08	0.15	0.30	0.36	0.38				534	0.37
	SM 1 1/4" x 1 1/2"	0.05	0.09	0.14	0.19	0.23	0.47			566	0.60
	SM 1 1/2" x 1 1/2"	0.02	0.04	0.06	0.09	0.11	0.20	0.43		816	1.31
	SM 2" x 2"	0.01	0.02	0.03	0.05	0.06	0.11	0.23	0.45	1,853	2.50
	RM 1" x 1" x 4"	0.05	0.11	0.16	0.21	0.27	0.53			769	0.53
	MM 1 1/2" x 3/4"	0.02	0.03	0.05	0.06	0.08	0.16	0.32	0.64	1,236	1.75
	1 1/2" x 1 1/2" x 6"	0.01	0.03	0.04	0.05	0.06	0.13	0.25	0.50	1,440	2.24

Notes: SM- Square Mesh Grating, RM- Rectangular Mesh Grating, MM- Mini-Mesh Grating, SS- SuperSpan Grating compliant grating

Molded Grating Deflection Tables

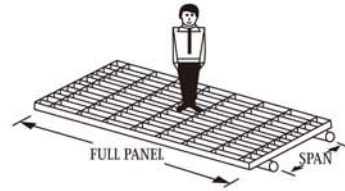


Concentrated Line Load Deflection Table:

SPAN in inches	STYLE	LOAD IN lbs/ft OF WIDTH								Max Rec. Load	Apparent El x 10 ⁶ (LB-IN ²)
		50	100	150	200	250	500	1000	2000		
36	SM 1" x 1 1/2"	0.13	0.26	0.38	0.51	0.64				360	0.38
	SM 1 1/4" x 1 1/2"	0.08	0.16	0.24	0.32	0.40				472	0.61
	SM 1 1/2" x 1 1/2"	0.04	0.07	0.11	0.14	0.18	0.36			680	1.35
	SM 2"x2"	0.02	0.04	0.06	0.08	0.10	0.19	0.38		1,544	2.55
	RM 1"x1"x4"	0.09	0.18	0.27	0.36	0.45				641	0.54
	MM 1 1/2" x 3/4"	0.03	0.05	0.08	0.11	0.13	0.27	0.53		1,030	1.83
	SS 1 1/2" x 1 1/2" x 6"	0.02	0.04	0.06	0.08	0.10	0.21	0.42		1,200	2.34
42	SM 1" x 1 1/2"	0.12	0.25	0.37	0.50	0.62				404	0.62
	SM 1 1/2" x 1 1/2"	0.06	0.11	0.17	0.23	0.28	0.56			583	1.37
	SM 2"x2"	0.03	0.06	0.09	0.12	0.15	0.30	0.59		1,323	2.61
	RM 1"x1"x4"	0.14	0.28	0.41	0.55	0.69				549	0.56
	MM 1 1/2" x 3/4"	0.04	0.08	0.12	0.17	0.21	0.41			883	1.87
	SS 1 1/2" x 1 1/2" x 6"	0.03	0.06	0.10	0.13	0.16	0.32	0.65		1,029	2.38
48	SM 1 1/2" x 1 1/2"	0.08	0.17	0.25	0.33	0.42				510	1.38
	SM 2"x2"	0.04	0.09	0.13	0.17	0.22	0.43			1,158	2.65
	MM 1 1/2" x 3/4"	0.06	0.12	0.18	0.24	0.30	0.60			773	1.90
	SS 1 1/2" x 1 1/2" x 6"	0.05	0.10	0.14	0.19	0.24	0.48			900	2.42
54	SM 1 1/2" x 1 1/2"	0.12	0.24	0.36	0.48	0.59				453	1.38
	SM 2"x2"	0.06	0.12	0.18	0.24	0.30	0.61			1,029	2.69
	MM 1 1/2" x 3/4"	0.08	0.17	0.25	0.34	0.42				687	1.93
	SS 1 1/2" x 1 1/2" x 6"	0.07	0.13	0.20	0.27	0.34	0.67			800	2.44
60	SM 2"x2"	0.08	0.17	0.25	0.33	0.42				926	2.71
	MM 1 1/2" x 3/4"	0.12	0.23	0.35	0.46	0.58				618	1.94
	SS 1 1/2" x 1 1/2" x 6"	0.09	0.18	0.27	0.37	0.46				720	2.46

Notes: SM-Square Mesh Grating, RM- Rectangular Mesh Grating, MM- Mini-Mesh Grating, SS- SuperSpan Grating compliant grating

Molded Grating Deflection Tables

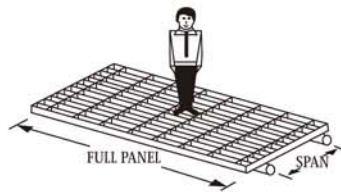


Point Load Deflection Table:

SPAN in inches	STYLE	LOAD IN LBS.						
		100	200	500	750	1000	1500	2000
18	SM 1/2" x 1 1/2"	0.06	0.12	0.29	0.44	0.59		
	SM 1/2" x 2"	0.08	0.15	0.38	0.57			
	SM 1" x 1 1/2"	<0.01	0.02	0.04	0.06	0.08	0.12	0.16
	SM 1 1/4" x 1 1/2"	<0.01	0.01	0.03	0.05	0.06	0.09	0.12
	SM 1 1/2" x 1 1/2"	<0.01	<0.01	0.01	0.02	0.03	0.04	0.06
	SM 2" x 2"	<0.01	<0.01	0.01	0.02	0.03	0.05	0.06
	RM 1"x1"x4"	<0.01	0.01	0.04	0.05	0.07	0.11	0.15
	MM 1 1/2" x 3/4"	<0.01	<0.01	0.02	0.02	0.03	0.05	0.06
24	SS 1 1/2" x 1" 1/2" x 6"	<0.01	<0.01	0.01	0.02	0.02	0.04	0.05
	SM 1/2" x 1 1/2"	0.17	0.34					
	SM 1/2" x 2"	0.23	0.45					
	SM 1" x 1 1/2"	0.02	0.05	0.12	0.18	0.24	0.36	0.49
	SM 1 1/4" x 1 1/2"	0.01	0.03	0.07	0.10	0.14	0.20	0.27
	SM 1 1/2" x 1 1/2"	<0.01	0.02	0.04	0.06	0.08	0.12	0.15
	SM 2" x 2"	<0.01	0.01	0.03	0.04	0.05	0.08	0.10
	RM 1"x1"x4"	0.02	0.04	0.09	0.14	0.19	0.28	0.37
30	MM 1 1/2" x 3/4"	<0.01	0.01	0.04	0.05	0.07	0.11	0.14
	SS 1 1/2" x 1 1/2" x 6"	<0.01	0.01	0.03	0.04	0.05	0.08	0.10
	SM 1/2" x 1 1/2"	0.34	0.67					
	SM 1/2" x 2"	0.42						
	SM 1" x 1 1/2"	0.05	0.09	0.24	0.35	0.47		
	SM 1 1/4" x 1 1/2"	0.03	0.05	0.14	0.20	0.27	0.41	0.54
	SM 1 1/2" x 1 1/2"	0.01	0.03	0.07	0.10	0.13	0.20	0.26
	SM 2" x 2"	<0.01	0.02	0.04	0.06	0.09	0.13	0.17
36	RM 1"x1"x4"	0.04	0.07	0.18	0.27	0.37	0.55	
	MM 1 1/2" x 3/4"	0.01	0.02	0.06	0.09	0.12	0.18	0.24
	SS 1 1/2" x 1 1/2" x 6"	<0.01	0.02	0.04	0.06	0.09	0.13	0.17
	SM 1/2" x 1 1/2"	0.54						
	SM 1 1/2" x 1 1/2"	0.67						
	SM 1" x 1 1/2"	0.07	0.13	0.33	0.49	0.66		
	SM 1 1/4" x 1 1/2"	0.04	0.09	0.22	0.33	0.44	0.66	
	SM 1 1/2" x 1 1/2"	0.02	0.04	0.10	0.15	0.21	0.31	0.41
	SM 2" x 2"	0.01	0.02	0.06	0.09	0.12	0.18	0.24
	RM 1"x1"x4"	0.06	0.11	0.29	0.43	0.57		
	MM 1 1/2" x 3/4"	0.02	0.03	0.09	0.13	0.17	0.26	0.34
	SS 1 1/2" x 1 1/2" x 6"	0.01	0.03	0.07	0.11	0.15	0.22	0.29

Notes: SM- Square Mesh Grating, RM- Rectangular Mesh Grating, MM- Mini-Mesh Grating, SS- SuperSpan Grating compliant grating

Molded Grating Deflection Tables



Point Load Deflection Table:

SPAN in inches	STYLE	LOAD IN LBS.						
		100	200	500	750	1000	1500	2000
42	SM 1" x 1 1/2"	0.12	0.24	0.61				
	SM 1 1/4" x 1 1/2"	0.07	0.14	0.34	0.51	0.68		
	SM 1 1/2" x 1 1/2"	0.03	0.06	0.15	0.23	0.31	0.46	0.61
	SM 2" x 2"	0.02	0.03	0.09	0.13	0.17	0.36	0.35
	RM 1"x1"x4"	0.09	0.17	0.43	0.65			
	MM 1 1/2" x 3/4"	0.03	0.05	0.13	0.20	0.27	0.40	0.53
	SS 1 1/2" x 1 1/2" x 6"	0.02	0.04	0.11	0.16	0.21	0.32	0.42
46	SM 1" x 1 1/2"	0.14	0.29					
	SM 1 1/4" x 1 1/2"	0.08	0.17	0.42	0.64			
	SM 1 1/2" x 1 1/2"	0.04	0.08	0.20	0.29	0.39	0.59	
	SM 2" x 2"	0.02	0.04	0.10	0.15	0.20	0.30	0.40
	MM 1 1/2" x 3/4"	0.03	0.07	0.17	0.25	0.33	0.50	0.66
48	SS 1 1/2" x 1 1/2" x 6"	0.03	0.06	0.14	0.21	0.28	0.43	0.57
	MM 1 1/2" x 3/4"	0.03	0.05	0.13	0.20	0.27	0.40	0.53

Notes: SM- Square Mesh Grating, RM- Rectangular Mesh Grating, MM- Mini-Mesh Grating, SS- SuperSpan Grating compliant grating

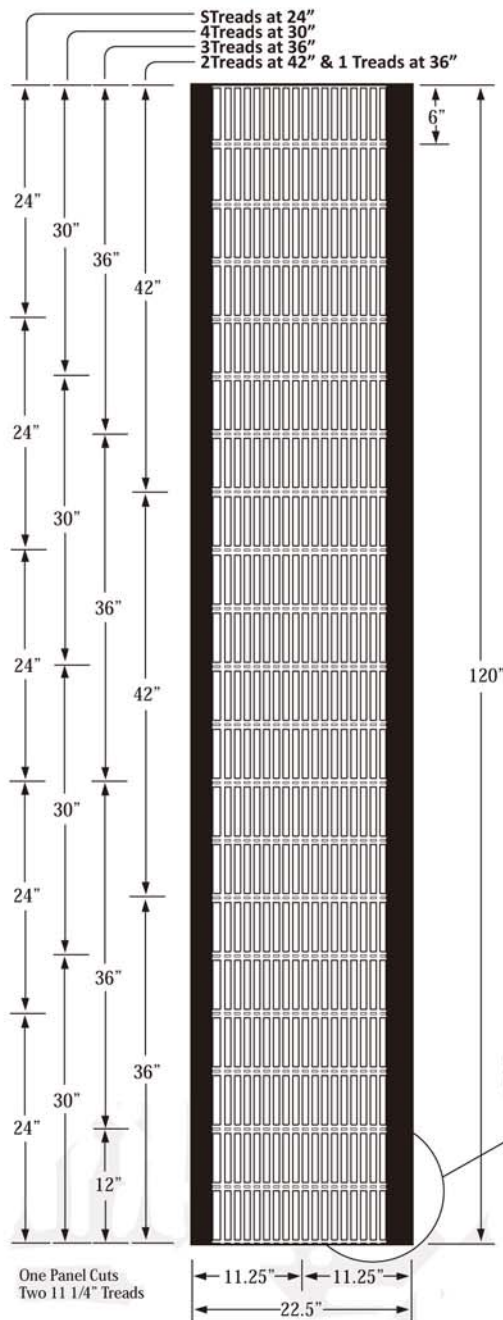




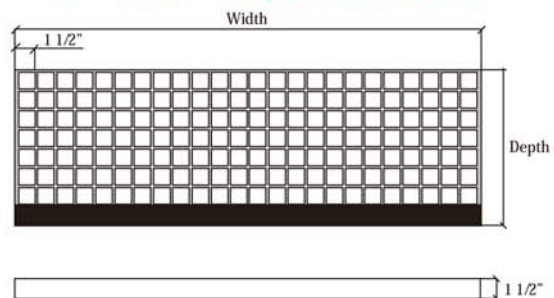
STAIR TREADS

Slip-resistant and nonconductive stair treads.
Stocked in two standard stair tread gratings: 1 1/2" Square Mesh in a 12" x 144" panel, or 1" x 6" Rectangular Mesh in a 22 1/2 x 10" panel. Stair treads offer the same level of safety, strength, and corrosion resistance as its other molded products. Custom fabricated sizes also available upon request.

Standard 1"x 6" Rectangular Mesh Panel

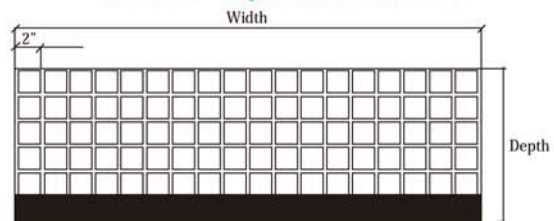


1 1/2" x 1 1/2" Square Mesh ST

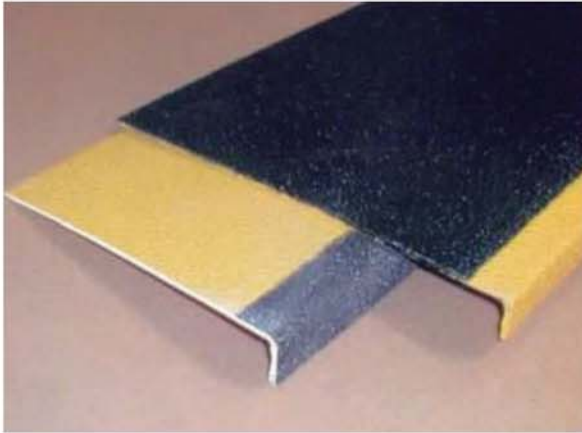


Note: Depth /Width: to have both sides closed at multiples of ($1 \frac{1}{2} + \frac{1}{4}$)

2" x 2" Square Mesh ST



Note: Custom treads can be fabricated from any SecureGrate™ molded or SecureSpan™ pultruded grating. Please call sales representative for details.



STAIR TREADS COVERS

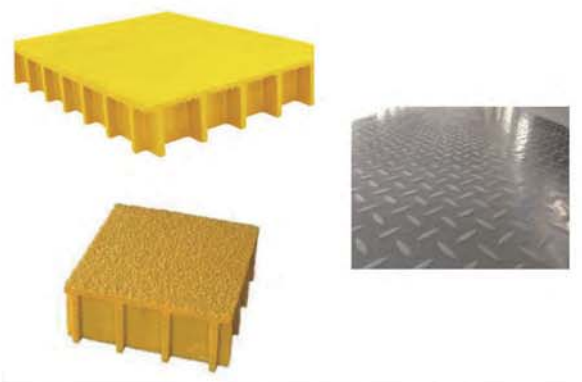
FRPmaster™ stair tread covers are designed to be placed over existing stair treads that have become slippery and unsafe. Their gritted surface provides long-lasting secure footing for optimal safety. These can be installed over existing wood, concrete, or steel treads using a washer clip or epoxy. Easy installation makes these covers a low-cost alternative to replacing the tread.

Stair tread covers come with a contrasting 1 ½" nosing. They are available in various colors and resins. The standard stock panel is 12" wide x 144" long but we can fabricate custom sizes to fit your needs.



SOLID PLATE

FRPmaster™ solid plates provide an excellent solution to slippery floors whether they are wood, steel, or concrete. Solid plates are offered in thicknesses from 1/8" to 3/4" thick and in all resin formulations to meet your specific corrosive environment. Plates can be installed using "W" clips, round head bolts, or anchors.



COVERED GRATING

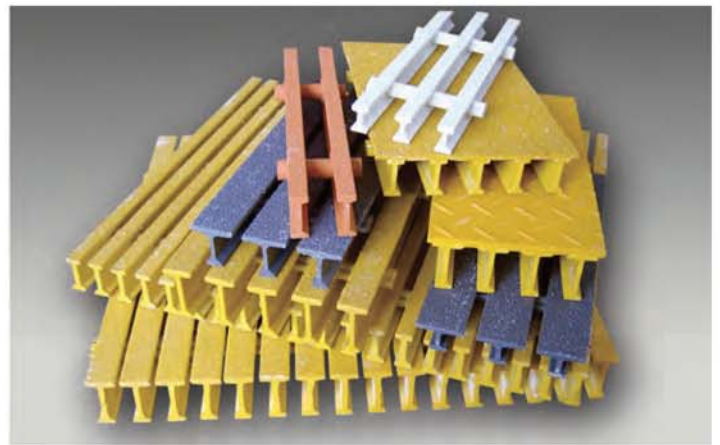
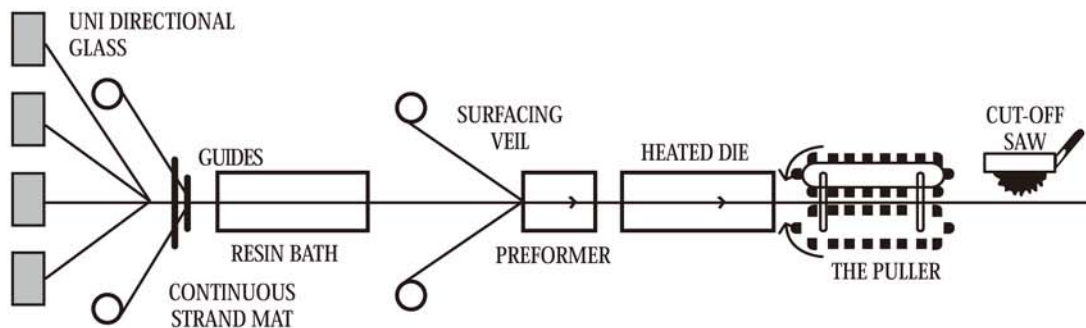
FRPmaster™ Covered Grating is preferred when solid plates are not enough to meet your span, load, or odor control requirements. Solid plates at 1/8" thick combined with the structural strength of grating create a stiffer product for nearly all applications. Covered Grating is often used for trench or tank covers but it is also ideal in areas where a solid top is mandatory (e.g. elevated walkways, ramps, or to allow for high heel shoe traffic).

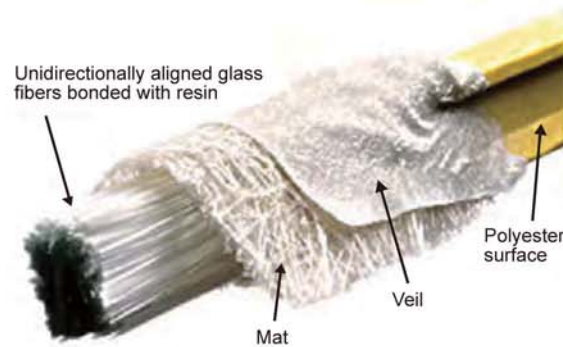


FRPmaster™ Pultruded Grating Products

Pultruded grating and structural shapes are manufactured through an automated process where continuous fiberglass roving and mat are pulled through guides, a resin bath and pre-formers. They are then wrapped with a synthetic veil before being pulled through a heated die. The individual components of pultruded grating (load bars and each piece of tie bar) are pultruded separately. Load bars are then cut to specified lengths as they exit the machine. They are drilled at 6" or 12" centers for tie bar insertion. They are spaced proportionately for the width of the panel at 3 ft., 4 ft., or 5 ft. Tie bar assemblies are then inserted into the load bar, creating multiple bonded intersections of load bars and tie bars. This provides the security of both a mechanically locked and bonded connection. Finally, both load and tie bars are sealed with corrosion resistant epoxy resin.

Pultruded grating is manufactured with a high percentage of glass within the resin matrix (65% glass to 35% resin). The resulting product has high unidirectional strength, provides increased load capacity over longer spans, and is corrosion resistant. SecureSpan™ Pultruded Grating Products are a lightweight, UV resistant, and durable making them a preferred alternative to steel or aluminum gratings.





Advantages of pultruded Grating:

- **High Strength:** Manufactured with high percentage of glass within the resin matrix (65% glass to 35% resin). **FRPmaster™** Pultruded Grating provides higher strength over longer spans.
- **Exceptionally High Strength to Weight Ratio:** Due to its high strength to weight ratio, **FRPmaster™** Pultruded Grating products weigh less compared to steel grating. Weight savings can range from 45% to 65% depending on the type of grating. This enable engineers to downsize supporting structure and cut down expenses for the overall project.
- **High Impact Resistance:** **FRPmaster™** Pultruded Grating products can withstand major impacts with minimal structural damage.
- **Corrosion Resistance:** **FRPmaster™** Pultruded Grating ensures optimum corrosion resistance from a variety of harsh chemicals. **FRPmaster™** is available in premium Isophthalic Polyester and Vinyl Ester resins.
- **UV Resistance:** Resin rich surface and built-in UV inhibitors provide protection against the harmful rays.
- **Anti-Skid:** **FRPmaster™** is manufactured with grit surface. This provides a safe, slip-resistant walking surface.
- **Fire-Retardant:** All **FRPmaster™** Pultruded Grating products are manufactured with a flame spread rating of 25 or less as tested in accordance to ASTM E-84. These products also meet the self-extinguishing requirements of ASTM D-635.
- **Non-Conductive:** All **FRPmaster™** Pultruded Grating products are thermally and electrically nonconductive, providing additional safety for employees.
- **Electronically Transparent:** FRP products do not interfere with electromagnetic and radio waves.
- **Minimal Maintenance:** FRP grating does not need to be maintained like steel grating products.
- **Ease of Fabrication:** **FRPmaster™** Pultruded Grating products are light-weight. They can be lifted without heavy equipment and extra workers.



Pultruded Grating Available Sizes, Resins, & Colors



FRPmaster™ Pedestrian Pultruded Grating Selection & Details

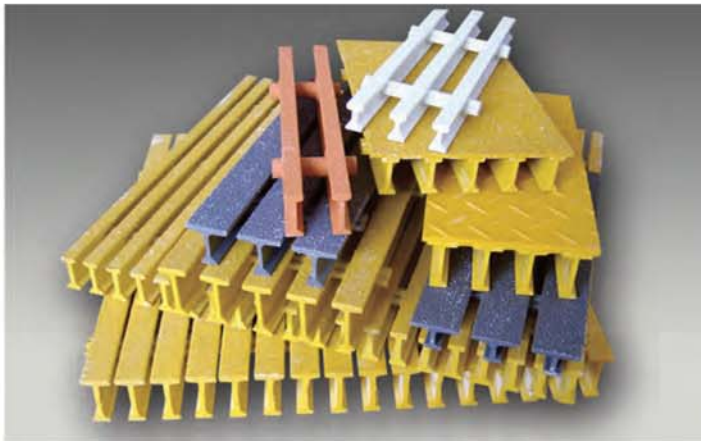
TYPE	THICKNESS	LOAD BAR SPACING	PANEL SIZE	WEIGHT / SQFT	OPEN AREA	COLORS	RESIN
MCT1810	1"	2"	3 Ft x 20 Ft, 4 Ft x 20 Ft	2.39 lbs	18%	Dark Gray, Light Gray, White	ISOFR, VEFR
MCT3310	1"	1.5"	3 Ft x 20 Ft, 4 Ft x 20 Ft	2.25 lbs	33 %	Yellow, Dark Gray	ISOFR, VEFR
MCT3510	1"	2.5"	3 Ft x 20 Ft, 4 Ft x 20 Ft	2 lbs	35 %	Yellow, Dark Gray	ISOFR, VEFR
MCT1715	1.5"	1.2"	3 Ft x 20 Ft, 4 Ft x 20 Ft	3.39 lbs	17 %	Yellow, Dark Gray	ISOFR, VEFR
MCT3315	1.5"	1.52"	3 Ft x 20 Ft, 4 Ft x 20 Ft	2.81 lbs	33 %	Yellow, Dark Gray	ISOFR, VEFR

FRPmaster™ Industrial Pultruded Grating Selection & Details

TYPE	THICKNESS	LOAD BAR SPACING	PANEL SIZE	WEIGHT / SQFT	OPEN AREA	COLORS	RESIN
MCI4010	1"	1"	3 Ft x 20 Ft, 4 Ft x 20 Ft	3.6 lbs	40 %	Yellow, Dark Gray	ISOFR, VEFR
MCI6010	1"	1.5"	3 Ft x 20 Ft, 4 Ft x 20 Ft	2.33 lbs	60 %	Yellow, Dark Gray	ISOFR, VEFR
MCI4015	1.5"	1"	3 Ft x 20 Ft, 4 Ft x 20 Ft	4.5 lbs	40 %	Yellow, Dark Gray	ISOFR, VEFR
MCI6015	1.5"	1.5"	3 Ft x 20 Ft, 4 Ft x 20 Ft	3.30 lbs	60 %	Yellow, Dark Gray	ISOFR, VEFR
MCT3320	2"	1.5"	3 Ft x 20 Ft, 4 Ft x 20 Ft	4.44 lbs	33 %	Yellow, Dark Gray	ISOFR, VEFR
MCT5020	2"	2"	3 Ft x 20 Ft, 4 Ft x 20 Ft	3.43 lbs	50 %	Yellow, Dark Gray	ISOFR, VEFR

FRPmaster™ Heavy Duty Pultruded Grating Selection & Details

TYPE	THICKNESS	LOAD BAR SPACING	PANEL SIZE	WEIGHT / SQFT	OPEN AREA	COLORS	RESIN
MCHD6010	1"	1.5"	3 Ft x 20 Ft, 4 Ft x 20 Ft	4.05 lbs	60 %	Yellow, Dark Gray	ISOFR, VEFR
MCHD5010	1"	1.2"	3 Ft x 20 Ft, 4 Ft x 20 Ft	4.94 lbs	50 %	Yellow, Dark Gray	ISOFR, VEFR
MCHD4010	1"	1"	3 Ft x 20 Ft, 4 Ft x 20 Ft	5.84 lbs	40 %	Yellow, Dark Gray	ISOFR, VEFR
MCHD6015	1.5"	1.5"	3 Ft x 20 Ft, 4 Ft x 20 Ft	6.25 lbs	60 %	Yellow, Dark Gray	ISOFR, VEFR
MCHD5015	1.5"	1.2"	3 Ft x 20 Ft, 4 Ft x 20 Ft	7.69 lbs	50 %	Yellow, Dark Gray	ISOFR, VEFR
MCHD4015	1.5"	1"	3 Ft x 20 Ft, 4 Ft x 20 Ft	9.13 lbs	40 %	Yellow, Dark Gray	ISOFR, VEFR
MCHD6020	2"	1.5"	3 Ft x 10 Ft, 4 Ft x 10 Ft	8.03 lbs	60 %	Yellow, Dark Gray	ISOFR, VEFR
MCHD5020	2"	1.2"	3 Ft x 20 Ft, 4 Ft x 20 Ft	9.92 lbs	50 %	Yellow, Dark Gray	ISOFR, VEFR
MCHD4020	2"	1"	3 Ft x 20 Ft, 4 Ft x 20 Ft	11.81 lbs	40 %	Yellow, Dark Gray	ISOFR, VEFR
MCHD6025	2.5"	1.5"	3 Ft x 10 Ft, 4 Ft x 10 Ft	10.71 lbs	60 %	Yellow, Dark Gray	ISOFR, VEFR
MCHD5025	2.5"	1.2"	3 Ft x 10 Ft, 4 Ft x 10 Ft	12.56 lbs	50 %	Yellow, Dark Gray	ISOFR, VEFR
MCHD4025	2.5"	1"	3 Ft x 10 Ft, 4 Ft x 10 Ft	14.42 lbs	40 %	Yellow, Dark Gray	ISOFR, VEFR



FRPmaster™ Pultruded Grating Resins

ZeAll Industries manufactures molded grating products in following resins:

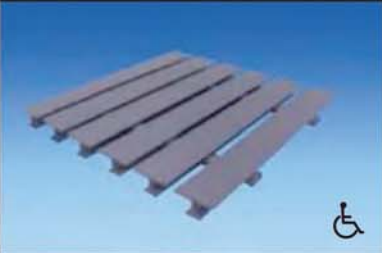
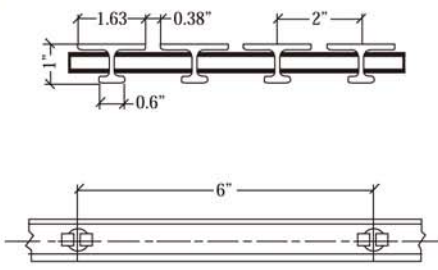
VINYL ESTER (VFR / VEFR)

Among all available resins, vinyl ester resin provides the most corrosion resistance available throughout the Pultruded grating industry. It offers outstanding resistance to a wide range of highly corrosive environments, from caustic to acidic. Especially in acidic environments where grating is subjected to frequent and or direct contact with harsh chemicals, Vinyl Ester resin has no match. Standard stock colors are Yellow and Dark Gray. Flame spread rating per ASTM E84 is of 25 or less.

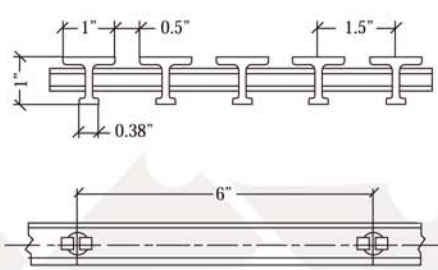
ISOPHTHALIC POLYESTER (ISOFR)

ISOFR resin is designed with flame spread rating per ASTM E84 of 25 or less. This mid-level resin provides corrosion resistance to grating where it is subjected infrequent contact, splashes, and spills to harsh chemicals. It is available at a lower cost compared to VEFR resin. Standard stock colors are Yellow and Dark Gray.

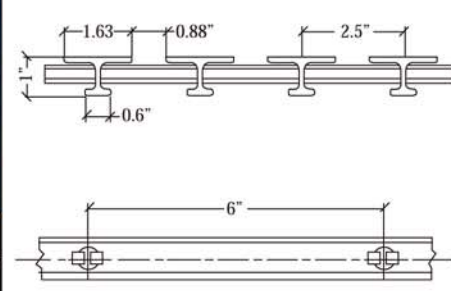
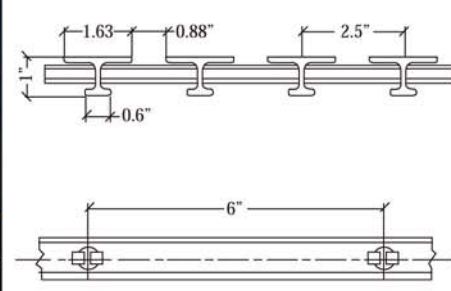
◆ T-Bar 1" Deep 18% Open (MCT1810)

Engineering Properties Per Foot of Width:		$A=2.86 \text{ in}^2$	$I=0.37 \text{ in}^4$	$S_T=1.00 \text{ in}^3$	$S_B=0.59 \text{ in}^3$
					
	Stocked Item				
	Panel Sizes Available: 3' x 20', 4' x 20'				
		# of Bars:	6		
		Bar Depth:	1"		
		Open Area:	18%		
		Max Width:	5'		
		Load Bar Centers:	2"		
		Approx. Weight:	2.39 lbs/ft ²		
		Cross Bar Spacing	6"		

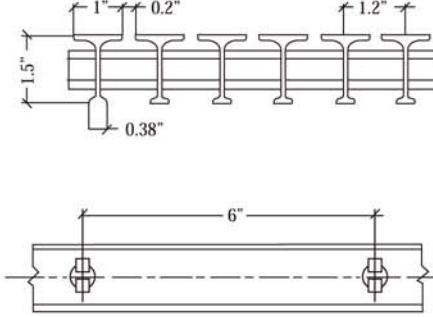
◆ T-Bar 1" Deep 33% Open (MCT3310)

Engineering Properties Per Foot of Width:		$A=2.34 \text{ in}^2$	$I=0.27 \text{ in}^4$	$S_T=0.78 \text{ in}^3$	$S_B=0.42 \text{ in}^3$
					
	Non-Stocked Item(Custom Order)				
	Panel Sizes Available: Please Call				
		# of Bars:	8		
		Bar Depth:	1"		
		Open Area:	33%		
		Max Width:	5'		
		Load Bar Centers:	1.5"		
		Approx. Weight:	2.39 lbs/ft ²		
		Cross Bar Spacing	6"		

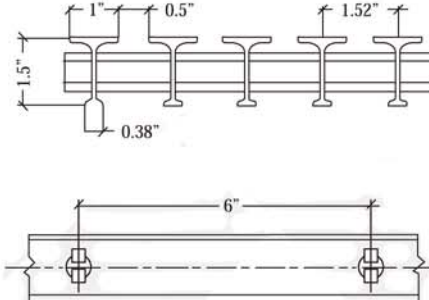
◆ T-Bar 1" Deep 35% Open (MCT3510)

Engineering Properties Per Foot of Width:		A=2.38 in ²	I=0.31 in ⁴	S _T =0.84 in ³	S _B =0.49 in ³
		# of Bars:	5		
		Bar Depth:	1"		
Non-Stocked Item(Custom Order)		Open Area:	35%		
		Max Width:	5'		
		Load Bar Centers:	2.5"		
		Approx. Weight:	2.00 lbs/ft ²		
		Cross Bar Spacing	6"		
Panel Sizes Available: Please Call					

◆ T-Bar 1 1/2" Deep 17% Open (MCT1715)

Engineering Properties Per Foot of Width:		$A=3.08 \text{ in}^2$	$I=0.9 \text{ in}^4$	$S_T=1.41 \text{ in}^3$	$S_B=1.05 \text{ in}^3$
		# of Bars:	10		
		Bar Depth:	1.5"		
Non-Stocked Item(Custom Order)		Open Area:	17%		
		Max Width:	5'		
Panel Sizes Available: Please Call		Load Bar Centers:	1.2"		
		Approx. Weight:	3.39 lbs/ft ²		
		Cross Bar Spacing	6"		

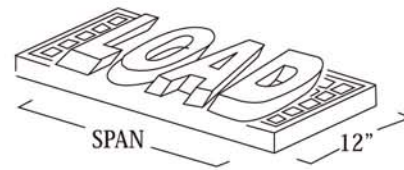
◆ T-Bar 1 1/2" Deep 33% Open (MCT3315)

Engineering Properties Per Foot of Width:		A=2.47 in ²	I=0.72 in ⁴	S _T =1.13 in ³	S _B =0.84 in ³
 Non-Stocked Item(Custom Order)		# of Bars:	8		
		Bar Depth:	1.5"		
Panel Sizes Available: Please Call		Open Area:	33%		
		Max Width:	5'		
		Load Bar Centers:	1.5"		
		Approx. Weight:	2.81 lbs/ft ²		
		Cross Bar Spacing	6"		

Pedestrian Grating Deflection Tables



**Pultruded Pedestrian Grating:
Uniform Load Deflection Table:**

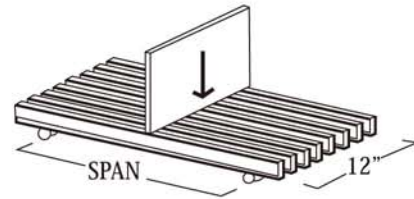


SPAN in inches	STYLE	LOAD IN lbs/ft ²								Max Rec. Load	Apparent El x 10 ⁶ (LB-IN ²)
		50	100	150	200	250	500	1000	2000		
12	MCT1810	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.02	0.05	10,418	0.96
	MCT3310	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	0.03	0.06	7,599	0.70
	MCT3510	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	0.03	0.06	7,620	0.74
	MCT1715	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.02	13,240	1.89
	MCT3315	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.03	10,541	1.71
18	MCT1810	<0.01	<0.01	0.01	0.02	0.02	0.05	0.09	0.19	4,562	1.22
	MCT3310	<0.01	0.01	0.02	0.03	0.03	0.06	0.13	0.25	3,314	0.90
	MCT3510	<0.01	0.01	0.02	0.02	0.03	0.06	0.12	0.24	3,339	0.95
	MCT1715	<0.01	<0.01	<0.01	<0.01	0.01	0.02	0.04	0.08	5,884	2.72
	MCT3315	<0.01	<0.01	<0.01	<0.01	0.01	0.02	0.05	0.10	4,685	2.30
24	MCT1810	0.01	0.03	0.04	0.06	0.07	0.14	0.27		2,582	1.32
	MCT3310	0.02	0.04	0.06	0.07	0.09	0.18	0.36		1,957	0.99
	MCT3510	0.02	0.03	0.05	0.07	0.08	0.17	0.33		1,898	1.08
	MCT1715	<0.01	0.01	0.02	0.02	0.03	0.06	0.11	0.22	3,310	3.20
	MCT3315	<0.01	0.01	0.02	0.03	0.03	0.07	0.14	0.27	2,635	2.65
30	MCT1810	0.03	0.07	0.10	0.13	0.16	0.32			1,626	1.36
	MCT3310	0.04	0.09	0.13	0.17	0.22	0.43			1,258	1.02
	MCT3510	0.04	0.08	0.12	0.15	0.02	0.39			1,204	1.14
	MCT1715	0.01	0.02	0.04	0.05	0.06	0.12	0.25		2,118	3.52
	MCT3315	0.02	0.03	0.05	0.06	0.08	0.16	0.32	0.50	1,687	2.75
36	MCT1810	0.07	0.13	0.20	0.26	0.33				1,137	1.38
	MCT3310	0.09	0.18	0.26	0.35	0.44				883	1.04
	MCT3510	0.08	0.16	0.24	0.31	0.39				835	1.16
	MCT1715	0.03	0.05	0.08	0.10	0.13	0.25			1,471	3.60
	MCT3315	0.03	0.07	0.10	0.13	0.16	0.33			1,171	2.79
42	MCT1810	0.12	0.24	0.36	0.48					835	1.40
	MCT3310	0.16	0.32	0.48						655	1.05
	MCT3510	0.14	0.29	0.43						614	1.18
	MCT1715	0.05	0.09	0.14	0.19	0.23	0.47			1,081	3.62
	MCT3315	0.06	0.12	0.18	0.24	0.30				861	2.83
48	MCT1810	0.20	0.41							638	1.42
	MCT3310	0.27								502	1.06
	MCT3510	0.24	0.48							470	1.20
	MCT1715	0.08	0.16	0.24	0.32	0.40				827	3.64
	MCT3315	0.10	0.20	0.30	0.40	0.50				659	2.86
54	MCT1715	0.13	0.25	0.38	0.50					654	3.66
	MCT3315	0.16	0.32	0.48						521	2.89
60	MCT1715	0.19	0.38							530	3.68
	MCT3315	0.24	0.48							422	2.91
66	MCT1715	0.28								438	3.70
	MCT3315	0.35								348	2.93

Pedestrian Grating Deflection Tables

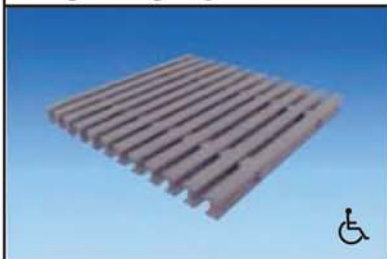
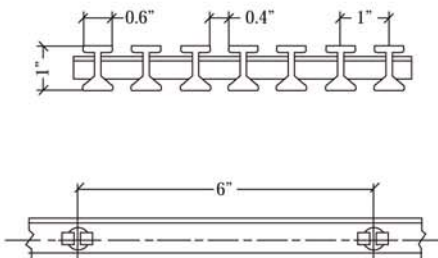


**Pultruded Pedestrian Grating
Concentrated Line Load Deflection Table:**

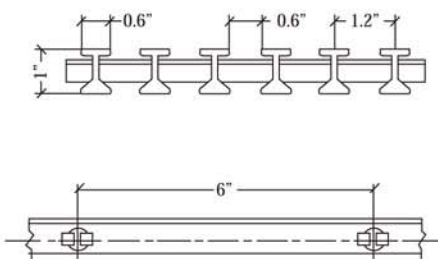


SPAN in inches	STYLE	LOAD IN lbs/ft OF WIDTH								Max Rec. Load	Apparent $EI \times 10^6$ (LB-IN ²)
		50	100	150	200	250	500	1000	2000		
12	MCT1810	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	0.04	0.08	5,112	0.96
	MCT3310	<0.01	<0.01	<0.01	0.01	0.01	0.03	0.05	0.10	1,950	0.70
	MCT3510	<0.01	<0.01	<0.01	<0.01	0.01	0.02	0.05	0.10	3,759	0.74
	MCT1715	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	0.04	10,343	1.89
	MCT3315	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.02	0.04	8,235	1.71
18	MCT1810	<0.01	<0.01	0.01	0.02	0.02	0.05	0.10	0.20	3,408	1.22
	MCT3310	<0.01	0.01	0.02	0.03	0.03	0.07	0.14	0.27	1,300	0.90
	MCT3510	<0.01	0.01	0.02	0.03	0.03	0.06	0.13	0.26	2,506	0.95
	MCT1715	<0.01	<0.01	<0.01	<0.01	0.01	0.02	0.04	0.09	6,895	2.72
	MCT3315	<0.01	<0.01	<0.01	0.01	0.01	0.03	0.05	0.11	5,490	2.30
24	MCT1810	0.01	0.02	0.03	0.04	0.05	0.11	0.22	0.44	2,556	1.32
	MCT3310	0.01	0.03	0.04	0.06	0.07	0.15	0.29		975	0.99
	MCT3510	0.01	0.03	0.04	0.05	0.07	0.13	0.27		1,880	1.08
	MCT1715	<0.01	<0.01	0.01	0.02	0.02	0.05	0.09	0.18	5,172	3.20
	MCT3315	<0.01	0.01	0.02	0.02	0.03	0.05	0.11	0.22	4,118	2.65
30	MCT1810	0.02	0.04	0.06	0.08	0.10	0.21	0.41		2,045	1.36
	MCT3310	0.03	0.06	0.08	0.11	0.14	0.28			780	1.02
	MCT3510	0.02	0.05	0.07	0.10	0.12	0.25	0.49		1,504	1.14
	MCT1715	<0.01	0.02	0.02	0.03	0.04	0.08	0.16	0.32	4,137	3.52
	MCT3315	0.01	0.02	0.03	0.04	0.05	0.10	0.20	0.41	3,294	2.75
36	MCT1810	0.04	0.07	0.11	0.14	0.18	0.35			1,704	1.38
	MCT3310	0.05	0.09	0.14	0.19	0.23	0.47			650	1.04
	MCT3510	0.04	0.08	0.13	0.17	0.21	0.42			1,253	1.16
	MCT1715	0.01	0.03	0.04	0.05	0.07	0.14	0.27		3,448	3.60
	MCT3315	0.02	0.03	0.05	0.07	0.09	0.17	0.35		2,745	2.79
42	MCT1810	0.06	0.11	0.17	0.22	0.28				1,461	1.40
	MCT3310	0.07	0.15	0.22	0.29	0.37				557	1.05
	MCT3510	0.07	0.13	0.20	0.26	0.33				1,074	1.18
	MCT1715	0.02	0.04	0.06	0.09	0.11	0.21	0.43		2,955	3.62
	MCT3315	0.03	0.05	0.08	0.11	0.14	0.27			2,353	2.83
48	MCT1810	0.08	0.16	0.24	0.32	0.41				1,278	1.42
	MCT3310	0.11	0.22	0.33	0.43					488	1.06
	MCT3510	0.10	0.19	0.29	0.38	0.48				940	1.20
	MCT1715	0.03	0.06	0.09	0.13	0.16	0.32			2,586	3.64
	MCT3315	0.04	0.08	0.12	0.16	0.20	0.40			2,059	2.86
54	MCT1715	0.04	0.09	0.13	0.18	0.22	0.45			2,298	3.66
	MCT3315	0.06	0.11	0.17	0.23	0.28				1,830	2.89
60	MCT1715	0.06	0.12	0.18	0.24	0.31				2,069	3.68
	MCT3315	0.08	0.15	0.23	0.31	0.39				1,647	2.91
66	MCT1715	0.08	0.16	0.24	0.32	0.40				1,881	3.70
	MCT3315	0.10	0.20	0.31	0.41	0.51				1,497	2.93

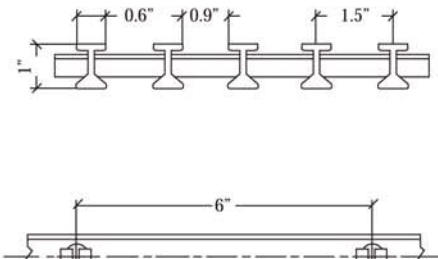
◆ I-Bar 1" Deep 40% Open (MCI4010)

Engineering Properties Per Foot of Width:		A=3.66 in ²	I=0.46 in ⁴	S =0.93 in ³		
					# of Bars:	12
					Bar Depth:	1"
					Open Area:	40%
					Max Width:	5'
					Load Bar Centers:	1"
Stocked Item					Approx. Weight:	3.60 lbs/ft ²
Panel Sizes Available:					Cross Bar Spacing	6"
	4' x 12'					

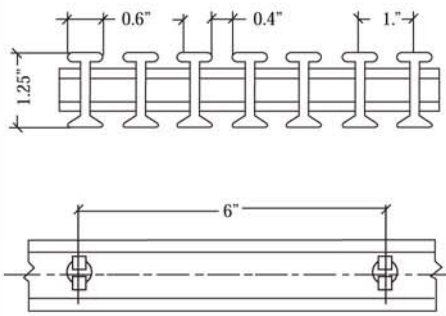
◆ T-Bar 1" Deep 50% Open (MCT5010)

Engineering Properties Per Foot of Width:		A=3.66 in ²	I=0.46 in ⁴	S =0.93 in ³		
					# of Bars:	10
					Bar Depth:	1"
					Open Area:	50%
					Max Width:	5'
					Load Bar Centers:	1.2"
					Approx. Weight:	3.02 lbs/ft ²
					Cross Bar Spacing	6"
Non-Stocked Item(Custom Order)						
Panel Sizes Available: Please Call						

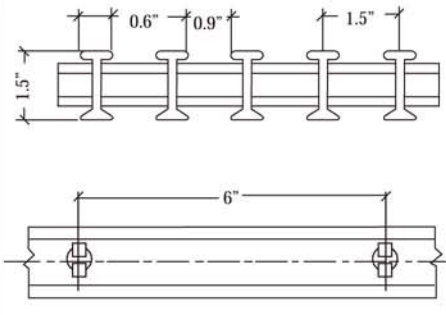
◆ I-Bar 1" Deep 60% Open (MCI6010)

Engineering Properties Per Foot of Width:		A=2.44 in ²	I=0.31 in ⁴	S=0.62 in ³		
					# of Bars:	8
					Bar Depth:	1"
Non-Stocked Item(Custom Order)					Open Area:	60%
Panel Sizes Available: (3'x20'),(4'x20')					Max Width:	5'
					Load Bar Centers:	1.5"
					Approx. Weight:	2.33 lbs/ft ²
					Cross Bar Spacing	6"

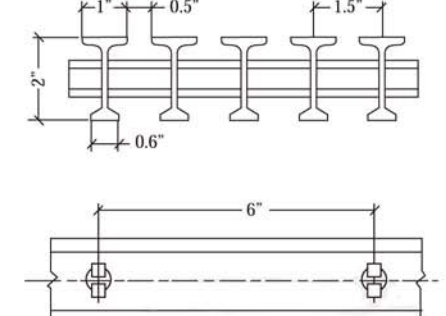
◆ I-Bar 1 1/2" Deep 40% Open (MCI4015)

Engineering Properties Per Foot of Width:		$A=4.60 \text{ in}^2$	$I=1.32 \text{ in}^4$	$S=1.76 \text{ in}^3$
 Non-Stocked Item(Custom Order) Panel Sizes Available: 4'x20'		# of Bars:	12	
		Bar Depth:	1.5"	
		Open Area:	40%	
		Max Width:	5'	
		Load Bar Centers:	1"	
		Approx. Weight:	4.50 lbs/ft ²	
		Cross Bar Spacing	6"	

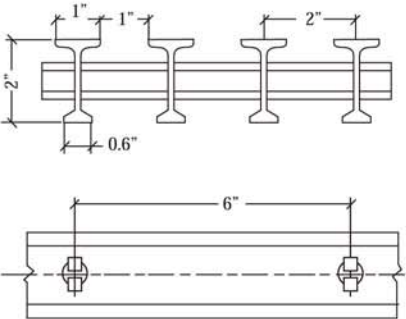
◆ T-Bar 1 1/2" Deep 60% Open (MCI6015)

Engineering Properties Per Foot of Width:		$A=3.06 \text{ in}^2$	$I=0.88 \text{ in}^4$	$S=1.17 \text{ in}^3$
 Non-Stocked Item(Custom Order) Panel Sizes Available: (3'x20'), (4'x20')		# of Bars:	8	
		Bar Depth:	1.5"	
		Open Area:	60%	
		Max Width:	5'	
		Load Bar Centers:	1.5"	
		Approx. Weight:	3.30 lbs/ft ²	
		Cross Bar Spacing	6"	

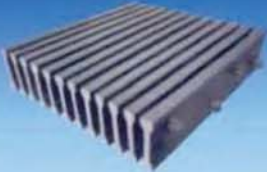
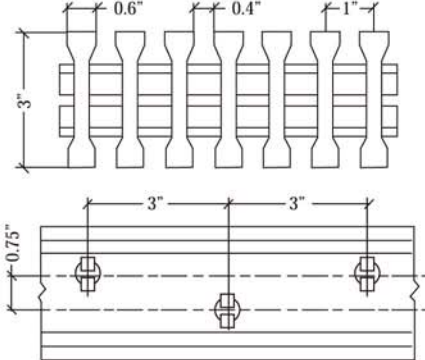
◆ T-Bar 2" Deep 33% Open (MCT3320)

Engineering Properties Per Foot of Width:		$A=4.3 \text{ in}^2$	$I=1.32 \text{ in}^4$	$S_T=2.64 \text{ in}^3$	$S_B=1.76 \text{ in}^3$
 Non-Stocked Item(Custom Order) Panel Sizes Available: 4'x20'		# of Bars:	8		
		Bar Depth:	2"		
		Open Area:	33%		
		Max Width:	5'		
		Load Bar Centers:	1.5"		
		Approx. Weight:	4.44 lbs/ft ²		
		Cross Bar Spacing	6"		

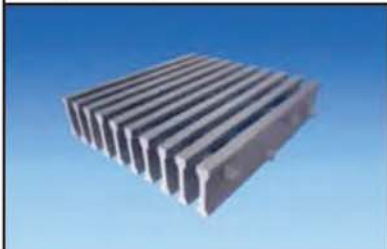
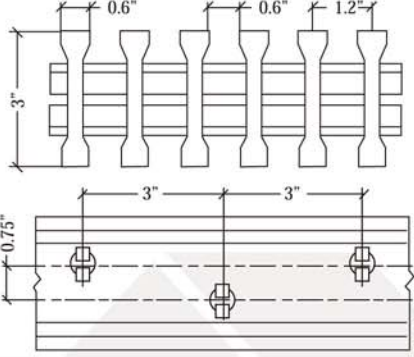
◆ T-Bar 2" Deep 50% Open (MCT5020)

Engineering Properties Per Foot of Width:		A=3.23 in ² I=1.58 in ⁴ S _T =1.98 in ³ S _B =1.32 in ³		
		# of Bars:	6	
		Bar Depth:	2"	
		Open Area:	50%	
Non-Stocked Item(Custom Order)		Max Width:	5'	
Panel Sizes Available: Please Call		Load Bar Centers:	2"	
		Approx. Weight:	3.43 lbs/ft ²	
		Cross Bar Spacing	6"	

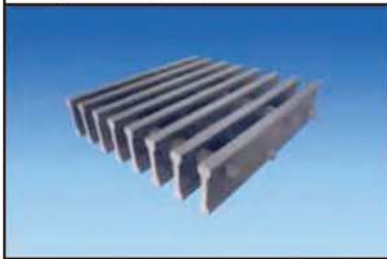
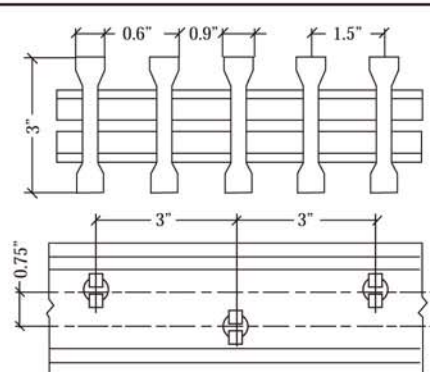
◆ I-Bar 3" Deep 60% Open (MCHDI6030)

Engineering Properties Per Foot of Width:		A=3.06 in ² I=0.88 in ⁴ S=1.17 in ³	
 		# of Bars:	8
		Bar Depth:	1.5"
		Open Area:	60%
		Max Width:	5'
		Load Bar Centers:	1.5"
Non-Stocked Item(Custom Order)		Approx. Weight:	3.30 lbs/ft ²
Panel Sizes Available: (3'x20'), (4'x20')		Cross Bar Spacing	6"

◆ I-Bar 3" Deep 50% Open (MCHDI5030)

Engineering Properties Per Foot of Width:		A=9.75 in ²	I=11.47 in ⁴	S=7.65 in ³
		# of Bars:	10	
		Bar Depth:	3"	
Open Area:		50%		
Max Width:		5'		
Load Bar Centers:		1.2"		
Approx. Weight:		10.85 lbs/ft ²		
Cross Bar Spacing		3"		
Non-Stocked Item(Custom Order)				
Panel Sizes Available: Please Call				

◆ I-Bar 3" Deep 40% Open (MCHDI4030)

Engineering Properties Per Foot of Width:		A=11.18 in ²	I=13.76 in ⁴	S=9.18 in ³	
		# of Bars:	8		
		Bar Depth:	3"		
Non-Stocked Item(Custom Order)		Open Area:	40%		
		Max Width:	5'		
Panel Sizes Available: Please Call		Load Bar Centers:	1"		
		Approx. Weight:	12.35 lbs/ft ²		
		Cross Bar Spacing	3"		



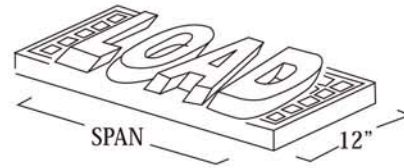
Pultruded Industrial Grating Deflection Tables



**Pultruded Industrial Grating:
Uniform Load Deflection Table:**

SPAN in inches	STYLE	LOAD IN lbs/ft ²								Max Rec. Load	Apparent EI x 10 ⁻⁶ (LB-IN ²)
		50	100	150	200	250	500	1000	2000		
12	MCI4010 &	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.03	17,605	1.80
	MCI6010	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.02	0.04	7,944	1.10
	MCI4015 &	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	21,051	3.00
	MCI6015	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	13,992	2.46
	MCT3320 &	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	20,269	3.60
	MCT5020	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.03	23,936	1.80
	MCHDI4030 &	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	76,262	12.45
	MCHDI5030	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	59,802	8.56
	MCHDI6030	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	44,333	6.85
18	MCI4010 &	<0.01	<0.01	<0.01	0.01	0.01	0.03	0.05	0.11	7,969	2.10
	MCI6010	<0.01	<0.01	0.01	0.02	0.02	0.04	0.08	0.17	5,296	1.38
	MCI4015 &	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.02	0.05	14,559	4.88
	MCI6015	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	0.04	0.07	7,016	3.23
	MCT3320 &	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	0.04	13,524	6.07
	MCT5020	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.03	0.06	8,624	4.15
	MCHDI4030 &	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	33,894	19.96
	MCHDI5030	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	26,578	15.02
	MCHDI6030	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	19,703	11.68
24	MCI4010 &	<0.01	0.02	0.02	0.03	0.04	0.08	0.16	0.32	3,961	2.28
	MCI6010	0.01	0.02	0.04	0.05	0.06	0.12	0.23	0.47	2,935	1.54
	MCI4015 &	<0.01	<0.01	<0.01	0.01	0.02	0.03	0.06	0.12	7,136	5.90
	MCI6015	<0.01	<0.01	0.01	0.02	0.02	0.05	0.09	0.18	4,585	3.91
	MCT3320 &	<0.01	<0.01	<0.01	<0.01	0.01	0.02	0.05	0.09	7,398	7.89
	MCT5020	<0.01	<0.01	<0.01	0.01	0.02	0.03	0.06	0.12	6,468	6.17
	MCHDI4030 &	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.03	19,066	26.81
	MCHDI5030	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	0.04	14,950	21.12
	MCHDI6030	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.02	0.04	11,083	16.68
30	MCI4010 &	0.02	0.04	0.06	0.07	0.09	0.19	0.37		2,574	2.37
	MCI6010	0.03	0.05	0.08	0.11	0.14	0.27			1,845	1.63
	MCI4015 &	<0.01	0.01	0.02	0.03	0.03	0.07	0.14	0.28	4,405	6.40
	MCI6015	0.01	0.02	0.03	0.04	0.05	0.10	0.21	0.42	2,831	4.24
	MCT3320 &	<0.01	<0.01	0.01	0.02	0.02	0.05	0.09	0.19	5,437	9.32
	MCT5020	<0.01	0.01	0.18	0.02	0.03	0.06	0.12	0.24	4,242	7.35
	MCHDI4030 &	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.03	0.05	12,202	32.86
	MCHDI5030	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	0.03	0.07	9,568	26.84
	MCHDI6030	<0.01	<0.01	<0.01	<0.01	0.01	0.02	0.04	0.08	7,093	20.78
36	MCI4010 &	0.04	0.08	0.11	0.15	0.19	0.38			1,791	2.42
	MCI6010	0.06	0.11	0.17	0.22	0.27				1,281	1.66
	MCI4015 &	0.01	0.03	0.04	0.06	0.07	0.14	0.27		3,161	6.66
	MCI6015	0.02	0.04	0.06	0.08	0.10	0.21	0.41		2,006	4.41
	MCT3320 &	<0.01	0.02	0.03	0.04	0.05	0.09	0.18	0.36	3,612	10.10
	MCT5020	0.01	0.02	0.03	0.05	0.06	0.12	0.23	0.46	2,946	7.95
	MCHDI4030 &	<0.01	<0.01	<0.01	<0.01	0.01	0.02	0.05	0.10	8,474	37.90
	MCHDI5030	<0.01	<0.01	<0.01	0.01	0.01	0.03	0.06	0.11	6,645	32.25
	MCHDI6030	<0.01	<0.01	0.01	0.01	0.02	0.04	0.07	0.14	4,926	25.24

Pultruded Industrial Grating Deflection Tables



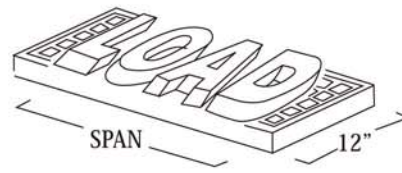
**Pultruded Industrial Grating:
Uniform Load Deflection Table:**

SPAN in inches	STYLE	LOAD IN lbs/ft ²								Max Rec. Load	Apparent El x 10 ⁻⁶ (LB-IN ²)
		50	100	150	200	250	500	1000	2000		
42	MCI4010	0.07	0.14	0.21	0.28	0.35				1,314	2.44
	MCI6010	0.10	0.20	0.30	0.40	0.50				943	1.68
	MCI4015	0.03	0.05	0.08	0.10	0.13	0.25	0.50		2,292	6.75
	MCI6015	0.04	0.08	0.11	0.15	0.19	0.38			1,454	4.47
	MCT3320	0.02	0.03	0.05	0.06	0.08	0.16	0.32		2,635	10.60
	MCT5020	0.02	0.04	0.06	0.08	0.10	0.20	0.41		2,153	8.31
	MCHDI4030	<0.01	<0.01	<0.01	0.02	0.02	0.04	0.08	0.16	6,226	42.09
	MCHDI5030	<0.01	<0.01	0.01	0.02	0.02	0.05	0.09	0.18	4,882	36.75
	MCHDI6030	<0.01	0.01	0.02	0.02	0.03	0.06	0.11	0.23	3,619	29.42
48	MCI4010	0.12	0.24	0.35	0.47					1,004	2.45
	MCI6010	0.17	0.34							721	1.70
	MCI4015	0.04	0.09	0.13	0.17	0.21	0.42			1,746	6.81
	MCI6015	0.06	0.13	0.19	0.26	0.32				1,117	4.58
	MCT3320	0.03	0.05	0.08	0.10	0.13	0.26			2,030	11.06
	MCT5020	0.03	0.07	0.10	0.14	0.17	0.34			1,672	8.55
	MCHDI4030	<0.01	0.01	0.02	0.03	0.03	0.06	0.13	0.25	4,766	45.51
	MCHDI5030	<0.01	0.01	0.02	0.03	0.04	0.07	0.14	0.29	3,738	40.14
	MCHDI6030	<0.01	0.02	0.03	0.04	0.04	0.09	0.18	0.35	2,771	32.70
54	MCI4010	0.19	0.38							792	2.46
	MCI6010	0.27								571	1.72
	MCI4015	0.07	0.14	0.20	0.27	0.34				1,387	6.83
	MCI6015	0.10	0.20	0.31	0.41	0.51				885	4.52
	MCT3320	0.04	0.08	0.12	0.16	0.21	0.41			1,600	11.26
	MCT5020	0.05	0.11	0.16	0.21	0.27				1,310	8.65
	MCHDI4030	<0.01	0.02	0.03	0.04	0.05	0.10	0.19	0.38	3,766	48.27
	MCHDI5030	0.01	0.02	0.03	0.04	0.05	0.11	0.21	0.43	2,953	43.00
	MCHDI6030	0.01	0.03	0.04	0.05	0.07	0.13	0.26		2,189	35.00
60	MCI4010	0.28								712	2.47
	MCI6010	0.40								514	1.74
	MCI4015	0.10	0.21	0.31	0.41	0.51				1,124	6.85
	MCI6015	0.16	0.31	0.47						717	4.54
	MCT3320	0.06	0.12	0.19	0.25	0.31				1,295	11.36
	MCT5020	0.08	0.16	0.24	0.32	0.40				1,062	8.75
	MCHDI4030	0.01	0.03	0.04	0.06	0.07	0.14	0.28		3,050	50.22
	MCHDI5030	0.02	0.03	0.05	0.06	0.08	0.16	0.31		2,392	44.86
	MCHDI6030	0.02	0.04	0.06	0.08	0.10	0.19	0.39		1,773	36.30
66	MCI4015	0.15	0.30	0.45						928	6.87
	MCI6015	0.23	0.45							592	4.55
	MCT3320	0.09	0.18	0.27	0.36	0.45				1,070	11.46
	MCT5020	0.12	0.23	0.35	0.47					881	8.78
	MCHDI4030	0.02	0.04	0.06	0.08	0.10	0.20	0.40		2,521	51.62
	MCHDI5030	0.02	0.04	0.07	0.09	0.11	0.22	0.45		1,977	46.00
	MCHDI6030	0.03	0.06	0.08	0.11	0.14	0.28			1,466	37.40

Pultruded Industrial Grating Deflection Tables

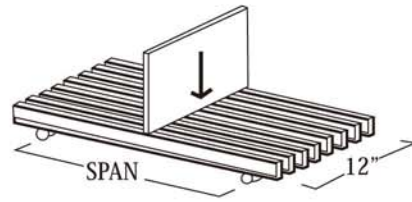


Pultruded Industrial Grating: Uniform Load Deflection Table:



SPAN in inches	STYLE	LOAD IN lbs/ft ²								Max Rec. Load	Apparent El x 10 ⁶ (LB-IN ²)
		50	100	150	200	250	500	1000	2000		
72	MCI4015	0.21	0.42							779	6.88
	MCI6015	0.32								498	4.56
	MCT3320	0.13	0.25	0.38	0.51					899	11.50
	MCT5020	0.17	0.33	0.50						740	8.80
	MCHDI4030	0.03	0.06	0.08	0.11	0.14	0.28			2,118	52.62
	MCHDI5030	0.03	0.06	0.09	0.12	0.16	0.31			1,661	47.00
	MCHDI6030	0.04	0.08	0.11	0.15	0.19	0.38			1,231	38.30
84	MCHDI4030	0.05	0.10	0.15	0.20	0.25	0.50			1,556	54.11
	MCHDI5030	0.06	0.11	0.17	0.22	0.28				1,220	48.40
	MCHDI6030	0.07	0.14	0.21	0.27	0.34				905	39.50
96	MCHDI4030	0.08	0.17	0.25	0.33	0.42				1192	55.32
	MCHDI5030	0.09	0.19	0.28	0.38	0.47				934	49.10
	MCHDI6030	0.11	0.23	0.34	0.46					693	40.20

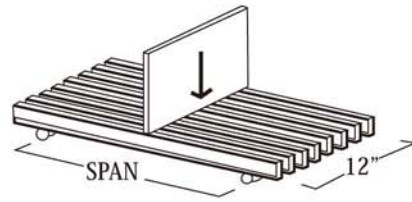
Pultruded Industrial Grating Deflection Tables



**Pultruded Industrial Grating
Concentrated Line Load Deflection Table:**

SPAN in inches	STYLE	LOAD IN lbs/ft OF WIDTH								Max Rec. Load	Apparent EI x 10 ⁶ (LB-IN ²)
		50	100	150	200	250	500	1000	2000		
12	MCI4010 ⑤	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.02	0.04	8,028	1.80
	MCI6010	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.03	0.07	5,755	1.10
	MCI4015 ⑤	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.02	14,034	3.00
	MCI6015	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	0.04	8,958	1.99
	MCT3320 ⑤	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.02	16,215	3.60
	MCT5020	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	0.04	13,302	1.80
	MCHDI4030 ⑤	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	59,580	12.45
	MCHDI5030	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	46,720	8.56
	MCHDI6030	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	34,635	6.85
18	MCI4010 ⑤	<0.01	<0.01	<0.01	0.01	0.01	0.03	0.06	0.12	5,352	2.10
	MCI6010	<0.01	<0.01	0.01	0.02	0.02	0.04	0.09	0.18	3,850	1.38
	MCI4015 ⑤	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.02	0.05	9,356	4.88
	MCI6015	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	0.04	0.08	5,972	3.23
	MCT3320 ⑤	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.02	0.04	10,810	6.07
	MCT5020	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.03	0.06	8,686	4.15
	MCHDI4030 ⑤	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	39,720	19.96
	MCHDI5030	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	31,147	15.02
	MCHDI6030	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	23,090	11.68
24	MCI4010 ⑤	<0.01	0.01	0.02	0.03	0.03	0.06	0.13	0.25	4,014	2.28
	MCI6010	<0.01	0.02	0.03	0.04	0.05	0.09	0.19	0.37	2,888	1.54
	MCI4015 ⑤	<0.01	<0.01	<0.01	<0.01	0.01	0.02	0.05	0.10	7,017	5.90
	MCI6015	<0.01	<0.01	0.01	0.01	0.02	0.04	0.07	0.15	4,479	3.91
	MCT3320 ⑤	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	0.04	0.07	8,108	7.89
	MCT5020	<0.01	<0.01	<0.01	<0.01	0.01	0.02	0.05	0.09	6,651	6.17
	MCHDI4030 ⑤	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.02	29,790	26.81
	MCHDI5030	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.03	23,360	21.12
	MCHDI6030	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	0.03	17,318	16.68
30	MCI4010 ⑤	0.01	0.02	0.04	0.05	0.06	0.12	0.24	0.47	3,211	2.37
	MCI6010	0.02	0.03	0.05	0.07	0.09	0.17	0.35	0.50	2,310	1.63
	MCI4015 ⑤	<0.01	<0.01	0.01	0.02	0.02	0.04	0.09	0.18	5,614	6.40
	MCI6015	<0.01	0.01	0.02	0.03	0.03	0.07	0.13	0.27	3,853	4.24
	MCT3320 ⑤	<0.01	<0.01	<0.01	0.01	0.02	0.03	0.06	0.12	6,486	9.32
	MCT5020	<0.01	<0.01	0.01	0.02	0.02	0.04	0.08	0.15	5,321	7.35
	MCHDI4030 ⑤	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	0.03	23,832	32.86
	MCHDI5030	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.02	0.04	18,688	26.84
	MCHDI6030	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.03	0.05	13,854	20.78
36	MCI4010 ⑤	0.02	0.04	0.06	0.08	0.10	0.20	0.40		2,676	2.42
	MCI6010	0.03	0.06	0.09	0.12	0.15	0.29	0.41		1,925	1.66
	MCI4015 ⑤	<0.01	0.01	0.02	0.03	0.04	0.07	0.15	0.29	4,678	6.66
	MCI6015	0.01	0.02	0.03	0.04	0.06	0.11	0.22	0.44	2,986	4.46
	MCT3320 ⑤	<0.01	<0.01	0.01	0.02	0.02	0.05	0.10	0.19	5,405	10.10
	MCT5020	<0.01	0.01	0.02	0.02	0.03	0.06	0.12	0.24	4,434	7.95
	MCHDI4030 ⑤	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.03	0.05	19,860	37.90
	MCHDI5030	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	0.03	0.06	15,573	32.25
	MCHDI6030	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	0.04	0.08	11,545	25.24

Pultruded Industrial Grating Deflection Tables



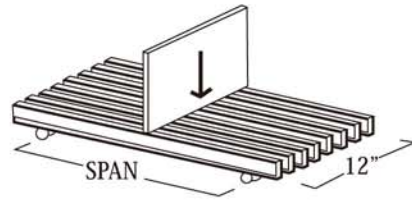
**Pultruded Industrial Grating
Concentrated Line Load Deflection Table:**

SPAN in inches	STYLE	LOAD IN lbs/ft OF WIDTH								Max Rec. Load	Apparent EI x 10 ⁶ (LB-IN ²)
		50	100	150	200	250	500	1000	2000		
12	MCI4010	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.02	0.04	8,028	1.80
	MCI6010	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.03	0.07	5,755	1.10
	MCI4015	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.02	14,034	3.00
	MCI6015	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	0.04	8,958	1.99
	MCT3320	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.02	16,215	3.60
	MCT5020	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	0.04	13,302	1.80
	MCHDI4030	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	59,580	12.45
	MCHDI5030	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	46,720	8.56
	MCHDI6030	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	34,635	6.85
18	MCI4010	<0.01	<0.01	<0.01	0.01	0.01	0.03	0.06	0.12	5,352	2.10
	MCI6010	<0.01	<0.01	0.01	0.02	0.02	0.04	0.09	0.18	3,850	1.38
	MCI4015	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.02	0.05	9,356	4.88
	MCI6015	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	0.04	0.08	5,972	3.23
	MCT3320	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.02	0.04	10,810	6.07
	MCT5020	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.03	0.06	8,686	4.15
	MCHDI4030	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	39,720	19.96
	MCHDI5030	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	31,147	15.02
	MCHDI6030	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	23,090	11.68
24	MCI4010	<0.01	0.01	0.02	0.03	0.03	0.06	0.13	0.25	4,014	2.28
	MCI6010	<0.01	0.02	0.03	0.04	0.05	0.09	0.19	0.37	2,888	1.54
	MCI4015	<0.01	<0.01	<0.01	<0.01	0.01	0.02	0.05	0.10	7,017	5.90
	MCI6015	<0.01	<0.01	0.01	0.01	0.02	0.04	0.07	0.15	4,479	3.91
	MCT3320	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	0.04	0.07	8,108	7.89
	MCT5020	<0.01	<0.01	<0.01	<0.01	0.01	0.02	0.05	0.09	6,651	6.17
	MCHDI4030	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.02	29,790	26.81
	MCHDI5030	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.03	23,360	21.12
	MCHDI6030	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	0.03	17,318	16.68
30	MCI4010	0.01	0.02	0.04	0.05	0.06	0.12	0.24	0.47	3,211	2.37
	MCI6010	0.02	0.03	0.05	0.07	0.09	0.17	0.35	0.50	2,310	1.63
	MCI4015	<0.01	<0.01	0.01	0.02	0.02	0.04	0.09	0.18	5,614	6.40
	MCI6015	<0.01	0.01	0.02	0.03	0.03	0.07	0.13	0.27	3,853	4.24
	MCT3320	<0.01	<0.01	<0.01	0.01	0.02	0.03	0.06	0.12	6,486	9.32
	MCT5020	<0.01	<0.01	0.01	0.02	0.02	0.04	0.08	0.15	5,321	7.35
	MCHDI4030	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	0.03	23,832	32.86
	MCHDI5030	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.02	0.04	18,688	26.84
	MCHDI6030	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.03	0.05	13,854	20.78
36	MCI4010	0.02	0.04	0.06	0.08	0.10	0.20	0.40		2,676	2.42
	MCI6010	0.03	0.06	0.09	0.12	0.15	0.29	0.41		1,925	1.66
	MCI4015	<0.01	0.01	0.02	0.03	0.04	0.07	0.15	0.29	4,678	6.66
	MCI6015	0.01	0.02	0.03	0.04	0.06	0.11	0.22	0.44	2,986	4.46
	MCT3320	<0.01	<0.01	0.01	0.02	0.02	0.05	0.10	0.19	5,405	10.10
	MCT5020	<0.01	0.01	0.02	0.02	0.03	0.06	0.12	0.24	4,434	7.95
	MCHDI4030	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.03	0.05	19,860	37.90
	MCHDI5030	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	0.03	0.06	15,573	32.25
	MCHDI6030	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	0.04	0.08	11,545	25.24

Pultruded Industrial Grating Deflection Tables

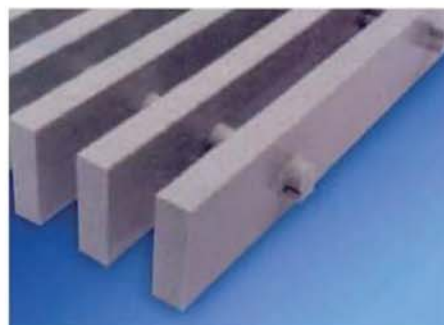


**Pultruded Industrial Grating
Concentrated Line Load Deflection Table:**



SPAN in inches	STYLE	LOAD IN lbs/ft OF WIDTH								Max Rec. Load	Apparent EI x 10 ⁶ (LB-IN ²)
		50	100	150	200	250	500	1000	2000		
72	MCI4010 ⚠	0.16	0.31	0.47						1,338	2.49
	MCI6010	0.22	0.44							962	1.76
	MCI4015 ⚠	0.06	0.11	0.17	0.23	0.28				2,339	6.88
	MCI6015	0.09	0.17	0.26	0.34	0.43				1,493	4.56
	MCT3320 ⚠	0.03	0.07	0.10	0.14	0.17	0.34			2,703	11.50
	MCT5020	0.04	0.09	0.13	0.18	0.22	0.44			2,217	8.80
	MCHDI4030 ⚠	<0.01	0.01	0.02	0.03	0.04	0.07	0.15	0.30	9,930	52.62
	MCHDI5030	<0.01	0.02	0.02	0.03	0.04	0.08	0.17	0.33	7,787	47.00
84	MCHDI6030	0.01	0.02	0.03	0.04	0.05	0.10	0.20	0.41	5,773	38.30
	MCHDI4030 ⚠	0.01	0.02	0.03	0.05	0.06	0.11	0.23	0.46	8,511	54.11
	MCHDI5030	0.01	0.03	0.04	0.05	0.06	0.13	0.26	0.51	6,674	48.40
96	MCHDI6030	0.02	0.03	0.05	0.06	0.08	0.16	0.31		4,948	39.50
	MCHDI4030 ⚠	0.02	0.03	0.05	0.07	0.08	0.17	0.33		7,448	55.32
	MCHDI5030	0.02	0.04	0.06	0.08	0.09	0.19	0.38		5,840	49.10
	MCHDI6030	0.02	0.05	0.07	0.09	0.11	0.23	0.46		4,329	40.20

is engineered for vehicular traffic (up to Standard Truck formerly H20) and high loads at longer spans. This heavy duty product is often used where grating faces severe loads from vehicles like fork lifts & semi trucks. It is also used to replace steel gratings where the spans are typically longer.



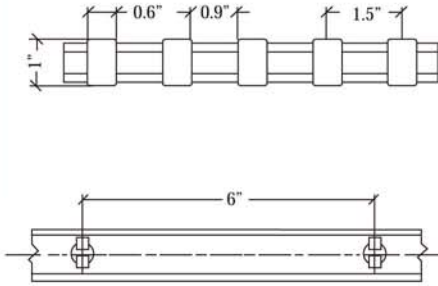
- Loading Docks
- Trenches at Overhead Doors
- Yard Drains

- Long Span Ability
- High Load Capacity
- Corrosion Resistant

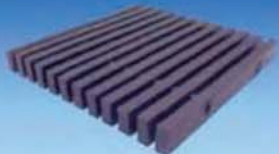
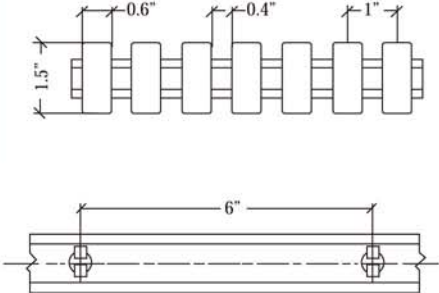
Engineering Properties Per Foot of Width:		$A=7.2 \text{ in}^2$	$I=0.37 \text{ in}^4$	$S=1.23 \text{ in}^3$
		# of Bars:	10	
		Bar Depth:	1"	
Stocked Item Panel Sizes Available: Please Call		Open Area:	40%	
		Max Width:	5'	
		Load Bar Centers:	1"	
		Approx. Weight:	5.84 lbs/ft ²	
		Cross Bar Spacing	6"	

Engineering Properties Per Foot of Width:		$A=6.0 \text{ in}^2$	$I=0.5 \text{ in}^4$	$S=1.0 \text{ in}^3$
		# of Bars:	10	
		Bar Depth:	1"	
Non-Stocked Item(Custom Order) Panel Sizes Available: Please Call		Open Area:	50%	
		Max Width:	5'	
		Load Bar Centers:	1.2"	
		Approx. Weight:	4.94 lbs/ft ²	
		Cross Bar Spacing	6"	

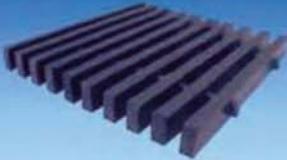
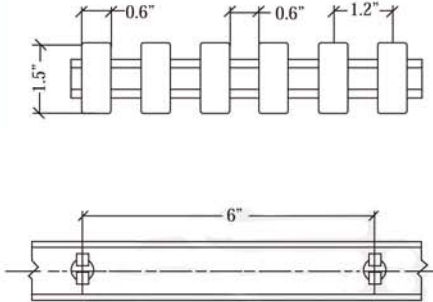
◆ Heavy Duty 1" Deep 60% open (MCHD6010)

Engineering Properties Per Foot of Width:		A=4.8 in ²	I=0.37 in ⁴	S=0.8 in ³		
					# of Bars:	8
					Bar Depth:	1"
					Open Area:	60%
					Max Width:	5'
					Load Bar Centers:	1.5"
Stocked Item					Approx. Weight:	4.05 lbs/ft ²
Panel Sizes Available:	Please Call				Cross Bar Spacing	6"

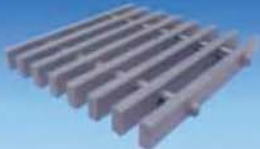
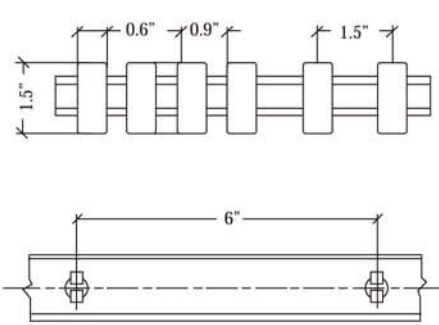
◆ Heavy Duty 1 1/2" Deep 40% open (MCHD4015)

Engineering Properties Per Foot of Width:		A=10.8 in ²	I=2.03 in ⁴	S=2.71 in ³		
 					# of Bars:	12
					Bar Depth:	1.5"
					Open Area:	40%
					Max Width:	5'
					Load Bar Centers:	1"
Stocked Item					Approx. Weight:	9.13 lbs/ft ²
Panel Sizes Available: Please Call					Cross Bar Spacing	6"

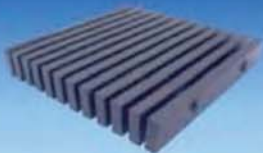
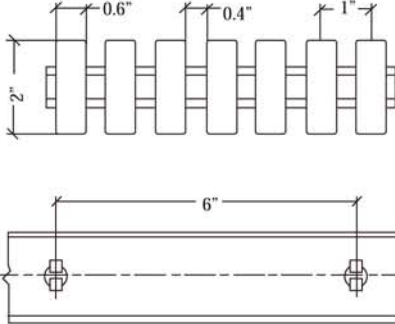
◆ Heavy Duty 1 1/2" Deep 50% open (MCHD5015)

Engineering Properties Per Foot of Width:		A=9.0 in ²	I=1.6 in ⁴	S=2.25 in ³		
					# of Bars:	10
					Bar Depth:	1.5"
					Open Area:	50%
					Max Width:	5'
					Load Bar Centers:	1.2"
Non-Stocked Item(Custom Order)					Approx. Weight:	7.69 lbs/ft ²
Panel Sizes Available: Please Call					Cross Bar Spacing	6"

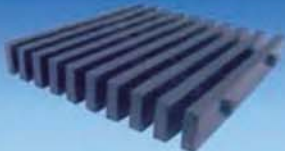
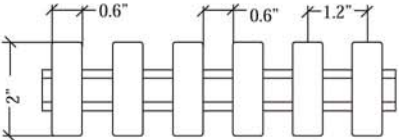
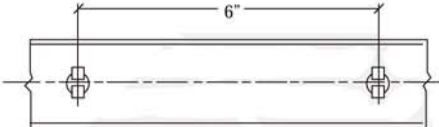
◆ Heavy Duty 1½" Deep 60% open (MCHD6015)

Engineering Properties Per Foot of Width:		A=7.2 in ²	I=1.36 in ⁴	S=1.81 in ³		
					# of Bars:	8
					Bar Depth:	1.5"
					Open Area:	60%
Stocked Item					Max Width:	5'
Panel Sizes Available: Please Call					Load Bar Centers:	1.5"
					Approx. Weight:	6.25 lbs/ft ²
					Cross Bar Spacing	6"

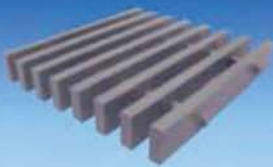
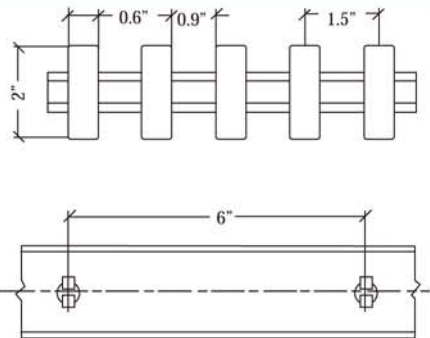
◆ Heavy Duty 2" Deep 40% open (MCHD4020)

Engineering Properties Per Foot of Width:		A=14.4 in ²	I=4.8 in ⁴	S=4.81 in ³	
 				# of Bars:	12
				Bar Depth:	2"
				Open Area:	40%
				Max Width:	5'
				Load Bar Centers:	1"
Stocked Item				Approx. Weight:	11.81 lbs/ft ²
Panel Sizes Available:				Cross Bar Spacing	6"
Please Call					

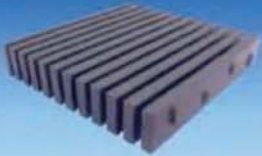
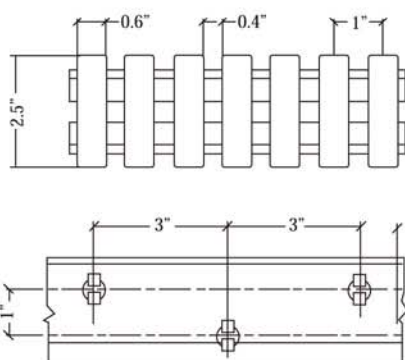
◆ Heavy Duty 2" Deep 50% open (MCHD5020)

Engineering Properties Per Foot of Width:		A=12.0 in ²	I=4.0 in ⁴	S=4.0 in ³
		# of Bars:	10	
		Bar Depth:	2"	
		Open Area:	50%	
		Max Width:	5'	
		Load Bar Centers:	1.2"	
Non-Stocked Item(Custom Order)		Approx. Weight:	9.92 lbs/ft ²	
Panel Sizes Available: Please Call		Cross Bar Spacing	6"	

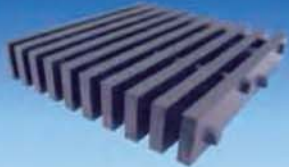
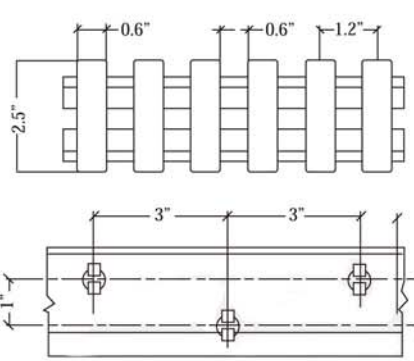
◆ Heavy Duty 2" Deep 60% open (MCHD6020)

Engineering Properties Per Foot of Width:		A=9.6 in ²	I=3.2 in ⁴	S=3.2 in ³		
						
					# of Bars:	8
					Bar Depth:	2"
					Open Area:	60%
Stocked Item			Max Width:	5'		
Panel Sizes Available: Please Call			Load Bar Centers:	1.5"		
			Approx. Weight:	8.03 lbs/ft ²		
			Cross Bar Spacing	6"		

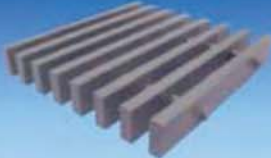
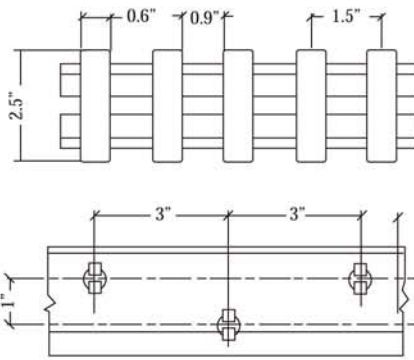
◆ Heavy Duty 2" Deep 40% open (MCHD4025)

Engineering Properties Per Foot of Width:		A=18.0 in ²	I=18.0 in ⁴	S=7.5 in ³	
 					
	# of Bars:				12
	Bar Depth:				2.5"
	Open Area:				40%
	Max Width:				5'
Load Bar Centers:	1"				
Stocked Item		Approx. Weight: 14.42 lbs/ft ²			
Panel Sizes Available:		Cross Bar Spacing: 3"			
Please Call					

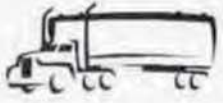
◆ Heavy Duty 2 1/2" Deep 50% open (MCHD5025)

Engineering Properties Per Foot of Width:		A=12.0 in ²	I=4.0 in ⁴	S=4.0 in ³
				
Non-Stocked Item(Custom Order)			# of Bars:	10
			Bar Depth:	2"
			Open Area:	50%
			Max Width:	5'
			Load Bar Centers:	1.2"
			Approx. Weight:	9.92 lbs/ft ²
Panel Sizes Available: Please Call			Cross Bar Spacing	6"

◆ Heavy Duty 2 1/2" Deep 60% open (MCHD6025)

Engineering Properties Per Foot of Width:		A=12.0 in ²	I=6.25 in ⁴	S=5.0 in ³
		# of Bars:	8	
		Bar Depth:	2.5"	
		Open Area:	60%	
		Max Width:	5'	
		Load Bar Centers:	1.5"	
Stocked Item	Panel Sizes Available: Please Call	Approx. Weight:	10.71 lbs/ft ²	
		Cross Bar Spacing	3"	

◆ Allowable Spans for Vehicular Traffic (inches)

Vehicle	MCHD6010	MCHD6015	MCHD6020	MCHD6025
 AASHTO Standard Truck (32,000 lbs)	N/A	12"	22"	26"
 Automobile (5,000 lbs)	18"	24"	40"	56"
 5 Ton Capacity Forklift	N/A	12"	18"	22"
 3 Ton Capacity Forklift	N/A	10"	18"	21"
 1 Ton Capacity Forklift	N/A	14"	24"	32"

Notes:

- 1) Load is carried by the grating load bars immediately under wheel + two additional load bars, one on each side of the wheel.
- 2) Allowable span is based on a maximum deflection and a factor of safety of 3.0. The other criteria may be required by certain construction codes.

Pultruded Grating Deflection Tables



Pultruded Heavy Duty Grating: Uniform Load Deflection Table:

SPAN in inches	STYLE	LOAD IN lbs/ft OF WIDTH								Max Rec. Load	Apparent El x 10 ⁻⁶ (LB-IN ²)
		50	100	150	200	250	500	1000	2000		
12	MCHD4010 &	0.00	0.00	0.00	0.00	0.01	0.01	0.02	0.04	11,276	1.06
	MCHD5010	0.00	0.00	0.00	0.00	0.01	0.01	0.02	0.05	9,318	0.90
	MCHD6010	0.00	0.00	0.00	0.01	0.01	0.02	0.03	0.06	7,548	0.72
	MCHD4015 &	<0.01	<0.01	<0.01	<0.01	0.00	0.00	0.00	0.01	29,744	5.40
	MCHD5015	<0.01	<0.01	0.00	0.00	0.00	0.00	0.01	0.01	23,452	3.27
	MCHD6015	<0.01	<0.01	0.00	0.00	0.00	0.00	0.01	0.02	18,763	2.40
	MCHD4020 &	<0.01	<0.01	<0.01	<0.01	<0.01	0.00	0.00	0.01	65,109	6.92
	MCHD5020	<0.01	<0.01	<0.01	<0.01	0.00	0.00	0.00	0.01	52,713	5.14
	MCHD6020	<0.01	<0.01	<0.01	0.00	0.00	0.00	0.00	0.01	40,497	4.56
	MCHD4025 &	<0.01	<0.01	<0.01	<0.01	<0.01	0.00	0.00	0.01	91,623	8.56
	MCHD5025	<0.01	<0.01	<0.01	<0.01	<0.01	0.00	0.00	0.01	72,465	6.02
	MCHD6025	<0.01	<0.01	<0.01	<0.01	0.00	0.00	0.00	0.01	61,338	5.21
18	MCHD4010 &	0.00	0.01	0.01	0.01	0.02	0.03	0.06	0.12	7,517	1.87
	MCHD5010	0.00	0.01	0.01	0.01	0.02	0.03	0.07	0.13	6,212	1.67
	MCHD6010	0.00	0.01	0.01	0.02	0.02	0.04	0.08	0.16	5,032	1.42
	MCHD4015 &	<0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.03	19,830	8.84
	MCHD5015	<0.01	0.00	0.00	0.00	0.00	0.01	0.02	0.03	15,635	6.94
	MCHD6015	0.00	0.00	0.00	0.00	0.01	0.01	0.02	0.04	12,509	5.50
	MCHD4020 &	<0.01	<0.01	0.00	0.00	0.00	0.00	0.01	0.02	43,406	12.80
	MCHD5020	<0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.03	35,142	9.10
	MCHD6020	<0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.03	27,297	8.34
	MCHD4025 &	<0.01	<0.01	0.00	0.00	0.00	0.00	0.01	0.01	61,082	15.20
	MCHD5025	<0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.02	48,310	12.03
	MCHD6025	<0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.02	40,892	9.85
24	MCHD4010 &	0.01	0.01	0.02	0.03	0.04	0.07	0.15	0.30	5,638	2.44
	MCHD5010	0.01	0.02	0.02	0.03	0.04	0.08	0.17	0.33	4,659	2.18
	MCHD6010	0.01	0.02	0.03	0.04	0.05	0.10	0.20	0.40	3,774	1.82
	MCHD4015 &	0.00	0.00	0.01	0.01	0.01	0.02	0.03	0.07	14,872	10.56
	MCHD5015	0.00	0.00	0.01	0.01	0.01	0.02	0.04	0.08	11,726	8.71
	MCHD6015	0.00	0.01	0.01	0.01	0.01	0.03	0.05	0.10	9,382	6.90
	MCHD4020 &	0.00	0.00	0.00	0.00	0.01	0.01	0.02	0.04	32,554	16.80
	MCHD5020	0.00	0.00	0.00	0.01	0.01	0.01	0.03	0.06	26,357	12.90
	MCHD6020	0.00	0.00	0.00	0.01	0.01	0.01	0.03	0.06	20,473	12.70
	MCHD4025 &	<0.01	0.00	0.00	0.00	0.00	0.01	0.02	0.03	45,812	21.00
	MCHD5025	0.00	0.00	0.00	0.00	0.00	0.01	0.02	0.04	36,232	18.20
	MCHD6025	0.00	0.00	0.00	0.00	0.01	0.01	0.02	0.05	30,669	14.50
30	MCHD4010 &	0.02	0.03	0.05	0.06	0.08	0.16	0.31		3,608	2.79
	MCHD5010	0.02	0.04	0.05	0.07	0.09	0.18	0.36		2,982	2.42
	MCHD6010	0.02	0.04	0.07	0.09	0.11	0.22	0.44		2,415	1.98
	MCHD4015 &	0.00	0.01	0.01	0.02	0.02	0.04	0.08	0.16	11,898	11.17
	MCHD5015	0.00	0.01	0.01	0.02	0.02	0.05	0.10	0.19	9,381	9.22
	MCHD6015	0.01	0.01	0.02	0.02	0.03	0.06	0.12	0.24	7,505	7.30
	MCHD4020 &	0.00	0.00	0.01	0.01	0.01	0.02	0.05	0.09	26,044	19.50
	MCHD5020	0.00	0.01	0.01	0.01	0.01	0.03	0.05	0.11	21,086	16.20
	MCHD6020	0.00	0.01	0.01	0.01	0.01	0.03	0.06	0.12	16,378	14.70
	MCHD4025 &	0.00	0.00	0.00	0.01	0.01	0.02	0.03	0.07	36,649	26.80
	MCHD5025	0.00	0.00	0.01	0.01	0.01	0.02	0.04	0.07	28,986	24.50
	MCHD6025	0.00	0.00	0.01	0.01	0.01	0.02	0.05	0.09	24,535	19.50

Pultruded Grating Deflection Tables



**Pultruded Heavy Duty Grating:
Uniform Load Deflection Table:**

SPAN in inches	STYLE	LOAD IN lbs/ft OF WIDTH								Max Rec. Load	Apparent El x 10 ⁶ (LB-IN ²)
		50	100	150	200	250	500	1000	2000		
36	MCHD4010	0.03	0.06	0.09	0.12	0.15	0.31			2,506	2.98
	MCHD5010	0.04	0.07	0.11	0.14	0.18	0.36			2,071	2.56
	MCHD6010	0.04	0.09	0.13	0.17	0.22	0.43			1,677	2.10
	MCHD4015	0.01	0.02	0.02	0.03	0.04	0.08	0.16	0.32	8,362	11.55
	MCHD5015	0.01	0.02	0.03	0.04	0.05	0.10	0.19	0.38	6,514	9.53
	MCHD6015	0.01	0.02	0.04	0.05	0.06	0.12	0.24	0.48	5,212	7.55
	MCHD4020	0.00	0.01	0.01	0.02	0.02	0.04	0.08	0.17	18,086	21.60
	MCHD5020	0.00	0.01	0.01	0.02	0.02	0.05	0.10	0.19	14,643	18.83
	MCHD6020	0.01	0.01	0.02	0.02	0.03	0.06	0.11	0.22	11,374	16.83
	MCHD4025	0.00	0.01	0.01	0.01	0.01	0.03	0.06	0.11	30,541	32.20
	MCHD5025	0.00	0.01	0.01	0.01	0.02	0.03	0.06	0.13	24,155	28.80
	MCHD6025	0.00	0.01	0.01	0.02	0.02	0.04	0.08	0.16	20,446	23.25
42	MCHD4010	0.05	0.11	0.16	0.22	0.27				1,841	3.10
	MCHD5010	0.06	0.13	0.19	0.26	0.32				1,521	2.60
	MCHD6010	0.08	0.16	0.24	0.32	0.39				1,232	2.14
	MCHD4015	0.01	0.03	0.04	0.06	0.07	0.14	0.29		6,070	11.78
	MCHD5015	0.02	0.03	0.05	0.07	0.09	0.17	0.35		4,786	9.72
	MCHD6015	0.02	0.04	0.07	0.09	0.01	0.22	0.44		3,829	7.70
	MCHD4020	0.01	0.01	0.02	0.03	0.04	0.07	0.15	0.29	13,288	23.00
	MCHD5020	0.01	0.02	0.03	0.03	0.04	0.08	0.17	0.34	10,785	20.10
	MCHD6020	0.01	0.02	0.03	0.04	0.05	0.10	0.20	0.39	8,356	17.10
	MCHD4025	0.00	0.01	0.01	0.02	0.02	0.05	0.09	0.19	22,438	35.90
	MCHD5025	0.01	0.01	0.02	0.02	0.03	0.05	0.11	0.22	17,746	31.20
	MCHD6025	0.01	0.01	0.02	0.03	0.03	0.07	0.13	0.26	15,021	25.50
48	MCHD4010	0.09	0.18	0.27	0.37	0.46				1,409	3.15
	MCHD5010	0.11	0.22	0.33	0.44					1,165	2.63
	MCHD6010	0.13	0.27	0.40						943	2.16
	MCHD4015	0.02	0.05	0.07	0.10	0.12	0.24	0.48		4,648	12.09
	MCHD5015	0.03	0.06	0.09	0.12	0.14	0.29			3,664	9.97
	MCHD6015	0.04	0.07	0.11	0.15	0.18	0.36			2,932	7.90
	MCHD4020	0.01	0.02	0.04	0.05	0.06	0.12	0.24	0.48	10,173	23.90
	MCHD5020	0.01	0.03	0.04	0.06	0.07	0.14	0.28		8,237	20.67
	MCHD6020	0.02	0.03	0.05	0.07	0.08	0.16	0.33		6,398	17.60
	MCHD4025	0.01	0.02	0.02	0.03	0.04	0.08	0.15	0.30	17,179	38.40
	MCHD5025	0.01	0.02	0.03	0.03	0.04	0.09	0.17	0.35	13,587	33.10
	MCHD6025	0.01	0.02	0.03	0.04	0.05	0.11	0.22	0.43	11,501	26.50
54	MCHD4010	0.15	0.29	0.44						1,114	3.18
	MCHD5010	0.17	0.35							920	2.65
	MCHD6010	0.21	0.42							745	2.19
	MCHD4015	0.04	0.08	0.11	0.15	0.19	0.38			3,672	12.25
	MCHD5015	0.05	0.09	0.14	0.18	0.23	0.46			2,895	10.11
	MCHD6015	0.06	0.12	0.17	0.23	0.29				2,317	8.01
	MCHD4020	0.02	0.04	0.06	0.08	0.09	0.19	0.38		8,038	24.34
	MCHD5020	0.02	0.04	0.07	0.09	0.11	0.22	0.44		6,508	20.80
	MCHD6020	0.03	0.05	0.08	0.10	0.13	0.26			5,055	17.70
	MCHD4025	0.01	0.02	0.03	0.05	0.06	0.11	0.23	0.46	13,574	40.50
	MCHD5025	0.01	0.03	0.04	0.05	0.07	0.13	0.27		10,736	34.50
	MCHD6025	0.02	0.03	0.05	0.07	0.08	0.17	0.34		9,087	27.30

Pultruded Grating Deflection Tables

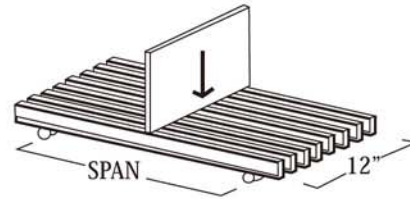


**Pultruded Heavy Duty Grating:
Uniform Load Deflection Table:**



SPAN in inches	STYLE	LOAD IN lbs/ft OF WIDTH								Max Rec. Load	Apparent EI x 10 ⁶ (LB-IN ²)
		50	100	150	200	250	500	1000	2000		
60	MCHD4010 ♿	0.22	0.44							902	3.20
	MCHD5010	0.26								745	2.67
	MCHD6010	0.32								604	2.20
	MCHD4015 ♿	0.06	0.11	0.17	0.23	0.28				2,974	12.42
	MCHD5015	0.07	0.14	0.21	0.27	0.34				2,345	10.26
	MCHD6015	0.09	0.17	0.26	0.35	0.43				1,878	8.13
	MCHD4020 ♿	0.03	0.06	0.09	0.11	0.14	0.28			6,511	24.69
	MCHD5020	0.03	0.07	0.10	0.13	0.17	0.33			5,271	21.02
	MCHD6020	0.04	0.08	0.12	0.16	0.20	0.40			4,095	17.78
	MCHD4025 ♿	0.02	0.03	0.05	0.07	0.09	0.17	0.34		10,995	41.20
	MCHD5025	0.02	0.04	0.06	0.08	0.10	0.20	0.40		8,696	35.10
	MCHD6025	0.03	0.05	0.08	0.10	0.13	0.26	0.51		7,360	27.50
66	MCHD4015 ♿	0.08	0.16	0.25	0.33	0.41				2,458	12.49
	MCHD5015	0.10	0.20	0.30	0.40	0.50				1,938	10.30
	MCHD6015	0.13	0.25	0.38	0.50					1,551	8.16
	MCHD4020 ♿	0.04	0.08	0.12	0.16	0.21	0.41			5,381	25.00
	MCHD5020	0.05	0.10	0.15	0.20	0.24	0.49			4,357	21.06
	MCHD6020	0.06	0.12	0.17	0.23	0.29				3,384	17.88
	MCHD4025 ♿	0.02	0.05	0.07	0.10	0.12	0.25	0.49		9,087	41.90
	MCHD5025	0.03	0.06	0.09	0.12	0.14	0.29			7,187	35.60
	MCHD6025	0.04	0.07	0.11	0.15	0.19	0.37			6,083	27.70
72	MCHD4015 ♿	0.12	0.23	0.35	0.47					2,066	12.52
	MCHD5015	0.14	0.28	0.42						1,629	10.33
	MCHD6015	0.18	0.36							1,303	8.18
	MCHD4020 ♿	0.06	0.12	0.17	0.23	0.29				4,522	25.33
	MCHD5020	0.07	0.14	0.21	0.28	0.35				3,661	21.12
	MCHD6020	0.08	0.16	0.24	0.32	0.40				2,844	18.02
	MCHD4025 ♿	0.03	0.07	0.10	0.14	0.17	0.34			7,635	42.60
	MCHD5025	0.04	0.08	0.12	0.16	0.20	0.41			6,039	35.80
	MCHD6025	0.05	0.10	0.16	0.21	0.26				5,111	27.90
78	MCHD4020 ♿	0.08	0.16	0.24	0.32	0.40				3,835	25.40
	MCHD5020	0.09	0.19	0.28	0.38	0.47				3,119	21.20
	MCHD6020	0.11	0.22	0.33	0.44					2,423	18.10
	MCHD4025 ♿	0.05	0.09	0.14	0.19	0.23	0.47			6,506	42.85
	MCHD5025	0.06	0.11	0.17	0.22	0.28				5,145	36.00
	MCHD6025	0.07	0.14	0.21	0.29	0.36				4,355	28.10
84	MCHD4020 ♿	0.11	0.21	0.32	0.42					3,322	25.60
	MCHD5020	0.13	0.25	0.38	0.51					2,689	21.30
	MCHD6020	0.15	0.30	0.45						2,089	18.20
	MCHD4025 ♿	0.06	0.13	0.19	0.25	0.31				5,610	42.90
	MCHD5025	0.07	0.15	0.22	0.30	0.37				4,437	36.20
	MCHD6025	0.10	0.19	0.29	0.38	0.48				3,755	28.30
90	MCHD4025 ♿	0.08	0.17	0.25	0.33	0.41				4,887	42.98
	MCHD5025	0.10	0.20	0.29	0.39	0.49				3,865	36.40
	MCHD6025	0.12	0.25	0.37	0.50					3,271	28.50
96	MCHD4025 ♿	0.11	0.21	0.32	0.43					4,295	43.10
	MCHD5025	0.13	0.25	0.38	0.50					3,397	36.60
	MCHD6025	0.16	0.32	0.48						2,875	28.70
102	MCHD4025 ♿	0.14	0.27	0.41						3,804	43.20
	MCHD5025	0.16	0.32	0.48						3,009	36.80
	MCHD6025	0.20	0.41							2,547	28.90

Pultruded Grating Deflection Tables



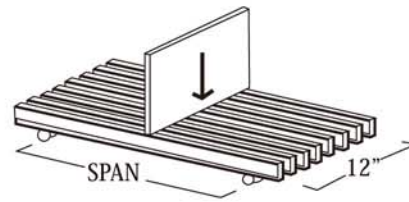
**Pultruded Heavy Duty Grating:
Concentrated Line Load Deflection Table:**

SPAN in inches	STYLE	LOAD IN lbs/ft OF WIDTH								Max Rec. Load	Apparent El x 10 ⁶ (LB-IN ²)
		50	100	150	200	250	500	1000	2000		
12	MCHD4010 &	0.00	0.00	0.01	0.01	0.01	0.02	0.03	0.07	11,275	1.06
	MCHD5010	0.00	0.00	0.01	0.01	0.01	0.02	0.04	0.08	9,318	0.90
	MCHD6010	0.00	0.01	0.01	0.01	0.01	0.03	0.05	0.10	7,548	0.72
	MCHD40 15 &	<0.01	<0.01	0.00	0.00	0.00	0.00	0.01	0.01	25,696	5.40
	MCHD5015	<0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.02	21,776	3.27
	MCHD6015	<0.01	0.00	0.00	0.00	0.00	0.01	0.02	0.03	17,720	2.40
	MCHD4020 &	<0.01	<0.01	<0.01	0.01	0.00	0.00	0.01	0.01	42,000	6.92
	MCHD5020	<0.01	<0.01	0.00	0.00	0.00	0.00	0.01	0.01	36,036	5.14
	MCHD6020	<0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.02	28,821	3.56
	MCHD4025 &	<0.01	<0.01	<0.01	<0.01	0.00	0.00	0.00	0.01	125,001	8.56
	MCHD5025	<0.01	<0.01	<0.01	0.00	0.00	0.00	0.00	0.01	104,168	6.02
	MCHD6025	<0.01	<0.01	0.00	0.00	0.00	0.00	0.00	0.01	83,334	5.21
18	MCHD4010 &	0.00	0.01	0.01	0.01	0.02	0.03	0.07	0.13	7,517	1.87
	MCHD5010	0.00	0.01	0.01	0.01	0.02	0.04	0.07	0.14	6,216	1.69
	MCHD6010	0.00	0.01	0.01	0.02	0.02	0.04	0.09	0.17	5,032	1.42
	MCHD40 15 &	<0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.03	17,130	8.84
	MCHD5015	<0.01	0.00	0.00	0.00	0.00	0.01	0.02	0.03	14,517	6.94
	MCHD6015	0.01	0.00	0.00	0.00	0.01	0.01	0.02	0.01	11,813	5.50
	MCHD4020 &	<0.01	<0.01	0.00	0.00	0.00	0.00	0.01	0.02	28,000	12.80
	MCHD5020	<0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.03	24,024	9.10
	MCHD6020	<0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.03	19,214	8.30
	MCHD4025 &	<0.01	<0.01	0.00	0.00	0.00	0.00	0.00	0.02	83,334	15.20
	MCHD5025	<0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.02	69,445	12.03
	MCHD6025	<0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.02	55,556	9.85
24	MCHD4010 &	0.01	0.01	0.02	0.02	0.03	0.06	0.12	0.24	5,637	2.44
	MCHD5010	0.01	0.01	0.02	0.03	0.03	0.07	0.13	0.26	4,659	2.18
	MCHD6010	0.01	0.02	0.02	0.03	0.04	0.08	0.16	0.32	3,774	1.82
	MCHD40 15 &	0.00	0.00	0.00	0.01	0.01	0.01	0.03	0.05	12,848	10.56
	MCHD5015	0.00	0.00	0.00	0.01	0.01	0.02	0.03	0.07	10,888	8.71
	MCHD6015	0.00	0.00	0.01	0.01	0.01	0.02	0.04	0.08	8,860	6.90
	MCHD4020 &	<0.01	0.00	0.00	0.00	0.00	0.01	0.02	0.08	21,000	16.80
	MCHD5020	0.00	0.00	0.00	0.00	0.01	0.01	0.02	0.04	18,018	12.90
	MCHD6020	0.00	0.00	0.00	0.00	0.01	0.01	0.02	0.05	14,411	12.30
	MCHD4025 &	<0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.03	62,501	21.00
	MCHD5025	<0.01	0.00	0.00	0.00	0.00	0.01	0.02	0.03	52,084	18.20
	MCHD6025	<0.01	0.00	0.00	0.00	0.00	0.01	0.02	0.04	41,667	14.50
30	MCHD4010 &	0.01	0.02	0.03	0.04	0.05	0.10	0.20	0.40	4,510	2.79
	MCHD5010	0.01	0.02	0.03	0.05	0.06	0.12	0.23	0.46	3,727	2.42
	MCHD6010	0.01	0.03	0.04	0.06	0.07	0.14	0.28		3,019	1.98
	MCHD40 15 &	0.00	0.01	0.01	0.01	0.01	0.03	0.05	0.10	10,278	11.17
	MCHD5015	0.00	0.01	0.01	0.01	0.02	0.03	0.06	0.12	8,710	9.22
	MCHD6015	0.00	0.01	0.01	0.02	0.02	0.04	0.08	0.15	7,088	7.30
	MCHD4020 &	0.00	0.00	0.00	0.01	0.01	0.01	0.03	0.06	16,800	19.50
	MCHD5020	0.00	0.00	0.01	0.01	0.01	0.02	0.03	0.07	14,414	16.20
	MCHD6020	0.00	0.00	0.01	0.01	0.01	0.02	0.04	0.08	11,528	14.70
	MCHD4025 &	0.00	0.00	0.00	0.00	0.01	0.01	0.02	0.04	50,000	26.80
	MCHD5025	0.00	0.00	0.00	0.00	0.01	0.01	0.02	0.05	41,667	24.50
	MCHD6025	0.00	0.00	0.00	0.01	0.01	0.01	0.03	0.06	33,334	19.50

Pultruded Grating Deflection Tables

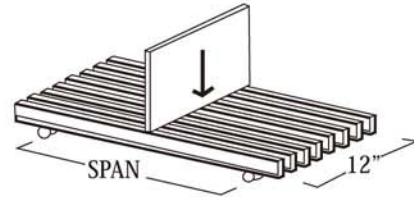


**Pultruded Heavy Duty Grating:
Concentrated Line Load Deflection Table:**



SPAN in inches	STYLE	LOAD IN lbs/ft OF WIDTH								Max Rec. Load	Apparent El x 10 ⁶ (LB-IN ²)
		50	100	150	200	250	500	1000	2000		
36	MCHD4010	0.02	0.03	0.05	0.07	0.08	0.16	0.33		3,758	2.98
	MCHD5010	0.02	0.04	0.06	0.08	0.09	0.19	0.38		3,106	2.56
	MCHD6010	0.02	0.05	0.07	0.09	0.12	0.23	0.46		2,516	2.10
	MCHD40 15	0.00	0.01	0.01	0.02	0.02	0.04	0.08	0.17	8,565	11.55
	MCHD5015	0.01	0.01	0.02	0.02	0.03	0.05	0.10	0.20	7,259	9.53
	MCHD6015	0.01	0.01	0.02	0.03	0.03	0.06	0.13	0.26	5,907	7.55
	MCHD4020	0.00	0.00	0.01	0.01	0.01	0.02	0.05	0.09	14,000	21.60
	MCHD5020	0.00	0.01	0.01	0.01	0.01	0.03	0.05	0.10	12,012	18.83
	MCHD6020	0.00	0.01	0.01	0.01	0.01	0.03	0.06	0.12	9,607	16.30
	MCHD4025	0.00	0.00	0.00	0.01	0.01	0.02	0.03	0.06	41,667	32.20
	MCHD5025	0.00	0.00	0.01	0.01	0.01	0.02	0.03	0.07	34,723	28.80
	MCHD6025	0.00	0.00	0.01	0.01	0.01	0.02	0.04	0.08	27,778	23.25
42	MCHD4010	0.02	0.05	0.07	0.10	0.12	0.25	0.50		2,221	3.10
	MCHD5010	0.03	0.06	0.09	0.12	0.15	0.30			2,662	2.60
	MCHD6010	0.04	0.07	0.11	0.14	0.18	0.36			1,156	2.14
	MCHD40 15	0.01	0.01	0.02	0.03	0.03	0.07	0.13	0.26	7,342	11.78
	MCHD5015	0.01	0.02	0.02	0.03	0.04	0.08	0.16	0.32	6,222	9.72
	MCHD6015	0.01	0.02	0.03	0.04	0.05	0.10	0.20	0.40	5,063	7.70
	MCHD4020	0.00	0.01	0.01	0.01	0.02	0.03	0.07	0.13	12,000	23.00
	MCHD5020	0.00	0.01	0.01	0.02	0.02	0.04	0.08	0.15	10,296	20.10
	MCHD6020	0.00	0.01	0.01	0.02	0.02	0.05	0.09	0.18	8,235	17.10
	MCHD4025	0.00	0.00	0.01	0.01	0.01	0.02	0.04	0.09	35,714	35.90
	MCHD5025	0.00	0.00	0.01	0.01	0.01	0.02	0.05	0.10	29,762	31.20
	MCHD6025	0.00	0.01	0.01	0.01	0.02	0.03	0.06	0.12	23,810	25.50
48	MCHD4010	0.04	0.07	0.11	0.15	0.18	0.37			2,819	3.15
	MCHD5010	0.04	0.09	0.13	0.18	0.22	0.44			2,330	2.63
	MCHD6010	0.05	0.11	0.16	0.21	0.27				1,887	2.16
	MCHD40 15	0.01	0.02	0.03	0.04	0.05	0.10	0.19	0.38	6,424	12.09
	MCHD5015	0.01	0.02	0.03	0.05	0.06	0.12	0.23	0.46	5,444	9.97
	MCHD6015	0.01	0.03	0.04	0.06	0.07	0.15	0.29		4,430	7.90
	MCHD4020	0.00	0.01	0.01	0.02	0.02	0.05	0.10	0.19	10,500	23.90
	MCHD5020	0.01	0.01	0.02	0.02	0.03	0.06	0.11	0.22	9,009	20.67
	MCHD6020	0.01	0.01	0.02	0.03	0.03	0.07	0.13	0.26	7,205	17.60
	MCHD4025	0.00	0.01	0.01	0.01	0.02	0.03	0.06	0.12	31,250	38.40
	MCHD5025	0.00	0.01	0.01	0.01	0.02	0.03	0.07	0.14	26,042	33.10
	MCHD6025	0.00	0.01	0.01	0.02	0.02	0.04	0.09	0.17	20,834	26.50
54	MCHD4010	0.05	0.10	0.15	0.21	0.26				2,506	3.18
	MCHD5010	0.06	0.12	0.19	0.25	0.31				2,071	2.65
	MCHD6010	0.07	0.15	0.22	0.30	0.37				1,677	2.19
	MCHD40 15	0.01	0.03	0.04	0.05	0.07	0.13	0.27		5,710	12.25
	MCHD5015	0.02	0.03	0.05	0.06	0.08	0.16	0.32		4,839	10.11
	MCHD6015	0.02	0.04	0.06	0.08	0.10	0.20	0.41		3,938	8.01
	MCHD4020	0.01	0.01	0.02	0.03	0.03	0.07	0.13	0.27	9,333	24.34
	MCHD5020	0.01	0.02	0.02	0.03	0.04	0.08	0.16	0.32	8,008	20.80
	MCHD6020	0.01	0.02	0.03	0.04	0.05	0.09	0.19	0.37	6,405	17.70
	MCHD4025	0.00	0.01	0.01	0.02	0.02	0.04	0.08	0.16	27,778	40.50
	MCHD5025	0.00	0.01	0.01	0.02	0.02	0.05	0.10	0.19	23,148	34.50
	MCHD6025	0.01	0.01	0.02	0.02	0.03	0.06	0.12	0.24	18,519	27.30

Pultruded Grating Deflection Tables



**Pultruded Heavy Duty Grating:
Concentrated Line Load Deflection Table:**

SPAN in inches	STYLE	LOAD IN lbs/ft OF WIDTH								Max Rec. Load	Apparent El x 10 ⁶ (LB-IN ²)
		50	100	150	200	250	500	1000	2000		
60	MCHD4010 &	0.07	0.14	0.21	0.28	0.35				2,255	3.20
	MCHD5010	0.08	0.17	0.25	0.34	0.42				1,864	2.67
	MCHD6010	0.10	0.20	0.31	0.41	0.51				1,510	2.20
	MCHD40 15 &	0.02	0.04	0.05	0.07	0.09	0.18	0.36		5,139	12.43
	MCHD5015	0.02	0.04	0.07	0.09	0.11	0.22	0.44		4,355	10.26
	MCHD6015	0.03	0.06	0.08	0.11	0.14	0.28			3,544	8.13
	MCHD4020 &	0.01	0.02	0.03	0.04	0.05	0.09	0.18	0.36	8,400	24.69
	MCHD5020	0.01	0.02	0.03	0.04	0.05	0.11	0.21	0.43	7,207	21.02
	MCHD6020	0.01	0.03	0.04	0.05	0.06	0.13	0.25		5,764	17.78
	MCHD4025 &	0.01	0.01	0.02	0.02	0.03	0.05	0.11	0.22	25,000	41.20
	MCHD5025	0.01	0.01	0.02	0.03	0.03	0.06	0.13	0.26	20,833	35.10
	MCHD6025	0.01	0.01	0.02	0.03	0.04	0.08	0.16	0.33	16,667	27.50
66	MCHD4015 &	0.02	0.05	0.07	0.10	0.12	0.24	0.48		4,672	12.49
	MCHD5015	0.03	0.06	0.09	0.12	0.15	0.29			3,959	10.30
	MCHD6015	0.04	0.07	0.11	0.15	0.18	0.37			3,222	8.16
	MCHD4020 &	0.01	0.02	0.04	0.05	0.06	0.12	0.24	0.48	7,636	25.00
	MCHD5020	0.01	0.03	0.04	0.06	0.07	0.14	0.28		6,552	21.06
	MCHD6020	0.02	0.03	0.05	0.07	0.08	0.17	0.33		5,240	17.88
	MCHD4025 &	0.01	0.01	0.02	0.03	0.04	0.07	0.14	0.29	22,727	41.90
	MCHD5025	0.01	0.02	0.03	0.03	0.04	0.08	0.17	0.34	18,939	35.60
	MCHD6025	0.01	0.02	0.03	0.04	0.05	0.11	0.22	0.43	15,152	27.70
72	MCHD4015 &	0.03	0.06	0.09	0.12	0.16	0.31			4,283	12.52
	MCHD5015	0.04	0.08	0.11	0.15	0.19	0.38			3,629	10.33
	MCHD6015	0.05	0.10	0.14	0.19	0.24	0.48			2,953	8.18
	MCHD4020 &	0.02	0.03	0.05	0.06	0.08	0.15	0.31		7,000	25.33
	MCHD5020	0.02	0.04	0.06	0.07	0.09	0.18	0.37		6,006	21.12
	MCHD6020	0.02	0.04	0.06	0.09	0.11	0.22	0.43		4,804	18.02
	MCHD4025 &	0.01	0.02	0.03	0.04	0.05	0.09	0.18	0.37	20,834	42.60
	MCHD5025	0.01	0.02	0.03	0.04	0.05	0.11	0.22	0.43	17,361	35.80
	MCHD6025	0.01	0.03	0.04	0.06	0.07	0.14	0.28		13,889	27.90
78	MCHD4020 &	0.02	0.04	0.06	0.08	0.10	0.09	0.39		6,462	25.40
	MCHD5020	0.02	0.05	0.07	0.09	0.12	0.23	0.47		5,544	21.20
	MCHD6020	0.03	0.05	0.08	0.11	0.14	0.27			4,434	18.10
	MCHD4025 &	0.01	0.02	0.03	0.05	0.06	0.12	0.23	0.46	19,231	42.85
	MCHD5025	0.01	0.03	0.04	0.05	0.07	0.14	0.27		16,026	36.00
	MCHD6025	0.02	0.04	0.05	0.07	0.09	0.18	0.35		12,821	28.10
84	MCHD4020 &	0.02	0.05	0.07	0.10	0.12	0.24	0.48		6,000	25.60
	MCHD5020	0.03	0.06	0.09	0.12	0.14	0.29			5,148	21.30
	MCHD6020	0.03	0.07	0.10	0.14	0.17	0.34			4,117	18.20
	MCHD4025 &	0.01	0.03	0.04	0.06	0.07	0.14	0.29		17,858	42.90
	MCHD5025	0.02	0.03	0.05	0.07	0.09	0.17	0.34		14,881	36.20
	MCHD6025	0.02	0.04	0.07	0.09	0.11	0.22	0.44		11,905	28.30
90	MCHD4020 &	0.02	0.04	0.05	0.07	0.09	0.18	0.35		16,667	42.98
	MCHD5020	0.02	0.04	0.06	0.08	0.10	0.21	0.42		13,889	36.40
	MCHD6020	0.03	0.05	0.08	0.11	0.13	0.27			11,111	28.50
96	MCHD4025 &	0.02	0.04	0.06	0.09	0.11	0.21	0.43		15,625	43.10
	MCHD5025	0.03	0.05	0.08	0.10	0.13	0.25	0.50		13,021	36.60
	MCHD6025	0.03	0.06	0.10	0.13	0.16	0.32			10,417	28.70
102	MCHD4025 &	0.03	0.05	0.08	0.10	0.13	0.26	0.51		14,706	43.20
	MCHD5025	0.03	0.06	0.09	0.12	0.15	0.30			12,255	36.80
	MCHD6025	0.04	0.08	0.11	0.15	0.19	0.38			9,804	28.90

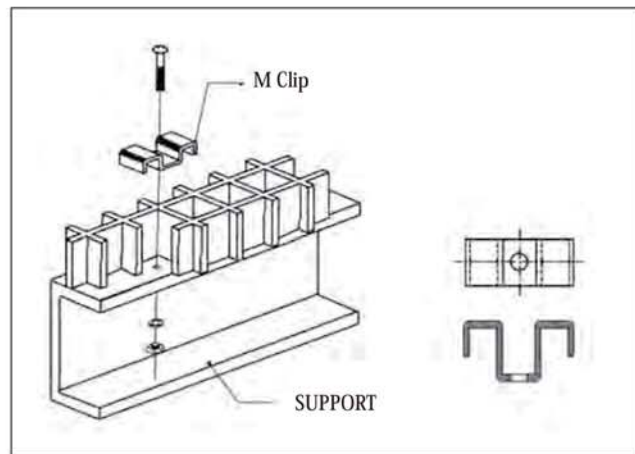


Molded & Pultruded Grating Clips

ZeAll Industries supplies a number of different types of 316SS clips to attach gratings to supporting members. Although the clips are illustrated here with molded grating products, similar clips are available for our pultruded grating as well. Contact Mona Composites for more information.

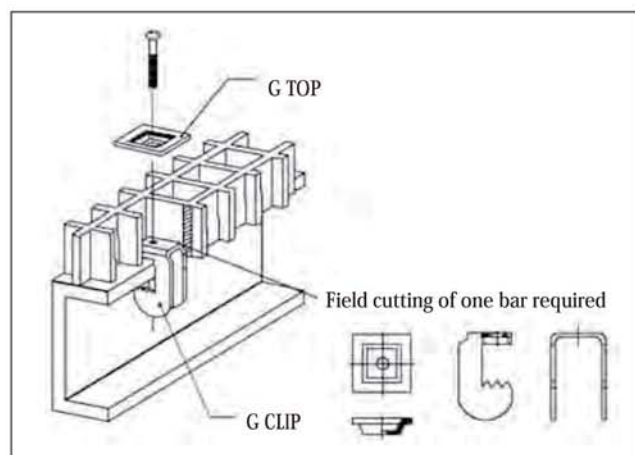
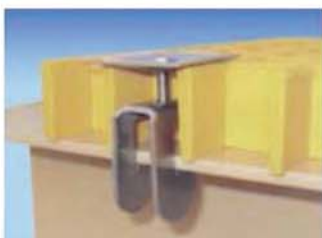
M Clips

"M" Clips clamp two load bars to the supporting member. This provides excellent hold down capability. "M" Clips are recommended for stair treads and most molded and pultruded gratings.

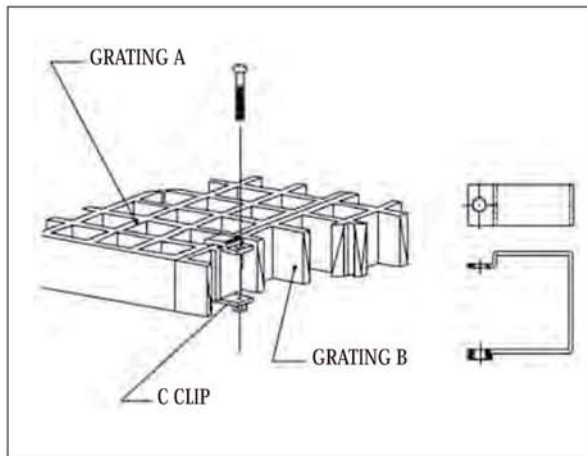


G Clips

"G" Clips are used to attach grating to any structural support without drilling for bolts. This not only provides excellent bidirectional holding capability for molded square mesh grating but also reduces installation labor cost.

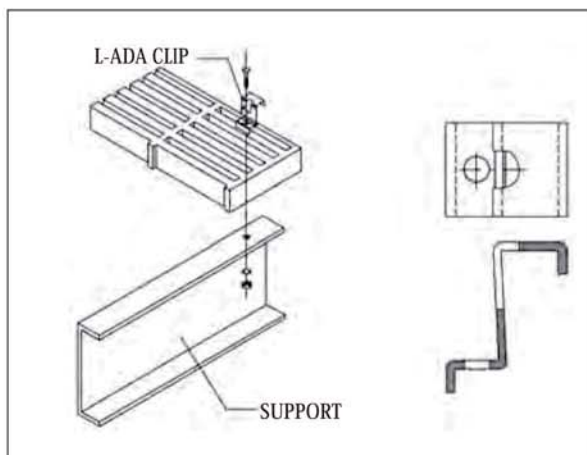
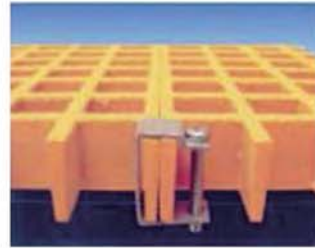


Molded & Pultruded Grating Clips



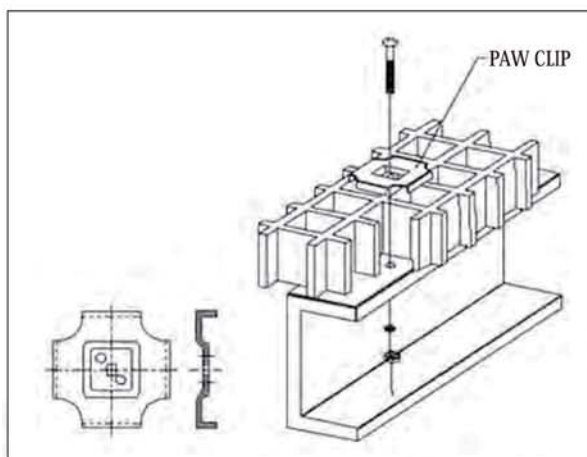
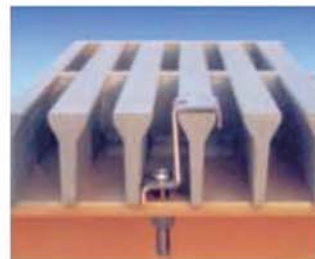
C Clips

"C" Clips are designed to attach two panels of molded gratings together. This helps minimize differential deflections when joints fall between supports.



L Clips

This lighter duty clip is used to hold one load bar to the support for lighter loads. It is available for both molded and pultruded gratings.



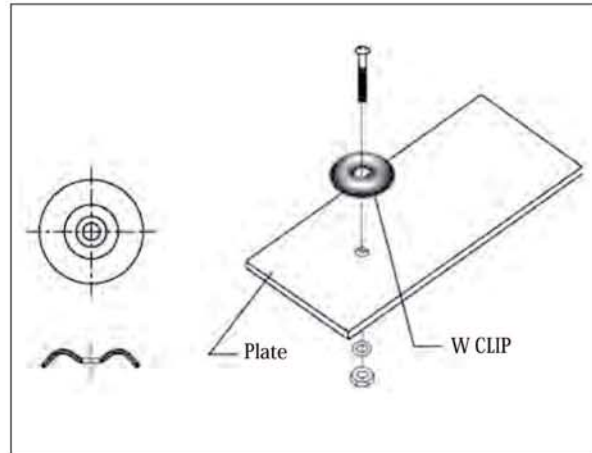
PAW Clips

ZeAll's "PAW" Clip is used to maximize the hold down capacity of square mesh molded grating. These clips clamp 4 load bars to the support, offering excellent bidirectional resistance to loads from seismic or other lateral forces.



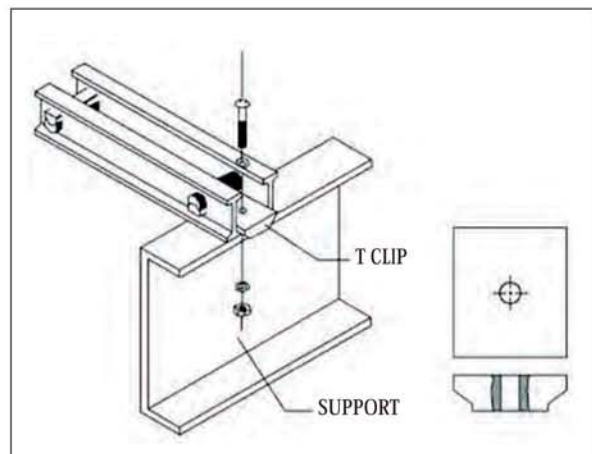
W Clips

"W" Clips are used to attach FRP plates, COVERED Molded or pultruded grating pieces to support members.



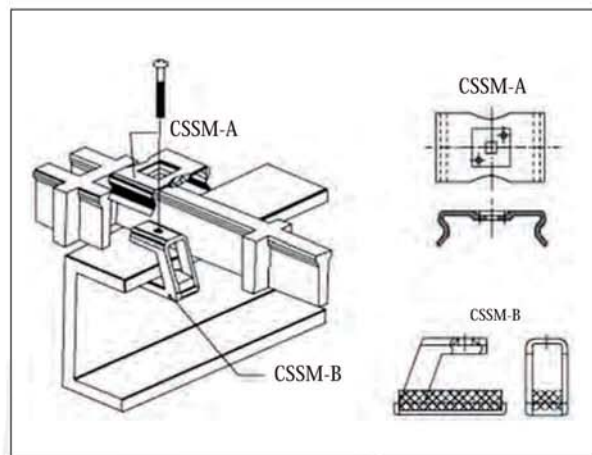
T Clips

"T" Clips are utilized when clips have to be below the pultruded grating surface. These clips should be specified in pairs as shown.

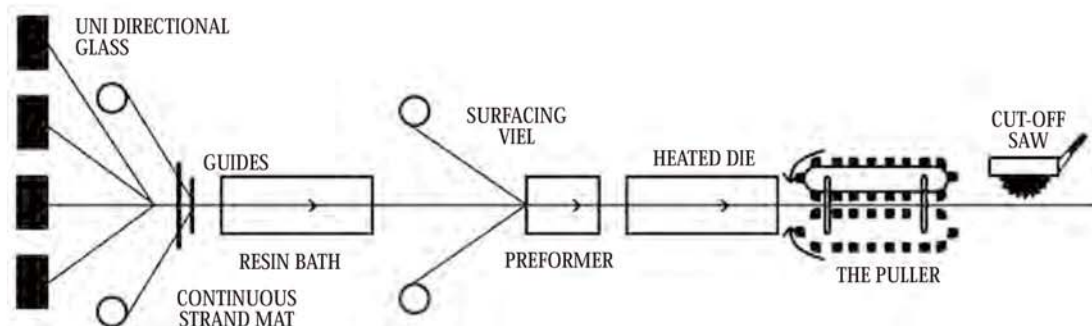


CSSM Clips - Plan A

Developed by our design team, the CSSM system is ideal for applications where vibration is an issue. This is a modified "G" Clip where jaw teeth that can damage steel coatings are replaced with a hard Neoprene Pad. Tightening the clip builds in a "spring" that minimizes loosening.



STRUCTURALS PULTRUSION PROCESS



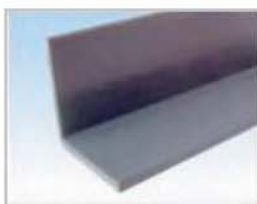
The pultrusion process described in earlier pages is suited to manufacturing structural shapes. It allows structural member to be manufactured to length; the only restriction is transportation limitations.

Continuous glass fibers that enter the process on the left are actually pulled by a tractor (illustrated) or hand-over-hand pullers shown above on the right. The glass bundle of continuous strands is then wrapped with continuous strand mats that provide the transverse strength. The entire reinforcement bundle is pulled into a liquid resin bath (polyester or vinyl ester) and wetted out. After that, the wetted reinforcement package is wrapped in a surfacing veil. That leaves a resin-rich finish on the part and creates both a barrier to corrosion and a smooth finish. The completed package goes into a preformer that roughly shapes the package before it enters the heated die for curing. The die is the exact shape of the final part desired. When the package leaves the die it is over 90% cured and solid. The length of the part required is pulled through the cutoff saw and the process is complete.

STRUCTURAL SHAPES

ZeAll Industries manufactures all standard shapes used for structural projects. They are manufactured in both vinyl ester (standard color is beige) and polyester (standard color is dark gray). Embedment angles are only manufactured in vinyl ester and standard color is dark gray to compliment the color of concrete. Reference *Available Shapes List* on the following page for a complete list of available structural.

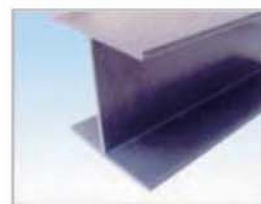
Angle



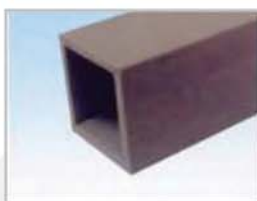
Channel



Wide Flange Beam



Square Tube

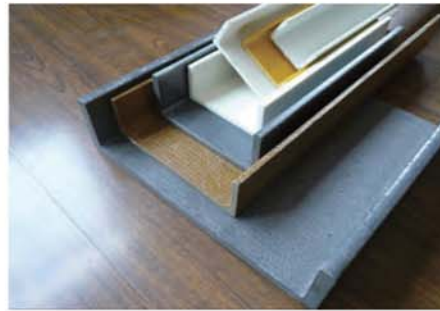


Round Tube



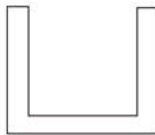
Embedment Angel



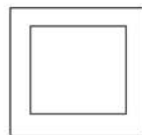
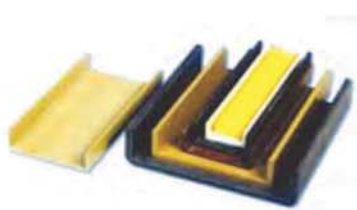


CHANNEL

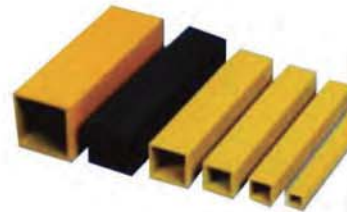
View / Example



Channel



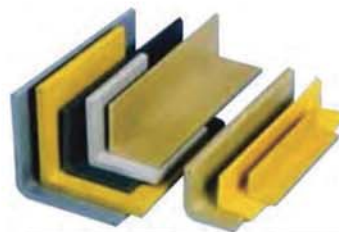
Square tube



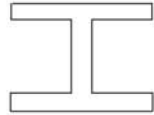
View / Example



Equal Leg Angle



View / Example



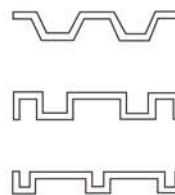
Wide Flange Beam



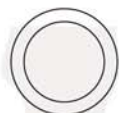
I-Beam



Fluted Round Tube



Kick Plate



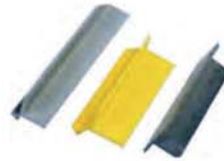
Round Tube



View / Example



Embedment Angle



Flat Sheet



Rectangular Tube



Tread Cover



Solid Square Bar Solid Round Bar



Note: All structural shapes are available in 20' - 0" stock length. Please contact Mona Composites for available sizes & resin. Custom shapes in various lengths, colors, & resin are available upon request.

■ Pultrusion profiles wood grain series



Pultrusion profiles Wood Grain Series

Mona Composites also manufactures FRP shapes that mimic wood grains on its surface. These components are used in furniture manufacturing, decoration, large garden flowerpot, etc.

ZeAll FRPmaterial™ Fiberglass handrail systems offer the same corrosion resistant benefits as its molded & pultruded grating products. Fabricated from pultruded components, fiberglass handrail systems are light weight, easy to install, corrosion resistant, & virtually maintenance free.

ZeAll gratings offers various styles of OSHA compliant handrail systems. These handrail systems can be customized to fit precise needs of a project specification. For industrial applications these handrail systems are available in TWO-RAIL or THREE-RAIL system with Kick Plate. Picketed handrail systems are also available for commercial and residential use. All handrail systems are designed to bear all prevalent building code loads. They can also be customized to carry extensive loads for special circumstances.

Low installation cost, minimal maintenance, ease of installation, and light weight makes fiberglass handrail systems a superior alternative to traditional metallic handrail systems.

Handrail is manufactured with both Isophthalic Polyester and/or Vinyl Ester resin. Standard color is YELLOW. Custom resins matrices and colors are available upon request.

Benefits:

- Light Weight
- Minimal Maintenance
- Corrosion Resistant
- Ease of installation
- Low Electrical Conductivity
- Impact Resistant
- High Strength





ZeAll FRPmaster supplied fiberglass ladders with or without cages for your specific needs. These ladders have been commonly used for a long time throughout various industrial environments whether be a tank, building, and water or wastewater treatment plant.

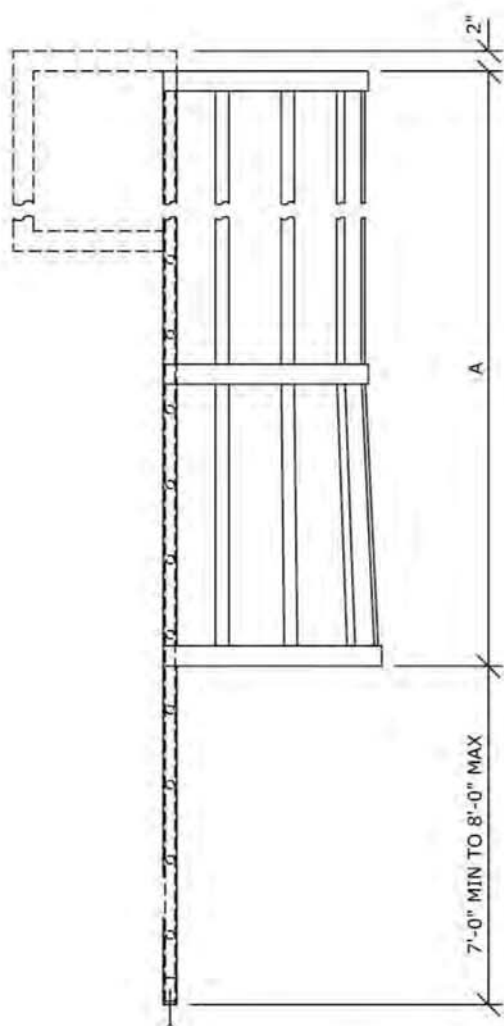
Standard ladders are 18" wide (inside dimension). Rungs are spaced at 12". ZeAll Composites can fabricate ladders per your project requirement for any length. All ladders are designed and fabricated to meet OSHA requirements. Ladders can be shipped fully assembled or in sections to save on freight. Cage components are preferably shipped in a kit for field assembly to avoid bulky damaged shipments. Cage components are predrilled for easy field assembly.

All ladder components are fabricated from pultruded components. Rails are made from pultruded square tube. Rungs are made from fluted round tube to provide non-skid surface. Resin system for standard ladders is Isophthalic polyester. Color is yellow. Custom resin matrices and colors are available upon request.

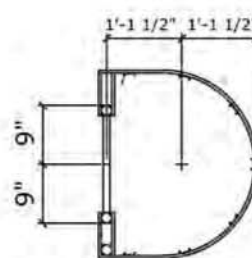
Benefits:

- Light Weight
- Minimal Maintenance
- Corrosion Resistant
- Ease of installation
- Low Electrical Conductivity
- Impact Resistant
- High Strength

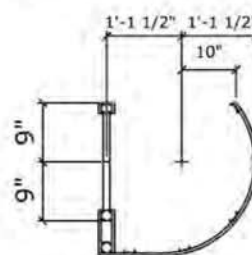




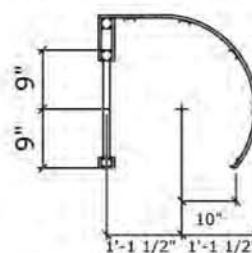
STANDARD LADDER WITH CAGE



WALK-THROUGH

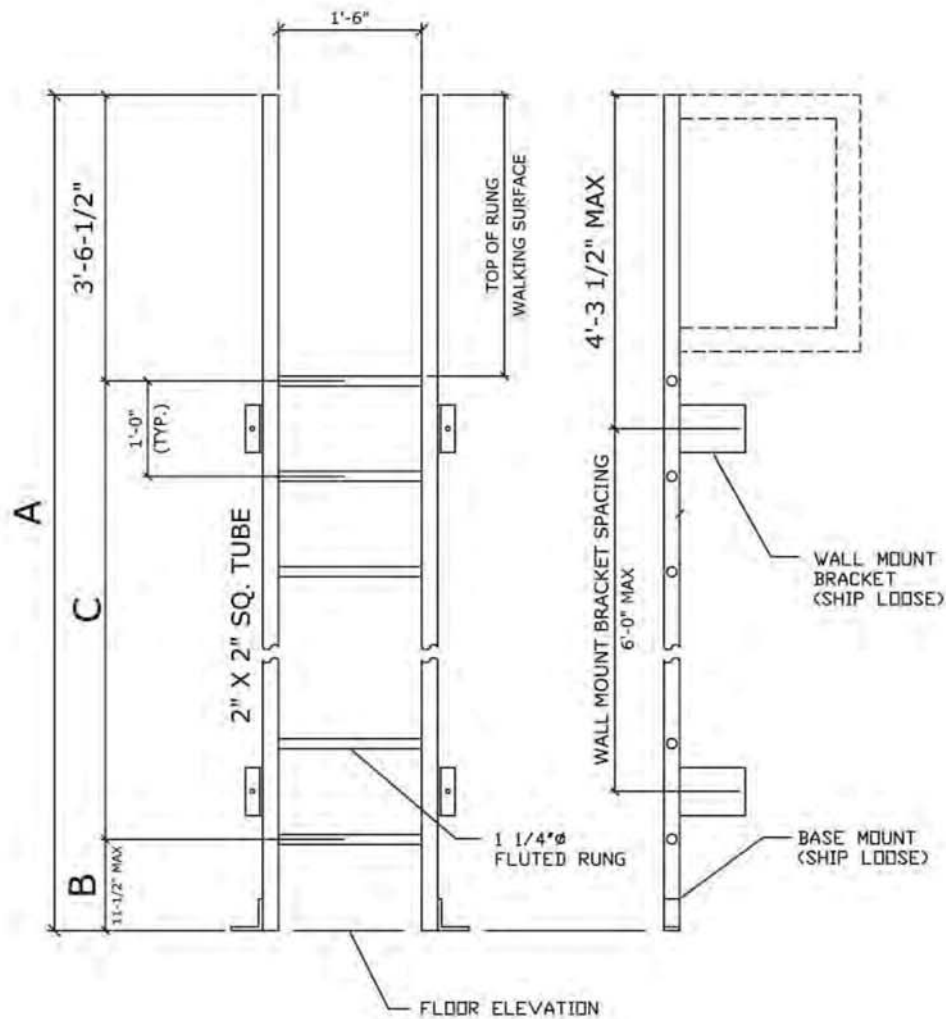


RIGHT ACCESS

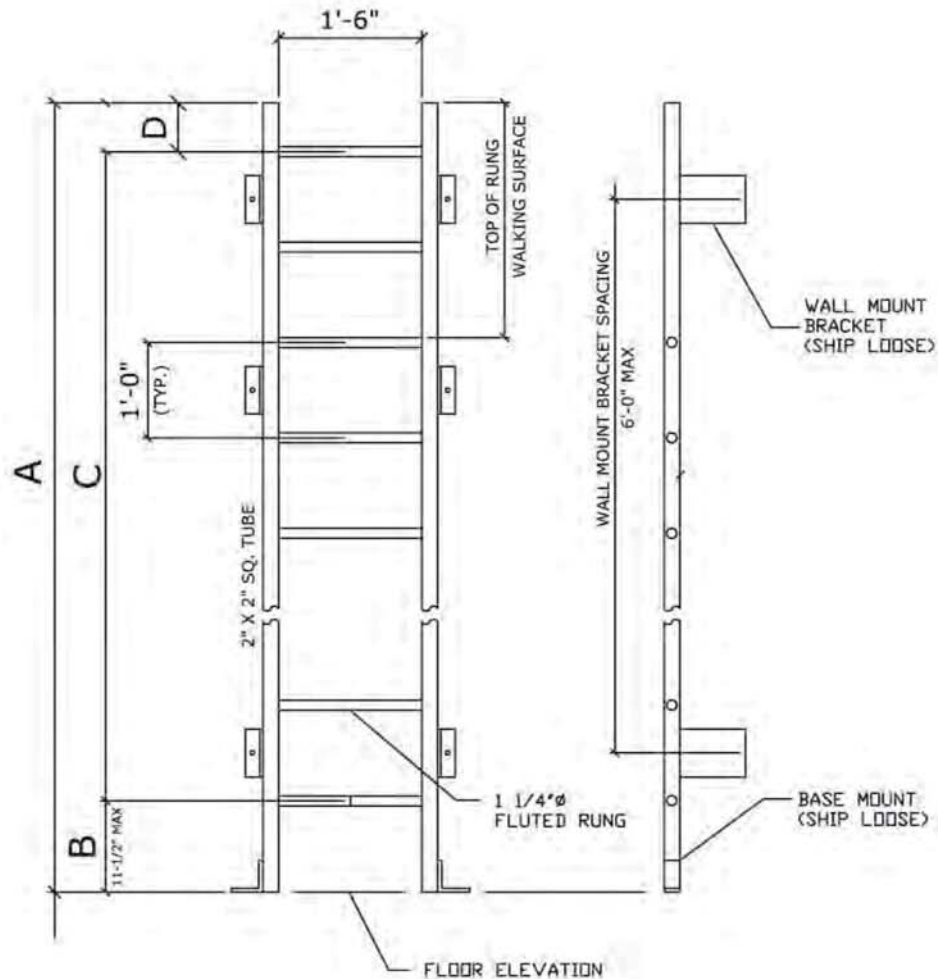


LEFT ACCESS

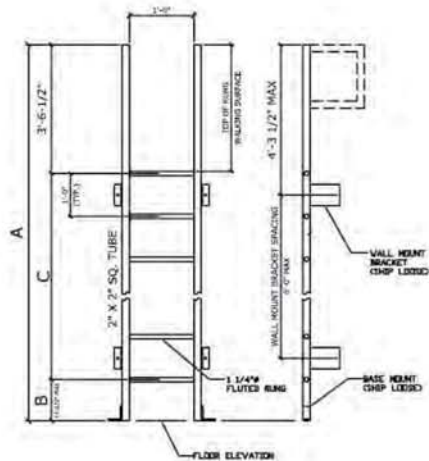
OPTIONS TO SELECT RIGHT, LEFT OR WALK-THROUGH ACCESS



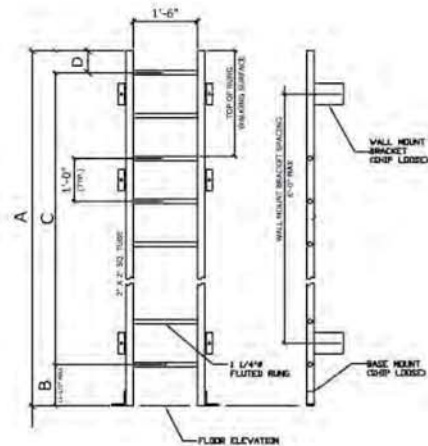
STANDARD WALK-THROUGH LADDER (WITH BASE CLIP)



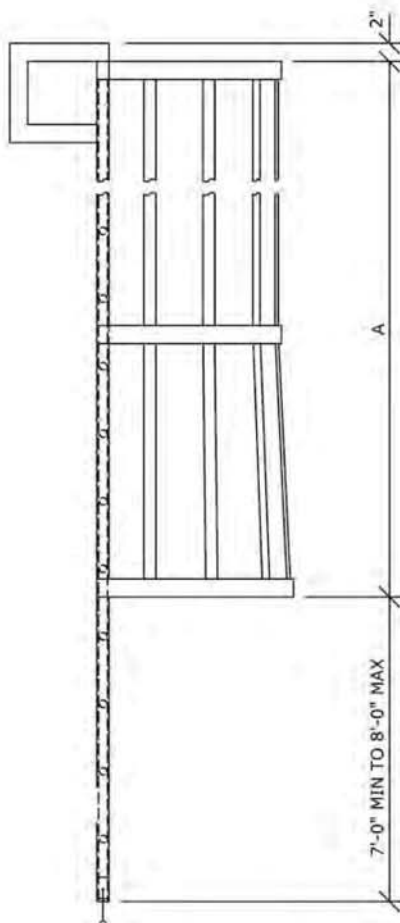
STANDARD LADDER (WITH BASE MOUNT)



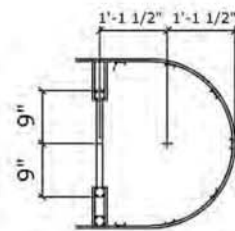
STANDARD WALK-THROUGH LADDER
(WITH BASE CLIP)



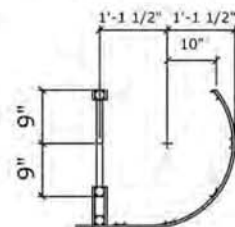
STANDARD LADDER
(WITH BASE MOUNT)



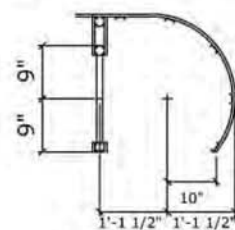
STANDARD LADDER WITH CAGE



WALK-THROUGH

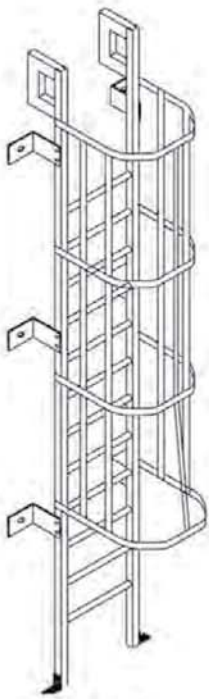


RIGHT ACCESS

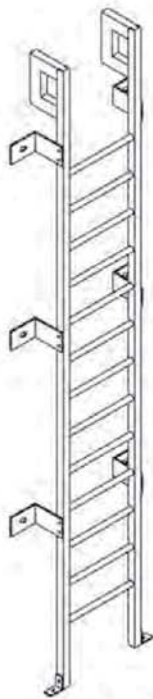


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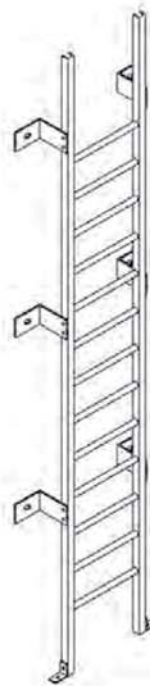
OPTIONS TO SELECT RIGHT, LEFT OR
WALK-THROUGH ACCESS



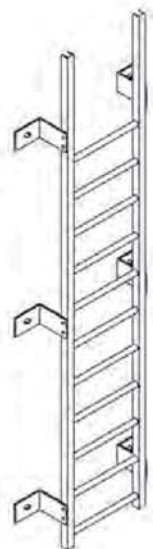
WALK-THROUGH
CAGE w/RETURN



WALK-THROUGH
w/RETURN



FLOOR MOUNT



WALL MOUNT

Chemical Resistance Chart



CHEMICAL ENVIRONMENT	% CONCENTRATION	TEMPERATURE	POLYESTER	ISOPHTHALIC	VINYLESTER
Acetic Acid	50	MAX	NR	NR	R
Acetone	100	75	NR	NR	NR
Alcohols	100	120	NR	NR	NR
Alum	ALL	MAX	R	NR	120
Aluminum Chloride	ALL	MAX	NR	NR	120
Aluminum Fluoride	20	75	SS	SS	R
Ammonium Hydroxide	30	75	NR	NR	R
Ammonium Salts-Neutral	ALL	120	R	R	R
Ammonium Salts-Aggressive	ALL	75	SSI	SSI	SSF
Aromatic Solvents	ALL	75	NR	NR	TEST
Barium Salts	ALL	MAX	R	R	R
Benzene	100	140	NR	SSI	SSI
Black Liquor (Pulp Mill)	ALL	MAX	NR	SSI	R
Bleach Liquor (Pulp Mill)	ALL	MAX	NR	SSI	R
Calcium Hydroxide	25	MAX	SSI	SSF	R
Calcium Hypochlorite	ALL	MAX	NR	SSI	R
Calcium Salts	ALL	MAX	R	R	R
Carbon Tetrachloride	100	75	NR	SSI	R
Chlorinated Hydrocarbons	100	75	TEST	TEST	TEST
Chlorine Dioxide	SAT	140	NR	NR	R
Chlorine Water	SAT	120	TEST	SSI	R
Chlorine, Wet	SAT	MAX	NR	NR	R
Chlorobenzene	100	75	NR	NR	SSF
Chlorobenzene	ALL	Up to 100	NR	NR	R
Chloroform	100	75	NR	NR	NR
Chromic Acid	50	140	NR	SSF	SSF
Citric Acid	ALL	MAX	R	R	R
Copper Cyanide Plating	ALL	125	SSI	SSF	R
Copper Salts	ALL	MAX	R	R	R
Crude Oil (Sweet or Sour)	ALL	MAX	R	R	R
Dichlorobenzene	100	75	NR	NR	NR
Ethers		75	NR	NR	NR
Ferric Chloride	100	MAX	R	R	R
Ferric Salts	ALL	MAX	R	R	R
Fluoride Salts+HCl	ALL	75	NR	SSF	R
Fluosilicic Acid	10	75	SSF	SSF	R
Formaldehyde	37	150	SSI	SSI	R
Formic Acid	25	100	SSI	SSF	R
Fuel (Diesel, Jet, Gasoline)	ALL	100	R	R	R
Glycerine	100	MAX	R	R	R
Green Liquor (Pulp Mill)	ALL	MAX	NR	NR	R
Hydrobromic Acid	48	MAX	NR	SSF	SSF
Hydrochloric Acid	10	MAX	NR	NR	R
Hydrochloric Acid	30	MAX	NR	NR	R
Hydrochloric Acid (concentrated)	ALL	Up to 180	NR	NR	SSI
Hydrocyanic Acid	ALL	MAX	NR	NR	R
Hydrofluoric Acid	20	75	NR	NR	SSF
Hydrogen Peroxide	30	75	NR	R	R
Lactic Acid	100	MAX	NR	R	R
Lime Slurry	SAT	MAX	R	R	R
Lithium Chloride	AT	MAX	NR	NR	NR
Lithium Salts	ALL	MAX	R	R	R
Magnesium Salts	ALL	MAX	R	R	R
Maleic Acid	100	MAX	NR	SSF	R
Mercury Chloride	100	MAX	R	R	R
Nickel Salts	ALL	MAX	R	R	R
Nitric Acid	20	120	SSI	SSF	R
Nitric Acid	35	100	NR	NR	R
Nitric Acid	40	Ambient	NR	NR	SSI
Nitric, Hydrofluoric	20:2	75	NR	NR	SSI
Nitrous Acid	10	75	R	R	R
Ozone for Sewage Treatment		100	R	R	R
Phenol	10	75	NR	NR	R
Phenol	88	Ambient	NR	NR	SSF
Phosphoric Acid	85	MAX	SSF	R	R
Phosphoric Acid, Super	115	MAX	TEST	SSI	R
Potassium Hydroxide	10	120	NR	SSI	R
Potassium Salts	ALL	MAX	R	R	R
Silver Nitrate	100	MAX	R	R	R
Sodium Cyanide	ALL	75	R	R	R
Sodium Hydroxide	50	MAX	NR	NR	120
Sodium Hydroxide	10	MAX	NR	NR	120
Sodium Hypochlorite (Stable)	10	100	SSI	SSF	R
Sodium Salts-Neutral	ALL	MAX	R	R	R
Sodium Salts-Aggressive	ALL	75	TEST	SSI	SSF
Sulfur Dioxide	SAT	MAX	NR	NR	R
Sulfuric Acid	25	MAX	NR	R	R
Sulfuric Acid	50	MAX	NR	NR	NR
Sulfuric Acid	75	100	NR	SSI	R
Toluene	100	120	NR	SSI	SSF
Trichloroethane 1, 1, 1	ALL	75	NR	SSI	SSF
Trisodium Phosphate	50	MAX	SSI	SSI	R
Water (Fresh, Salt, Moderate D.I.)	100	MAX	R	R	R
Wet Chlorine/Hydrochloric Acid	10-20	Up to 350	NR	NR	SSF
White Liquor (Pulp Mill)	ALL	MAX	NR	NR	R
Zinc Chloride Plating	ALL	75	NR	SSF	R
Zinc Salts	100	MAX	R	R	R

NR = NOT RESISTANT

R = RESISTANT

SSI = SPLASHES & SPILLS INFREQUENT

SSF = SPLASHES & SPILLS FREQUENT

TEST = TEST ON PRODUCT

◆ Grating Hold Down Clips



◆ Ladder, Handrail, Shutter, Fence



◆ Cage Ladder

◆ Shutter

◆ Sidewalk Isolation Fence



◆ Highway Fence

◆ Square Tube Handrail

◆ Fence



◆ Stairs

◆ Trolley



Nantong ZeAll New Materials Co., Ltd.

YuAi Village, Chenqiao Street, Gangzha Dist.

Nantong, China 226012

Tel: +86-513-66819918

Fax: +86-513-85694090

Cell: +86-139-62962332

+86-139-62961158

Email : sales@izeal.com

Web : www.izeall.com