

Safe-T-Span[®] Industrial Grating

Fibergrate's Safe-T-Span[®] pultruded industrial grating combines performance, far exceeding that of conventional metal grating, with a comparable installed cost. This advanced pultruded grating is designed for use in a wide range of industrial applications that require strength and corrosion resistance. Manufactured with a high percentage of glass within the laminate, industrial grating provides durability, extremely high unidirectional strength and stiffness. Due to its exceptional stiffness, it can be used with confidence where wide support spans are required. For most applications where it is used to replace steel grating, Safe-T-Span industrial grating rarely requires additional support.

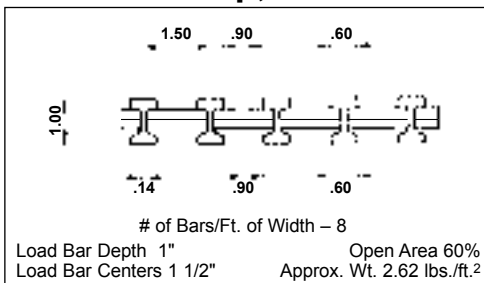


Phenolic pultruded industrial grating used on an offshore platform.

Safe-T-Span industrial grating comes in 1" and 1-1/2" depths in an I bar configuration with 40% and 60% open areas for most applications. 2" depth T bar configuration with either 33% or 50% open area is also available for applications which require wider spans or lower deflections.

Details

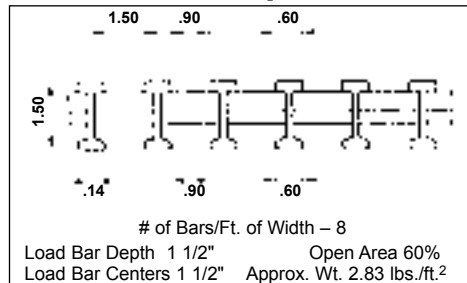
1" Deep, I6010



Engineering Properties per FT of Width

A=2.64 IN² I=0.33 IN⁴ S=0.63 IN³
Average EI = 1,700,000 lb-in² (SPAN ≥ 24")

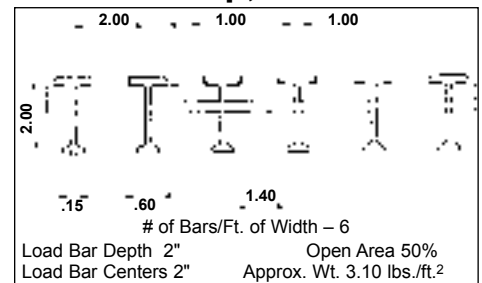
1-1/2" Deep, I6015



Engineering Properties per FT of Width

A=3.20 IN² I=.94 IN⁴ S=1.20 IN³
Average EI = 4,600,000 lb-in² (SPAN ≥ 24")

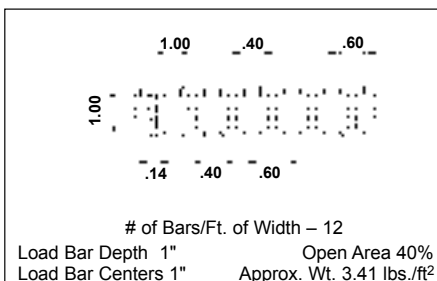
2" Deep, T5020



Engineering Properties per FT of Width

A=3.20 IN² I=1.68 IN⁴ S=1.96 IN³ Sb=1.47 IN³
Average EI = 7,600,000 lb-in² (SPAN ≥ 24")

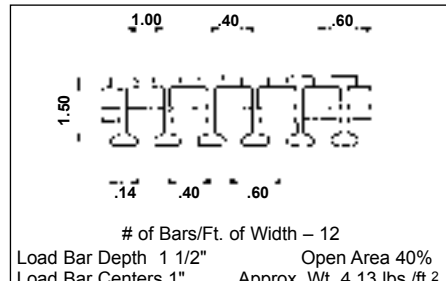
1" Deep, I4010 ADA Compliant



Engineering Properties per FT of Width

A=3.96 IN² I=0.5 IN⁴ S=0.95 IN³
Average EI = 2,500,000 lb-in² (SPAN ≥ 24")

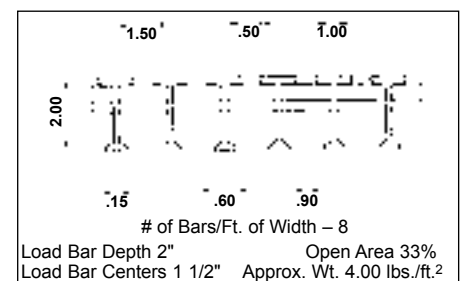
1-1/2" Deep, I4015 ADA Compliant



Engineering Properties per FT of Width

A=4.80 IN² I=1.41 IN⁴ S=1.80 IN³
Average EI = 7,000,000 lb-in² (SPAN ≥ 24")

2" Deep, T3320 ADA Compliant



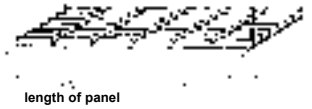
Engineering Properties per FT of Width

A=4.28 IN² I=2.24 IN⁴ S=2.61 IN³ Sb=1.96 IN³
Average EI = 9,200,000 lb-in² (SPAN ≥ 24")

Refer to chart on Page 4 for Grating Selection

Industrial Grating Load Charts

U Uniform load – lbs.
 □ U Uniform load deflt



Safe-T-Span® Uniform Load Table — Deflections in Inches										
SPAN (in)	STYLE	Load = lbs. / ft. ²							MAXIMUM RECOMMENDED LOAD	ULTIMATE CAPACITY (psf)
		50	100	200	300	500	1,000	2,000		
12	I6010	<.01	<.01	<.01	<.01	0.01	0.02	0.04	3570	7140
	I6015	<.01	<.01	<.01	<.01	<.01	0.01	0.02	7620	15240
	T5020	<.01	<.01	<.01	<.01	<.01	<.01	0.01	7560	15120
	I4010	<.01	<.01	<.01	<.01	<.01	0.01	0.02	5350	10700
	I4015	<.01	<.01	<.01	<.01	<.01	<.01	0.01	11430	22860
	T3320	<.01	<.01	<.01	<.01	<.01	<.01	0.01	10080	20160
18	I6010	<.01	0.01	0.02	0.02	0.04	0.08	0.16	2260	4520
	I6015	<.01	<.01	<.01	<.01	0.02	0.03	0.06	4910	9820
	T5020	<.01	<.01	<.01	<.01	0.01	0.02	0.05	5040	10080
	I4010	<.01	<.01	0.01	0.02	0.03	0.05	0.11	3390	6780
	I4015	<.01	<.01	<.01	<.01	0.01	0.02	0.04	7370	14740
	T3320	<.01	<.01	<.01	<.01	0.01	0.02	0.04	6720	13440
24	I6010	0.01	0.02	0.05	0.07	0.12	0.24	—	1690	3380
	I6015	<.01	0.01	0.02	0.03	0.04	0.09	0.17	3190	6380
	T5020	<.01	<.01	<.01	0.02	0.03	0.05	0.11	2970	5940
	I4010	0.01	0.02	0.03	0.05	0.08	0.16	0.31	2540	5080
	I4015	<.01	<.01	0.01	0.02	0.03	0.06	0.11	4790	9580
	T3320	<.01	<.01	<.01	0.01	0.02	0.04	0.08	3960	7920
30	I6010	0.03	0.05	0.11	0.16	0.27	—	—	1370	2740
	I6015	0.01	0.02	0.04	0.06	0.10	0.20	0.41	2950	5900
	T5020	<.01	0.01	0.02	0.03	0.06	0.13	0.25	2590	5180
	I4010	0.02	0.04	0.07	0.11	0.18	0.36	—	2060	4120
	I4015	<.01	0.01	0.03	0.04	0.07	0.14	0.27	4420	8840
	T3320	<.01	0.01	0.02	0.03	0.05	0.09	0.19	3460	6920
36	I6010	0.05	0.10	0.21	0.31	—	—	—	1180	2360
	I6015	0.02	0.04	0.08	0.11	0.19	0.38	—	2460	4920
	T5020	0.01	0.02	0.05	0.07	0.12	0.23	0.47	2160	4320
	I4010	0.03	0.07	0.14	0.21	0.35	—	—	1760	3520
	I4015	0.01	0.03	0.05	0.08	0.13	0.25	0.50	3690	7380
	T3320	0.01	0.02	0.04	0.05	0.09	0.18	0.35	2880	5760
42	I6010	0.09	0.19	0.37	—	—	—	—	950	1900
	I6015	0.04	0.07	0.14	0.21	0.35	—	—	1840	3680
	T5020	0.02	0.05	0.09	0.14	0.23	0.45	—	1850	3700
	I4010	0.06	0.12	0.25	0.37	—	—	—	1430	2860
	I4015	0.02	0.05	0.09	0.14	0.23	0.47	—	2760	5520
	T3320	0.02	0.03	0.07	0.10	0.17	0.34	—	2470	4940
48	I6010	0.14	0.29	—	—	—	—	—	720	1440
	I6015	0.06	0.11	0.23	0.34	—	—	—	1410	2820
	T5020	0.04	0.07	0.14	0.21	0.36	—	—	1620	3240
	I4010	0.10	0.19	0.38	—	—	—	—	1080	2160
	I4015	0.04	0.08	0.15	0.23	0.38	—	—	2110	4220
	T3320	0.03	0.05	0.11	0.16	0.27	—	—	2160	4320
54	I6010	0.25	—	—	—	—	—	—	570	1140
	I6015	0.10	0.19	0.39	—	—	—	—	1110	2220
	T5020	0.06	0.12	0.24	0.36	—	—	—	1280	2560
	I4010	0.17	0.34	—	—	—	—	—	850	1700
	I4015	0.06	0.13	0.26	0.39	—	—	—	1670	3340
	T3320	0.04	0.09	0.18	0.27	0.45	—	—	1680	3360
60	I6010	0.42	—	—	—	—	—	—	460	920
	I6015	0.15	0.31	—	—	—	—	—	900	1800
	T5020	0.09	0.18	0.36	—	—	—	—	1040	2080
	I4010	0.28	—	—	—	—	—	—	690	1380
	I4015	0.10	0.21	0.41	—	—	—	—	1350	2700
	T3320	0.07	0.14	0.27	0.41	—	—	—	1360	2720
66	I6015	0.25	0.49	—	—	—	—	—	740	1480
	T5020	0.13	0.27	—	—	—	—	—	860	1720
	I4010	0.46	—	—	—	—	—	—	570	1140
	I4015	0.16	0.33	—	—	—	—	—	1120	2240
	T3320	0.10	0.20	0.40	—	—	—	—	1120	2240
	72	I6015	0.34	—	—	—	—	—	—	630
T5020		0.18	0.35	—	—	—	—	—	720	1440
I4015		0.23	0.45	—	—	—	—	—	940	1880
T3320		0.13	0.26	—	—	—	—	—	950	1900

IMPORTANT: Load information is different for Phenolic resin gratings. Please contact Fibergate for Phenolic load information.

- NOTES:**
- The designer should not exceed the MAX RECOMMENDED LOAD at any given span. MAX RECOMMENDED LOAD represents a 2:1 factor of safety on ULTIMATE CAPACITY.
 - ULTIMATE CAPACITY represents a complete and total failure of the grating. Values are provided to illustrate the reserve strength of the grating at a given span and are NOT to be used for design. Functionality of grating is limited to MAX RECOMMENDED LOAD.
 - Walking loads, typically 50-65 PSF maximum are recommended for pedestrian traffic. Deflections for worker comfort are typically limited to the lesser of 3/8" or CLEAR SPAN divided by 125; for a firmer feel, limit deflection to the lesser of 1/4" or CLEAR SPAN divided by 200.
 - The allowable loads in this table are for STATIC LOAD CONDITIONS at ambient temperatures only. Allowable loads for impact or dynamic conditions should be a maximum of ONE-HALF the values shown. Long term loads will result in added deflection due to creep in the material and will also require higher safety factors to ensure acceptable performance. For applications at elevated temperatures, consult factory. The designer is further referenced to the ASCE Structural Plastics Design Manual.
 - All gratings were tested in accordance with the proposed standard of the Fiberglass Grating Manufacturers Council of the American Composites Manufacturers Association (ACMA).

Industrial Grating Load Charts

C Concentrated line load – lbs/ft
 □ Concentrated line load defle

length of panel

Safe-T-Span [®] Concentrated Line Load Table — Deflections in Inches										
SPAN (in)	STYLE	Load = lbs. / ft. OF WIDTH						MAXIMUM RECOMMENDED LOAD	ULTIMATE CAPACITY (psf)	
		50	100	200	300	500	1,000			2,000
12	I6010	<.01	<.01	<.01	<.01	0.01	0.03	0.06	3570	7140
	I6015	<.01	<.01	<.01	<.01	<.01	0.01	0.02	7620	15240
	T5020	<.01	<.01	<.01	<.01	<.01	0.01	0.02	7560	15120
	I4010	<.01	<.01	<.01	<.01	0.01	0.02	0.04	5350	10700
	I4015	<.01	<.01	<.01	<.01	<.01	0.01	0.02	11430	22860
	T3320	<.01	<.01	<.01	<.01	<.01	<.01	0.01	10080	20160
	18	I6010	<.01	0.01	0.02	0.03	0.04	0.09	0.17	3390
I6015		<.01	<.01	<.01	0.01	0.02	0.03	0.06	7370	14740
T5020		<.01	<.01	<.01	<.01	0.01	0.03	0.05	7560	15120
I4010		<.01	<.01	0.01	0.02	0.03	0.06	0.12	5080	10160
I4015		<.01	<.01	<.01	<.01	0.01	0.02	0.04	11060	22120
T3320		<.01	<.01	<.01	<.01	0.01	0.02	0.04	10080	20160
24		I6010	0.01	0.02	0.04	0.06	0.09	0.19	0.38	2840
	I6015	<.01	<.01	0.01	0.02	0.03	0.07	0.14	4880	9760
	T5020	<.01	<.01	<.01	0.01	0.02	0.04	0.08	5940	11880
	I4010	<.01	0.01	0.03	0.04	0.06	0.13	0.25	4260	8520
	I4015	<.01	<.01	<.01	0.01	0.02	0.05	0.10	7310	14620
	T3320	<.01	<.01	<.01	0.01	0.02	0.03	0.06	7920	15840
	30	I6010	0.02	0.03	0.07	0.10	0.17	0.35	—	2300
I6015		<.01	0.01	0.03	0.04	0.06	0.13	0.26	4500	9000
T5020		<.01	<.01	0.01	0.02	0.04	0.08	0.16	5200	10400
I4010		0.01	0.02	0.05	0.07	0.12	0.23	0.47	3450	6900
I4015		<.01	0.01	0.02	0.03	0.05	0.11	0.22	6750	13500
T3320		<.01	<.01	0.01	0.02	0.03	0.06	0.12	6930	13860
36		I6010	0.03	0.06	0.11	0.17	0.28	—	—	1970
	I6015	0.01	0.02	0.04	0.06	0.10	0.20	0.40	3750	7500
	T5020	<.01	0.01	0.02	0.04	0.06	0.12	0.25	4320	8640
	I4010	0.02	0.04	0.07	0.11	0.18	0.37	—	2950	5900
	I4015	<.01	0.01	0.03	0.04	0.07	0.13	0.26	5630	11260
	T3320	<.01	0.01	0.02	0.03	0.05	0.09	0.19	5760	11520
	42	I6010	0.04	0.08	0.17	0.25	0.42	—	—	1670
I6015		0.02	0.03	0.06	0.10	0.16	0.32	—	3220	6440
T5020		0.01	0.02	0.04	0.06	0.10	0.21	0.41	3710	7420
I4010		0.03	0.06	0.11	0.17	0.28	—	—	2500	5000
I4015		0.01	0.02	0.04	0.06	0.11	0.21	0.42	4820	9640
T3320		0.01	0.02	0.03	0.05	0.08	0.16	0.31	4950	9900
48		I6010	0.06	0.11	0.23	0.34	—	—	—	1440
	I6015	0.02	0.05	0.09	0.14	0.23	0.46	—	2810	5620
	T5020	0.01	0.03	0.06	0.09	0.15	0.29	—	3250	6500
	I4010	0.04	0.08	0.15	0.23	0.38	—	—	2160	4320
	I4015	0.02	0.03	0.06	0.09	0.15	0.30	—	4220	8440
	T3320	0.01	0.02	0.04	0.07	0.11	0.22	0.44	4330	8660
	54	I6010	0.09	0.18	0.36	—	—	—	—	1280
I6015		0.03	0.07	0.14	0.21	0.35	—	—	2500	5000
T5020		0.02	0.04	0.08	0.13	0.21	0.42	—	2890	5780
I4010		0.06	0.12	0.24	0.36	—	—	—	1920	3840
I4015		0.03	0.05	0.09	0.14	0.23	0.46	—	3750	7500
T3320		0.02	0.03	0.06	0.10	0.16	0.32	—	3780	7560
60		I6010	0.13	0.27	—	—	—	—	—	1150
	I6015	0.05	0.10	0.20	0.30	0.49	—	—	2250	4500
	T5020	0.03	0.06	0.12	0.17	0.29	—	—	2600	5200
	I4010	0.09	0.18	0.36	—	—	—	—	1730	3460
	I4015	0.04	0.07	0.13	0.20	0.33	—	—	3380	6760
	T3320	0.02	0.04	0.09	0.13	0.22	0.44	—	3400	6800
	66	I6010	0.20	0.39	—	—	—	—	—	1050
I6015		0.07	0.14	0.28	0.42	—	—	—	2050	4100
T5020		0.04	0.08	0.15	0.23	0.38	—	—	2360	4720
I4010		0.13	0.26	—	—	—	—	—	1570	3140
I4015		0.05	0.09	0.19	0.28	0.47	—	—	3070	6140
T3320		0.03	0.06	0.12	0.17	0.29	—	—	3090	6180
72		I6010	0.26	—	—	—	—	—	—	960
	I6015	0.09	0.18	0.36	—	—	—	—	1880	3760
	T5020	0.05	0.09	0.19	0.28	0.47	—	—	2170	4340
	I4010	0.17	0.34	—	—	—	—	—	1440	2880
	I4015	0.06	0.12	0.24	0.36	—	—	—	2810	5620
	T3320	0.04	0.07	0.14	0.21	0.35	—	—	2830	5660

IMPORTANT: Load information is different for Phenolic resin gratings. Please contact Fibergate for Phenolic load information.

NOTES:

- The designer should not exceed the MAX RECOMMENDED LOAD at any given span. MAX RECOMMENDED LOAD represents a 2:1 factor of safety on ULTIMATE CAPACITY.
- ULTIMATE CAPACITY represents a complete and total failure of the grating. Values are provided to illustrate the reserve strength of the grating at a given span and are NOT to be used for design. Functionality of grating is limited to MAX RECOMMENDED LOAD.
- Walking loads, typically 50-65 PSF maximum are recommended for pedestrian traffic. Deflections for worker comfort are typically limited to the lesser of 3/8" or CLEAR SPAN divided by 125; for a firmer feel, limit deflection to the lesser of 1/4" or CLEAR SPAN divided by 200.
- The allowable loads in this table are for STATIC LOAD CONDITIONS at ambient temperatures only. Allowable loads for impact or dynamic conditions should be a maximum of ONE-HALF the values shown. Long term loads will result in added deflection due to creep in the material and will also require higher safety factors to ensure acceptable performance. For applications at elevated temperatures, consult factory. The designer is further referenced to ASCE Structural Plastics Design Manual.
- All gratings were tested in accordance with the proposed standard of the Fiberglass Grating Manufacturers Council of the American Composites Manufacturers Association (ACMA).

Load Information/Grating Selection

Load/Deflection Tables Information

Fibergrate load and deflection tables are designed to be user friendly by separating uniform load information from concentrated load information and by listing all its pultruded Safe-T-Span gratings in the column directly to the right of the span dimensions. These changes allow designers to quickly and accurately denote the grating best suited for the intended purpose.

Ultimate Capacity

Fibergrate has tested its pultruded grating product line to its ultimate capacity. **ULTIMATE CAPACITY** represents a complete and total failure of the grating and is presented to illustrate the reserve strength of the grating at a given span. Ultimate capacities are not to be used for design: functionality of the grating is limited to Maximum Recommended Load. The designer should not exceed the **MAX RECOMMENDED LOAD** at any given span. **MAX RECOMMENDED LOAD** represents a 2:1 factor of safety on **ULTIMATE CAPACITY**.

Loads

Walking loads, typically 50-65 PSF maximum, are recommended for pedestrian traffic. Deflections for personnel comfort are typically limited to the lesser of 3/8" or CLEAR SPAN divided by 125. For a firmer feel, limit deflection to the lesser of 1/4" or CLEAR SPAN divided by 200. The allowable loads in this table are for **STATIC LOAD CONDITIONS** at ambient temperatures only. Allowable loads for impact or dynamic conditions should be a minimum of **ONE-HALF** the values shown. Long-term loads will result in added deflection due to creep in the material and will also require higher safety factors to ensure acceptable performance. For applications at elevated temperatures, consult Fibergrate. The designer is further referenced to ASCE Structural Plastics Design Manual.

Grating Selection

Since Fibergrate also offers molded and Moltruded® fiberglass gratings, the following table is included as a guide to help in choosing the best grating for a particular application.

	MOLDED GRATING		PULTRUDED GRATING	MOLTRUDED®	
	1" Rectangular Mesh	1", 1-1/2" & 2" Square Mesh		RIGIDEX I®	RIGIDEX II®
Corrosion Resistance	HR	HR	R	HR	HR
Strength/Stiffness (longest span)	R	R	HR	R	HR
Impact Resistance	R	HR	A	NR	R
Open Area (for drainage, aeration, light penetration)	HR	HR	A	HR	HR
Single-Direction Span	R	A	HR	HR	HR
Bidirection Span	NR	HR	NR	NR	NR
Ease of Layout and Installation	A	HR	A	A	A
Lightweight in Comparison to Metals	HR	HR	HR	HR	R
Custom Panel Sizes Available	A	R	R	NR	NR

HR = Highly Recommended R = Recommended A = Acceptable NR = Not Recommended