

Fiberglass Molded Products

Introduction



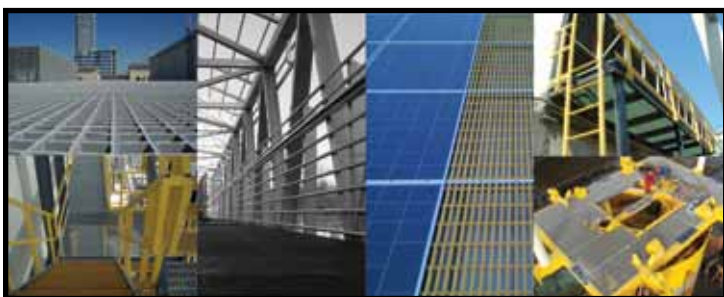
Combining unmatched corrosion resistance with strength, long life and safety, Fibergrate Composite Structures Inc. sets the standard for fiberglass reinforced plastic (FRP) molded products. With more than ten custom resins, Fibergrate products are proven to deliver years of reliable service, even in the most demanding corrosive conditions — conditions which cause conventional metallic and wood products to deteriorate rapidly.

Fibergrate products are lightweight and easy to fabricate. Savings on labor and equipment often make the total installed cost of Fibergrate products comparable to that of steel. Combining these installation savings with low maintenance, long life and worker safety, Fibergrate products offer a life cycle cost that is significantly lower than that of metallic products.

Fibergrate's molded grating line includes Fibergrate® molded grating for most applications, Fibergrate® molded high load capacity grating for H-20 and forklift traffic, Micro-Mesh® access flooring, Ecograte® for docks and marinas, Airmesh® screening and Multigrid® grating. For applications requiring a solid walkway, Fibergrate carries Fiberplate® structural floor panels and Fibergrate® covered grating. Stair solutions include Fibertred® stair treads panels for industrial and commercial use, covered stair treads for architectural applications and stair tread covers for existing stairways. Ergonomic work platform solutions include Safe-T-Stand® platforms, which are available in varying heights, and raised ergonomic workmats. Fibergrate has recently consolidated its Chemgrate® (Chemplate®, Chemdeck® and Chemtred®) product line into the Fibergrate product line.

Fibergrate's complete line of molded products and turnkey services offers a variety of solutions for most applications.

Fibergrate Markets



- Architectural
- Bridge & Highway
- Chemical
- Commercial
- Food & Beverage
- Manufacturing
- Metals & Mining
- Microelectronics
- Oil & Gas
- Pharmaceutical
- Power
- Pulp & Paper
- Recreation
- Telecommunications
- Transportation
- Water & Wastewater

Fibergrate® Benefits



Corrosion Resistant: Fibergrate® molded fiberglass products are known for their ability to provide corrosion resistance in the harshest environments and chemical exposures.



Slip Resistant: The meniscus and integrally applied grit surfaces of Fibergrate molded products have unmatched slip resistance for improved worker safety.



Low Maintenance: The corrosion resistant properties of FRP grating and other products reduce or eliminate the need for sandblasting, scraping and painting. Products are also easily cleaned with a high pressure washer.



Fire Retardant: Flame spread rating of 25 or less, as tested in accordance with ASTM E-84, and meets the self-extinguishing requirements of ASTM D-635.



High Strength to Weight Ratio: Less than one-half the weight of steel grating, allowing easy removal for access below floor level and installation with no heavy equipment and less manpower.



Electrically & Thermally Non Conductive: Fiberglass is electrically non conductive for safety and has low thermal conductivity which results in a more comfortable product when physical contact occurs.



Impact Resistant: Fibergrate molded products show superior impact resistance when compared to steel gratings.



Low Install Cost: Due to ease of fabrication and light weight, FRP molded grating eliminates the need for heavy lifting equipment.



Long Service Life: Fiberglass products provide outstanding durability and corrosion resistance in demanding applications, therefore providing improved product life over traditional materials.



NSF® Standard 61-Certified:

NSF Standard 61-Certified molded grating is available in all Fibergrate® molded grating mesh patterns and thicknesses, except Ecograte® and 4 x 12 Micro-Mesh® panels. These molded gratings complement the complete line of NSF Standard 61-Certified Dynaform® fiberglass structural shapes, Dynarail® FRP handrail and ladder systems, and Safe-T-Span® pultruded gratings assembled from NSF Standard 61-Certified components.



Heavy Metal Safe:

The EPA, OSHA and other regulatory agencies created to protect our lives and our natural resources have increased legislation to control heavy metals such as lead, chrome, cadmium and other metals in all products where exposure is a health threat. Fibergrate Composite Structures Inc. supports this strengthened legislation and has, for more than 20 years, voluntarily tested for heavy metals in our products and minimized or eliminated heavy metals from our products.

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Molded Grating Resins

Corrosion in the workplace negatively impacts your bottom line. Each year, industrial plant executives eliminate expensive corrosion related maintenance problems by switching to Fibergrate molded grating. Various applications present different requirements so Fibergrate offers numerous standard resin systems to address multiple needs.

Fibergrate® Standard Resins

Vi-Corr®: A superior vinyl ester resin developed for reliable performance in the toughest environments. It offers outstanding resistance to a wide range of highly corrosive situations, from caustic to acidic. In fact, no other resin system can match the performance of Vi-Corr in highly acidic environments. **Vi-Corr has replaced VE-25.** Color: orange or dark gray. Flame spread: ASTM E84 rating of 25 or less. Certifications: DNV Type Approval No. F-16856; USCG Accepted; ABS Type Approval No. 01-HS34733-X.

FGI-AM®: This improved food-grade isophthalic polyester resin system offers antimicrobial properties to inhibit the growth of bacteria on the surface of the composite to protect the product itself, along with the necessary corrosion resistance to meet the requirements of the food and beverage industry. This product is intended only for non-public health uses. Color: light gray. Flame Spread: ASTM E84 rating of 25 or less. Certifications: USDA accepted.

Corvex®: This newly improved isophthalic polyester resin system outperforms a number of competitive fiberglass and metal products and meets the requirements for corrosion resistance found in industrial, chemical processing and water/wastewater applications. **This upgraded formulation has replaced IFR, CP-84 and FS-25 resins.** Color: yellow, dark gray, or dark green. Flame Spread: ASTM E84 rating of 25 or less. Certifications: DNV Type Approval No. F-16856.

XFR: This eXtra Fire Retardant vinyl ester resin is recommended for use where the fire potential is high. Color: dark gray. Flame Spread: ASTM E84 rating of 10 or less, a level exceeded by no other resin system. Certifications: DNV Type Approval No. F-16856.

ELS: This Extremely Low Smoke resin is an acrylic-modified polyester system that is ideal for tunnel, offshore, mass transit and other confined space applications. ELS exhibits low ignitability, low smoke generation and extremely low smoke toxicity. Color: light gray. Flame Spread: ASTM E84: flame spread index of 25 or less, a smoke developed index of 100 or less and Fuel Contribution of 0. Certifications: DNV Type Approval No. F-16856.

Super Vi-Corr®: This family of resin systems consists of more than 30 custom formulas engineered to provide corrosion control solutions in applications that are too severe for conventional FRP and other building materials. Each Super Vi-Corr resin was engineered for the best possible performance in specific chemical and/or elevated temperature environments. These systems exist for aggressive chemical service in reagents like solvents, acidic oxidizers, chlorine dioxide, sodium hypochlorite and liquid desiccants. Certain formulas are also suited for elevated temperature applications up to 400° F. Super Vi-Corr gratings are typically used for packing hold-downs and support in environmental and process scrubber applications. Color: natural - tan to beige. Flame Spread: non fire retardant, unless specified.

Specialty

Fibergrate also offers specialty resins custom designed to meet your specific needs. These special formulations are developed to address unique and demanding services and applications, as well as niche market needs (Super Vi-Corr family of resins).

We can engineer resin systems to address temperature, flame, smoke and toxicity requirements. Our HSUV resin system was developed to address the intense UV effects found in offshore applications. Fibergrate's custom formulations with low smoke/toxicity properties were engineered with the United States Navy for below-deck marine service.

Architectural Formulations: Fibergrate's standard formulations are designed for industrial and corrosive applications. Special formulations and colors are required to meet the unique demands of architectural, fountain and pool projects. Please contact Fibergrate for additional information.

Floor Plate



Fiberplate® is manufactured by building up multiple layers of fiberglass reinforcement and specially-formulated resins. The result of this process is a solid composite panel offering both bidirectional strength and corrosion resistance.

This specially designed product is nonporous and is easily cleaned by a high pressure washer and can withstand cleaning solutions. Available in all molded grating resin systems (see page 7). Standard panel sizes are 3' x 10', 4' x 8', 4' x 12' and 5' x 10'. (Custom sizes available.)

Fiberplate® Load and Deflection Data

*Important: 1/8" Plate designed for use as covering only; not recommended for load bearing service.

Depth (in)	Span (in)	Concentrated Load-Full Panel								Uniform Load-Full Panel						Concentrated Load Required to Produce Deflection Equal to 1% of Span (lb)
		Maximum Load		Load (lb)						Maximum Load		Load (psf)				
		Norm ¹	Firm ²	100	250	500	750	1000	Norm ¹	Firm ²	25	50	75	100	150	
1/4	12	229	135	.047	.104	.199	.294	.392	336	205	.010	.014	.022	.029	.043	300 lb
	18	196	117	.079	.181	.351	--	--	99	54	.056	.085	.115	.145	.204	256 lb
	24	181	116	.102	.268	--	--	--	28	15	.177	.327	.476	--	--	223 lb
	36	84	55	.350	--	--	--	--	--	--	--	--	--	--	--	103 lb
3/8	12	515	325	.018	.045	.093	.140	.190	480	300	<.01	--	.016	.020	.030	667 lb
	18	455	288	.028	.077	.158	.239	.320	146	91	.026	.050	.075	.099	.148	584 lb
	24	259	149	.100	.195	.355	--	--	64	40	.075	.150	.225	.300	.449	308 lb
	36	154	98	.178	.467	--	--	--	28	17	.258	--	--	--	--	192 lb
1/2	12	960	600	<.01	.025	.048	.075	.100	654	410	<.01	--	.012	.016	.022	1250 lb
	18	853	543	.011	.011	.038	.081	.125	169	26	.125	.041	.057	.074	.106	1184 lb
	24	508	313	.043	.098	.1490	.282	.374	118	72	.051	.089	.127	.165	.241	631 lb
	36	260	157	.127	.283	--	--	--	49	30	.153	.297	.441	--	--	318 lb
3/4	12	3965	2469	.003	.007	.013	.019	.024	1944	1215	.0012	.0025	.0037	.0049	.0074	4750 lb
	18	1798	1123	.009	.024	.043	.063	.079	576	360	.002	.011	.018	.025	.039	2140 lb
	24	1412	882	.019	.042	.075	.106	.133	243	152	.031	.054	.075	.093	.131	1700 lb
	36	1108	693	.027	.066	.129	.188	.243	85	53	.078	.134	.187	.231	.321	1440 lb

Notes:

- (1) Normal load is the load which will produce a L/D of 125 or .375" Maximum.
- (2) Firm is the load which will produce a L/D of 200 or .25" Maximum.
- (3) Loads for Short Span Normal and Firm have been limited to allow for shearing effects.
- (4) Clear Span is 2" less than width of grating.

Plate Weight

1/8" - 1 5/8 psf, 1/4" - 2-1/2 psf, 3/8" - 4 1/4 psf, 1/2" - 5 5/8 psf, 3/4" - 8 3/8 psf

Installation

- Install using ordinary hand tools and masonry blade
- Fastener assembly kits may be ordered directly from Fibergate
- Space fasteners a minimum of 12"-24" apart
- On concrete, use masonry bit and concrete anchor bolts
- On steel, wood or FRP, drill and bolt with truss head assembly
- It is recommended that all cut edges and holes be sealed

