



FIBERGLASS GRATING
& STRUCTURAL SYSTEMS



GatorDeck[®] Phenolic Pultruded Grating

U.S. Coast Guard
Approval No. 164.040/4

GATORDECK® PHENOLIC GRATING

High-Temperature Fire Resistance Low Smoke & Toxic Fume Emissions

Seasafe's GatorDeck Phenolic Pultruded Grating provides the superior solution for decks, platforms, stairways, and walkways requiring superior resistance to fire, with undetectable levels of smoke and toxic gas emissions. Based on the final version of the U.S. Coast Guard requirements, GatorDeck Phenolic outperformed competitive products in meeting the latest performance specifications for USCG approval. It's the ideal phenolic grating for...

offshore construction

marine vessels

chemical processing plants

petroleum refineries

tunnels

mines

public structures

public transportation

myriad industrial uses



Advantages

Superior fire resistance. In pultruding GatorDeck Phenolic, Seasafe uses the highest quality ingredients to configure a specifically engineered resin system. The result: an unsurpassed ability to endure prolonged exposure to flame while maintaining structural integrity.

Low smoke and toxic fume emissions. Smoke and toxic gas emissions during a fire are critical factors in the ability to safely evacuate the area. Seasafe GatorDeck Phenolic scored well below all specified limits — if a detectable level was recorded at all.

U.S. Coast Guard approved. This remarkable product exceeds the latest Level 2 fire integrity standards outlined in the U.S. Coast Guard's *Policy File Memorandum on Fiber Reinforced Plastic (FRP) Grating*, and carries USCG Type Approval No. 164.040/4.

Corrosion resistant. A pultruded fiberglass grating, GatorDeck Phenolic offers excellent chemical resistance and weatherability, characteristics that make fiberglass grating the most cost-effective choice for hostile environments.

Grit coated and ergonomic. GatorDeck Phenolic comes with a bonded grit surface for safe, sure footing, wet or dry. And its natural flexibility makes it inherently comfortable to stand on or walk upon for extended periods.

Stronger and lighter than steel. Pound-for-pound stronger than steel, FRP grating can handle standard working loads and is lighter than the typical steel grating used in the same application. Being a fraction of the weight of steel — or even of molded FRP grating — GatorDeck Phenolic can reduce the supports needed and can offer as much as a 55 percent weight reduction.

Simple to install. GatorDeck Phenolic's lighter weight eliminates the need for heavy lifting equipment during installation. Simply cut it to fit and clip it down; no welders, torches, or other special equipment is needed.

Impact resistant. Seasafe GatorDeck Phenolic grating's ability to resist an impact load without permanent deformation lowers replacement costs versus steel grating.

Available Panel Sizes & Accessories

GatorDeck Phenolic Pultruded Grating can be supplied in standard 3' x 20' and 4' x 20' panel sizes, or can be pre-fabricated at Seasafe to fit your area. All panels feature 1-1/2" deep I-bars on 1-1/2" centers, with cross-rod bracing on 6" centers and 60% open area. Type 316 stainless steel clips, bolts, nuts, and washers are available for panel positioning and hold-down. Standard clips made of special alloys are available on request.

TEST RESULTS

Independent testing confirms that GatorDeck Phenolic Pultruded Grating exceeds the performance requirements for Level 2 grating applications as defined in the most recent *Structural Fire Protection for Commercial Vessels* guidelines published by the U.S. Coast Guard (www.uscg.mil/hq/g-m/mse4/sfpgrat1.htm).

Fire Retardance and Flame Spread

Level 3:

All fiberglass gratings except those fitted on open decks and within tanks, cofferdams, voids, pipe tunnels, and ducts should have a low flame-spread rating as determined by the ASTM-E84 *Standard Test Method for the Surface Burning Characteristics of Building Materials*. The flame-spread rating should not exceed 20.

Result:

GatorDeck Phenolic Pultruded Grating achieved an extra-low flame-spread rating of 10, significantly exceeding the requirement for USCG approval.

Smoke Generation

Level 3:

All fiberglass gratings used within accommodation, service, and control spaces should have low smoke characteristics as determined by the International Maritime Organization's (IMO) Fire Test Procedure Code, Resolution MSC 61(67) Part 2, Annex 1: *Smoke and Toxicity Test*. The U.S. Coast Guard's guidelines state that fiberglass gratings must meet the limits set for bulkheads, ceilings, and linings.

Results:

GatorDeck Phenolic Pultruded Grating performed as shown in the tables.

Smoke Density	25 kW/m ² w/o Pilot	25 kW/m ² w/Pilot	50 kW/m ² w/o Pilot
Set Limits	<200	<200	<200
Max. Result	29.0	14.2	124.0
Avg. Result	25.1	13.0	116.6

Toxic Gas Emissions	Set Limits	Maximum Result	Average Result
Carbon Monoxide CO	<1,450	1,154	905
Hydrogen Bromide HBr	<600	Undetectable	--
Hydrogen Chloride HCl	<600	Undetectable	--
Hydrogen Cyanide HCN	<140	31	24
Hydrogen Fluoride HF	<600	Undetectable	--
Sulfur Dioxide SO ₂	<120	Undetectable	--
Oxides of Nitrogen NO _x	<350	Undetectable	--

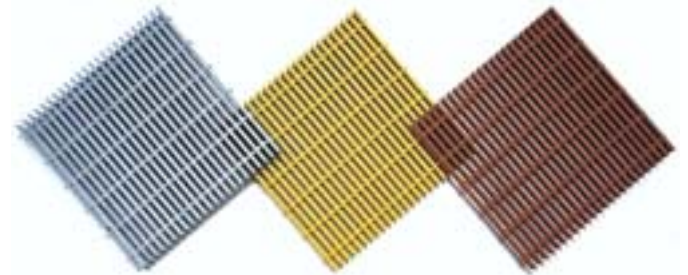
Structural Fire Integrity

Level 3, Part A:

A sample of the fiberglass grating, 14 inches wide, is tested side-by-side with an equivalent steel grating. The samples are placed on a 48-inch span and subjected to a concentrated load of 88.2 pounds. Both samples are exposed to an ASTM-E119 time/temperature burn for 60 minutes, reaching over 1,700 degrees Fahrenheit. As the temperature rises during the burn, the increasing deflections of the samples are monitored. The fiberglass grating passes this test if the temperature at which the steel grating reaches a set deflection is no higher than 180 degrees above the temperature at which the fiberglass grating reaches the same deflection.

Result:

GatorDeck Phenolic Pultruded Grating performed well within requirements; deflection was reached at only 58 degrees below the steel grating.



Level 3, Part B:

A similar pair of fiberglass and steel grating samples are burned under the same conditions, minus the load, and allowed to cool. The samples are then subjected to an 88.2-pound concentrated load and must support that load without collapsing.

Result:

GatorDeck Phenolic Pultruded Grating meets the USCG structural fire requirements for a Level 3 Type Approved product.

Level 2:

The grating samples used in the post-burn concentrated load test are subjected to uniform loads. To pass this test and receive USCG approval for Level 2 structural fire protection the fiberglass grating must support, without collapsing, a uniform load that is (a) greater than or equal to the load supported by the equivalent steel grating or (b) greater than or equal to 94 pounds per square foot, whichever is less.

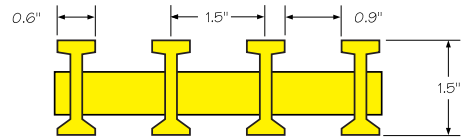
Result:

The 14-inch wide GatorDeck Phenolic grating on a 46-inch span overwhelmingly exceeded the Level 2 structural fire requirements by supporting a uniform load of 177 pounds per square foot — almost twice the required amount. (Compare the performance of competitive products tested on 44-inch spans.)

GatorDeck Phenolic GD-I6015

LOAD DEFLECTION (INCHES) @ INDICATED UNIFORM LOAD (LBS/SQ-FT)								LOAD AT	
SPAN (IN)	50	75	100	150	300	500	1,000	.25-INCH DEFLECTION	.375-INCH DEFLECTION
12	0.001	0.001	0.002	0.003	0.005	0.009	0.018		
18	0.002	0.003	0.005	0.007	0.014	0.023	0.046		
24	0.005	0.007	0.009	0.014	0.028	0.046	0.092		
30	0.010	0.015	0.020	0.030	0.059	0.099	0.198	1,263	
36	0.021	0.032	0.042	0.063	0.126	0.210	0.420	595	893
42	0.032	0.049	0.065	0.097	0.195	0.325		385	577
48	0.057	0.086	0.115	0.172	0.344			218	327
54	0.089	0.133	0.177	0.266	0.532			141	211
60	0.131	0.196	0.262	0.392				95	143
66	0.210	0.315	0.420					60	89
72	0.283	0.425						44	66

Dimensional Detail

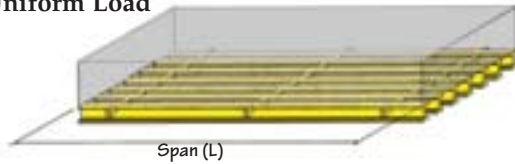


Bearing Bar Type: I-Bar
Colors: Brown, Yellow, Gray
Open Area: 60%
Approx. Weight: 3.2 lbs/sq ft
Thickness: 1.5"
Panel Sizes: 3' x 20', 4' x 20'
Bearing Bar Centers: 1.5"

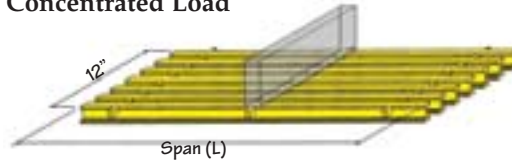
LOAD DEFLECTION (INCHES) @ INDICATED CONCENTRATED LOAD (LBS)										LOAD AT	
SPAN (IN)	100	200	400	500	750	1,000	1,500	2,000	2,500	.25-INCH DEFLECTION	.375-INCH DEFLECTION
12	0.006	0.009	0.015	0.017	0.022	0.026	0.034	0.041	0.045		
18	0.008	0.014	0.022	0.027	0.036	0.044	0.062	0.079	0.095		
24	0.013	0.020	0.033	0.038	0.053	0.066	0.093	0.119	0.146		
30	0.013	0.026	0.052	0.064	0.095	0.125	0.183	0.241		2,096	
36	0.026	0.048	0.089	0.110	0.163	0.217	0.320	0.423		1,171	1,760
42	0.028	0.059	0.121	0.150	0.223	0.303	0.451			832	1,266
48	0.047	0.093	0.181	0.228	0.341	0.453				555	835
54	0.064	0.128	0.253	0.311	0.465					403	616
60	0.082	0.169	0.336	0.422						302	450
66	0.127	0.246	0.478	0.595						211	315
72	0.152	0.303	0.601	0.752						168	250

Load and deflection data were derived from lab tests conducted by Seasafe. Values are for design selection and are approximate. Seasafe recommends selecting gratings based on a deflection of .25-inch or less. This deflection may be exceeded at the discretion of the designer. Deflections of .25-inch or less will give excellent pedestrian comfort. Deflections of .375-inch or less will give satisfactory pedestrian comfort. Loads for short spans in the .25 and .375 deflection columns have been omitted to allow for shear properties.

Uniform Load



Concentrated Load



Seasafe Products

Structural Fabrication

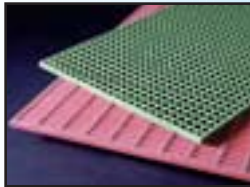


Custom Design & Engineering. to solve your unique structural problem with strong, lightweight, corrosion resistant fiberglass reinforced plastic (FRP)

Multi-Plant Manufacturing. to ensure timely availability of the products needed to complete your project on schedule

Turn-Key Fabrication & Installation. to put your structure into place with maximum efficiency, and with minimal effort on your end

Open Molded, Pultruded & Compression Molded Grating



GatorGrate® Molded, bi-directional strength with anti-slip top surface

GatorDeck Pultruded, competitively priced and perfect for long spans

KorDek®, unique compression molded product; the world's strongest FRP grating, exclusively from Seasafe

Cable Tray & Struts



Seasafe Cable Tray, non-conductive, non-magnetic, corrosion resistant, lighter than steel; available in seven widths, four rung spacings, three loading depths, and two resins

Fiberglass Strut Systems, offering a complete selection of non-metallic channels, fasteners, pipe clamps, beam clamps, hangers, brackets, and fittings

Handrails, Ladders & Structural Shapes



Handrails, pultruded fiberglass, manufactured to OSHA standards

Ladders & Caged Ladders, positive traction and secure gripping, for maximum safety

Structural Shapes, angles, I-beams, wide-flange beams, channels, bars, round and square tubes, custom shapes

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