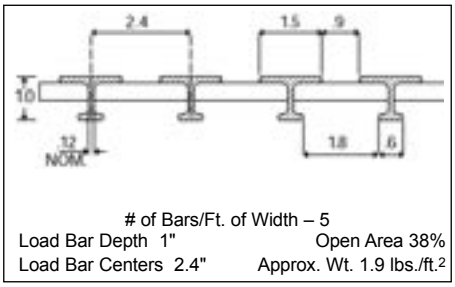
Safe-T-Span® Pedestrian Grating

Designed specifically for pedestrian walkways, Fibergrate's Safe-T-Span® pultruded pedestrian grating is ideal for any application where a slip-resistant, corrosion-resistant, durable, lightweight material is required. Safe-T-Span pedestrian pultruded grating is available in 1" and 1-1/2" depths and in several configurations and panel sizes. 1" deep Safe-T-Span pedestrian grating is designed for access areas and walkways where pedestrian traffic is the heaviest load. 1-1/2" Safe-T-Span pedestrian grating is approximately three times stiffer than the 1" deep version and is used for applications where wider spans (up to 72") or lower deflection criteria are required.

Safe-T-Span pultruded pedestrian grating was chosen by EAN Corporation for this walkway bridge for swimmers at South Cape Beach State Park near the Cape Cod region of Massachusetts.

Details

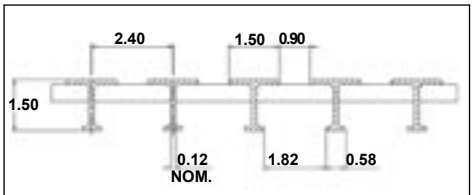
1" Deep, T3810



# of Bars/Ft. of Width – 5
Load Bar Depth 1" Open Area 38%
Load Bar Centers 2.4" Approx. Wt. 1.9 lbs./ft.²

Engineering Properties per FT of Width
A=1.76 IN² I=.23 IN⁴ S-top=.65 IN³ S-bot=.35 IN³
Average EI=1,120,000 LB-IN² (SPAN > 24")

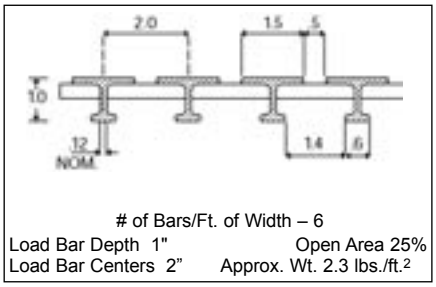
1-1/2" Deep, T3815



# of Bars/Ft. of Width – 5
Load Bar Depth 1-1/2" Open Area 38%
Load Bar Centers 2.4" Approx. Wt. 2.7 lbs./ft.²

Engineering Properties per FT of Width
A=2.28 IN² I=.66 IN⁴ S-top=1.23 IN³ S-bot=.69 IN³
Average EI=3,440,000 LB-IN² (SPAN > 24")

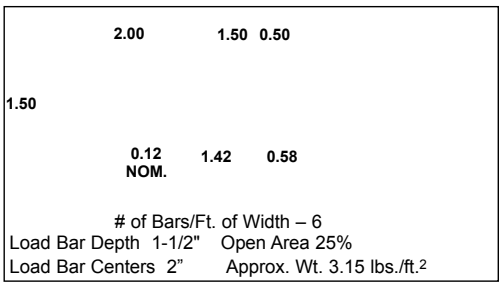
1" Deep, T2510
ADA Compliant



# of Bars/Ft. of Width – 6
Load Bar Depth 1" Open Area 25%
Load Bar Centers 2" Approx. Wt. 2.3 lbs./ft.²

Engineering Properties per FT of Width
A=2.11 IN² I=.27 IN⁴ S-top=.79 IN³ S-bot=.42 IN³
Average EI=1,340,000 LB-IN² (SPAN > 24")

1-1/2" Deep, T2515
ADA Compliant



# of Bars/Ft. of Width – 6
Load Bar Depth 1-1/2" Open Area 25%
Load Bar Centers 2" Approx. Wt. 3.15 lbs./ft.²

Engineering Properties per FT of Width
A=2.73 IN² I=.80 IN⁴ S-top=1.47 IN³ S-bot=.83 IN³
Average EI=4,130,000 LB-IN² (SPAN > 24")

Refer to chart on Page 4 for Grating Selection

Aqua Grate® Pedestrian Grating

Aqua Grate® T1210 and T1215 pultruded pedestrian grating is specifically engineered to withstand the corrosive conditions associated with recreational and general marine applications and to meet ADA guidelines. With its nominal 1/4" space between the 1-1/2" wide bearing bars, Aqua Grate offers optimum comfort and safety for bathers walking with bare feet — a must in high traffic public recreational areas. Aqua Grate's unique combination of corrosion resistance and light weight provides easy, inexpensive installation in such facilities as swimming pools, water parks, marinas and piers.

Aqua Grate is available in a variety of lengths and widths, making it useful for a number of waterfront and recreational applications. Aqua Grate's sugargrit surface provides a high level of slip resistance, yet at the same time offers a comfortable barefoot walking surface. Protection against long-term UV exposure is provided by a synthetic surfacing veil and UV inhibitors in the resin formulation. Whether subjected to chlorinated water in public and private pools or salt water environments found in marine and waterfront applications, Aqua Grate will offer years of low-cost, low maintenance service.

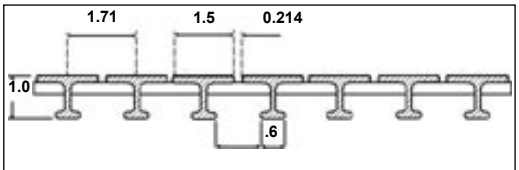
Applications

- *Public and Private Swimming Pools*
- *Water Parks*
- *Theme Parks*
- *Boat Docks and Piers*
- *Marinas*
- *Zoos and Aquariums*

Schlitterbahn Waterpark, New Braunfels, Texas
Safe-T-Span Pultruded Aqua Grate Pedestrian Grating

Details

1" Deep, T1210
ADA Compliant

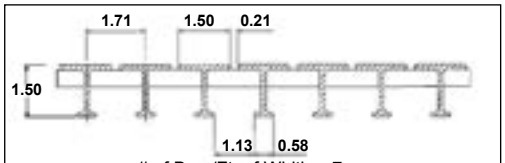


# of Bars/Ft. of Width – 7
Load Bar Depth 1" Open Area 12%
Load Bar Centers 1.714" Approx. Wt. 2.6 lbs./ft.^{2}

Engineering Properties per FT of Width

A=2.46 IN^2 I=.32 IN^4 S-top=.94 IN^3 S-bot=.49 IN^3
Average EI = 1,568,000 LB-IN^2 (SPAN ≥ 24")

1-1/2" Deep, T1215
ADA Compliant



# of Bars/Ft. of Width – 7
Load Bar Depth 1-1/2" Open Area 12%
Load Bar Centers 1.714" Approx. Wt. 3.58 lbs./ft.^{2}

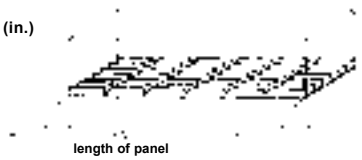
Engineering Properties per FT of Width

A=3.19 IN^2 I=.93 IN^4 S-top=1.72 IN^3 S-bot=.97 IN^3
Average EI=4,827,000 LB-IN^2 (SPAN > 24")

Refer to chart on Page 4 for Grating Selection

Pedestrian Grating Load Charts

U Uniform load – lbs/ft²
□U Uniform load deflection (in.)



Safe-T-Span® Uniform Load Table — Deflections in Inches

SPAN (in)	STYLE	Load = lbs. / ft.² 50	100	200	300	500	1,000	2,000	MAXIMUM RECOMMENDED LOAD	ULTIMATE CAPACITY (psf)
12	T3810	<.01	<.01	<.01	<.01	0.01	0.03	0.06	2730	5460
	T2510	<.01	<.01	<.01	<.01	0.01	0.02	0.05	3280	6560
	T1210	<.01	<.01	<.01	<.01	0.01	0.02	0.04	4590	9180
	T3815	<.01	<.01	<.01	<.01	0.01	0.01	0.03	4220	8440
	T2515	<.01	<.01	<.01	<.01	0.01	0.01	0.02	5060	10120
	T1215	<.01	<.01	<.01	<.01	<.01	0.01	0.02	5910	11820
18	T3810	<.01	0.01	0.02	0.04	0.06	0.12	—	1820	3640
	T2510	<.01	0.01	0.02	0.03	0.05	0.10	0.20	2180	4360
	T1210	<.01	<.01	0.01	0.03	0.04	0.09	0.18	3060	6120
	T3815	<.01	<.01	0.01	0.01	0.02	0.05	0.10	2810	5620
	T2515	<.01	<.01	0.01	0.01	0.02	0.04	0.08	3380	6760
	T1215	<.01	<.01	0.01	0.01	0.02	0.04	0.07	3940	7880
24	T3810	0.02	0.03	0.07	0.10	0.17	0.34	—	1370	2740
	T2510	0.01	0.03	0.06	0.08	0.14	0.28	—	1640	3280
	T1210	0.01	0.02	0.05	0.07	0.12	0.24	0.48	2290	4580
	T3815	0.01	0.01	0.02	0.04	0.06	0.12	0.24	2110	4220
	T2515	<.01	0.01	0.02	0.03	0.05	0.10	0.20	2530	5060
	T1215	<.01	0.01	0.02	0.03	0.04	0.09	0.17	2950	5900
30	T3810	0.04	0.08	0.16	0.24	0.40	—	—	1090	2180
	T2510	0.03	0.07	0.13	0.20	0.33	—	—	1310	2620
	T1210	0.03	0.06	0.11	0.17	0.29	—	—	1840	3680
	T3815	0.01	0.03	0.06	0.08	0.14	0.28	—	1690	3380
	T2515	0.01	0.02	0.05	0.07	0.12	0.23	0.47	2030	4060
	T1215	0.01	0.02	0.04	0.06	0.10	0.20	0.40	2360	4720
36	T3810	0.08	0.16	0.32	0.49	—	—	—	860	1720
	T2510	0.07	0.14	0.27	0.41	—	—	—	1040	2080
	T1210	0.06	0.11	0.23	0.35	—	—	—	1450	2900
	T3815	0.03	0.06	0.11	0.17	0.28	—	—	1410	2820
	T2515	0.02	0.05	0.09	0.14	0.23	0.46	—	1690	3380
	T1215	0.02	0.04	0.08	0.12	0.20	0.40	—	1970	3940
42	T3810	0.15	0.30	—	—	—	—	—	630	1260
	T2510	0.12	0.25	0.50	—	—	—	—	760	1520
	T1210	0.11	0.21	0.43	—	—	—	—	1060	2120
	T3815	0.05	0.10	0.20	0.30	—	—	—	1100	2200
	T2515	0.04	0.08	0.17	0.25	0.41	—	—	1320	2640
	T1215	0.04	0.07	0.14	0.21	0.36	—	—	1540	3080
48	T3810	0.25	0.50	—	—	—	—	—	490	980
	T2510	0.21	0.42	—	—	—	—	—	580	1160
	T1210	0.18	0.36	—	—	—	—	—	820	1640
	T3815	0.08	0.17	0.33	0.50	—	—	—	840	1680
	T2515	0.07	0.14	0.28	0.42	—	—	—	1010	2020
	T1215	0.06	0.12	0.24	0.36	—	—	—	1180	2360
54	T3815	0.13	0.26	—	—	—	—	—	670	1340
	T2515	0.11	0.22	0.44	—	—	—	—	800	1600
	T1215	0.09	0.19	0.38	—	—	—	—	930	1860
60	T3815	0.20	0.40	—	—	—	—	—	540	1080
	T2515	0.16	0.33	—	—	—	—	—	650	1300
	T1215	0.14	0.28	—	—	—	—	—	760	1520
66	T3815	0.29	—	—	—	—	—	—	450	900
	T2515	0.24	0.48	—	—	—	—	—	540	1080
	T1215	0.21	0.41	—	—	—	—	—	620	1240
72	T3815	0.41	—	—	—	—	—	—	370	740
	T2515	0.34	—	—	—	—	—	—	450	900
	T1215	0.29	—	—	—	—	—	—	520	1040

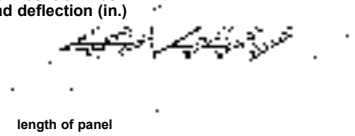
IMPORTANT: Installation should provide for fully supported abutments of grating panels. Otherwise, higher deflection values may be experienced, and tripping hazards may occur. Stub bars should not be less than 1" in clip attachment areas. Safe-T-Span pedestrian grating load bars at platform edges should be fully supported.

NOTES:

1. 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.
2. 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.
3. 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.
4. 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.
5. All gratings were tested in accordance with the proposed standard of the Fiberglass Grating Manufacturers Council of the American Composites Manufacturers Association (ACMA).

Pedestrian Grating Load Charts

C Concentrated line load– lbs/ft of width
□C Concentrated line load deflection (in.)



length of panel

Safe-T-Span® Concentrated Line Load Table — Deflections in Inches

SPAN (in)	STYLE	Load = lbs. / ft. OF WIDTH 50	100	200	300	500	1,000	2,000	MAXIMUM RECOMMENDED LOAD	ULTIMATE CAPACITY (psf)
12	T3810	<.01	<.01	<.01	0.01	0.02	0.05	0.09	2730	5460
	T2510	<.01	<.01	<.01	0.01	0.02	0.04	0.08	3280	6560
	T1210	<.01	<.01	<.01	<.01	0.01	0.04	0.06	4590	9180
	T3815	<.01	<.01	<.01	0.01	0.01	0.02	0.04	4220	8440
	T2515	<.01	<.01	<.01	0.01	0.01	0.02	0.04	5060	10120
	T1215	<.01	<.01	<.01	<.01	0.01	0.02	0.03	5900	11800
18	T3810	<.01	0.01	0.03	0.04	0.07	0.13	0.26	2590	5180
	T2510	<.01	0.01	0.02	0.03	0.05	0.11	0.22	3100	6200
	T1210	<.01	0.01	0.02	0.03	0.05	0.09	0.19	4350	8700
	T3815	<.01	0.01	0.01	0.02	0.03	0.05	0.10	4220	8440
	T2515	<.01	<.01	0.01	0.01	0.02	0.04	0.09	5060	10120
	T1215	<.01	<.01	0.01	0.01	0.02	0.04	0.07	5900	11800
24	T3810	0.01	0.03	0.05	0.08	0.13	0.27	—	1940	3880
	T2510	0.01	0.02	0.04	0.07	0.11	0.22	0.45	2330	4660
	T1210	0.01	0.02	0.04	0.06	0.09	0.19	0.38	3260	6520
	T3815	<.01	0.01	0.02	0.03	0.05	0.09	0.19	3370	6740
	T2515	<.01	0.01	0.02	0.02	0.04	0.08	0.16	4040	8080
	T1215	<.01	<.01	0.01	0.02	0.03	0.07	0.14	4720	9440
30	T3810	0.03	0.05	0.10	0.15	0.26	—	—	1550	3100
	T2510	0.02	0.04	0.09	0.13	0.21	0.43	—	1860	3720
	T1210	0.02	0.04	0.07	0.11	0.19	0.36	—	2610	5220
	T3815	0.01	0.03	0.04	0.05	0.09	0.18	0.36	2700	5400
	T2515	0.01	0.01	0.03	0.04	0.07	0.15	0.30	3230	6460
	T1215	0.01	0.01	0.03	0.04	0.06	0.13	0.25	3770	7540
36	T3810	0.04	0.09	0.17	0.26	0.43	—	—	1290	2580
	T2510	0.04	0.07	0.14	0.22	0.36	—	—	1550	3100
	T1210	0.03	0.06	0.12	0.19	0.31	—	—	2170	4340
	T3815	0.01	0.03	0.06	0.09	0.15	0.30	—	2250	4500
	T2515	0.01	0.02	0.05	0.07	0.12	0.25	0.49	2700	5400
	T1215	0.01	0.02	0.04	0.06	0.11	0.21	0.42	3140	6280
42	T3810	0.07	0.14	0.27	0.41	—	—	—	1110	2220
	T2510	0.06	0.11	0.23	0.34	—	—	—	1330	2660
	T1210	0.05	0.10	0.19	0.29	0.49	—	—	1860	3720
	T3815	0.02	0.09	0.09	0.14	0.23	0.45	—	1930	3860
	T2515	0.02	0.04	0.08	0.11	0.19	0.38	—	2310	4620
	T1215	0.02	0.03	0.06	0.10	0.16	0.32	—	2700	5400
48	T3810	0.10	0.20	0.40	—	—	—	—	970	1940
	T2510	0.08	0.17	0.33	0.50	—	—	—	1160	2320
	T1210	0.07	0.14	0.29	0.43	—	—	—	1630	3260
	T3815	0.03	0.07	0.13	0.20	0.33	—	—	1680	3360
	T2515	0.03	0.06	0.11	0.17	0.28	—	—	2020	4040
	T1215	0.02	0.05	0.10	0.14	0.24	0.48	—	2360	4720
54	T3815	0.05	0.09	0.19	0.28	0.47	—	—	1500	3000
	T2515	0.04	0.08	0.16	0.23	0.39	—	—	1800	3600
	T1215	0.03	0.07	0.13	0.20	0.33	—	—	2100	4200
60	T3815	0.06	0.13	0.25	0.38	—	—	—	1350	2700
	T2515	0.05	0.10	0.21	0.31	—	—	—	1620	3240
	T1215	0.04	0.09	0.18	0.27	0.45	—	—	1890	3780
66	T3815	0.08	0.17	0.33	—	—	—	—	1230	2460
	T2515	0.07	0.14	0.28	0.42	—	—	—	1470	2940
	T1215	0.06	0.12	0.24	0.36	—	—	—	1720	3440
72	T3815	0.11	0.22	0.43	—	—	—	—	1120	2240
	T2515	0.09	0.18	0.36	—	—	—	—	1350	2700
	T1215	0.08	0.15	0.31	0.46	—	—	—	1500	3140

IMPORTANT: Installation should provide for fully supported abutments of grating panels. Otherwise, higher deflection values may be experienced, and tripping hazards may occur. Stub bars should not be less than 1" in clip attachment areas. Safe-T-Span pedestrian grating load bars at platform edges should be fully supported.

NOTES:

1. 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.
2. 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.
3. 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.
4. 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.
5. 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