

# Safe-T-Span® Pedestrian Grating Details

Designed specifically for pedestrian walkways, Fibergrate's Safe-T-Span pultruded pedestrian grating is ideal for applications where a slip-resistant, corrosion-resistant, durable, lightweight material is required. Safe-T-Span pedestrian pultruded grating is available in 25mm and 38mm depths and in several configurations and panel sizes. Safe-T-Span 25mm deep pedestrian grating is designed for access areas and walkways where pedestrian traffic is the heaviest load. Pedestrian 38mm deep grating is approximately three times stiffer than the 25mm deep version and is used for applications where wider spans (up to 1829mm) or lower deflection criteria are required.



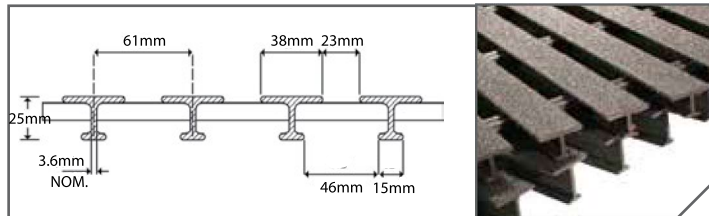
Pontoon Boardwalk in Portland, Oregon

## Grating Details

Refer to chart on page 4 for Grating Selection.

### 25mm Deep T3810

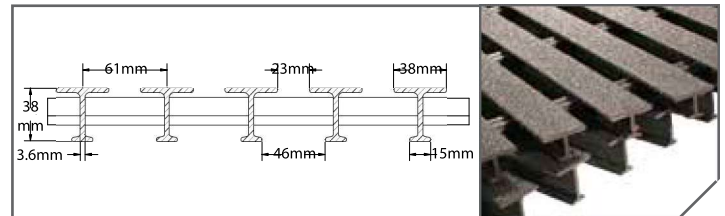
# of Bars/m of Width	Load Bar Depth	Open Area	Load Bar Centres	Approximate Weight
16	25mm	38%	61mm	9.3 kg/m <sup>2</sup>



Section Properties per m of Width:  $A=3.73 \times 10^3 \text{ mm}^2$   $I=3.14 \times 10^9 \text{ mm}^4$   $St=3.49 \times 10^4 \text{ mm}^3$   $Sb=1.88 \times 10^4 \text{ mm}^3$   
Average EI = 14447 kN-mm<sup>2</sup> (SPAN ≥ 610mm)

### 38mm Deep T3815

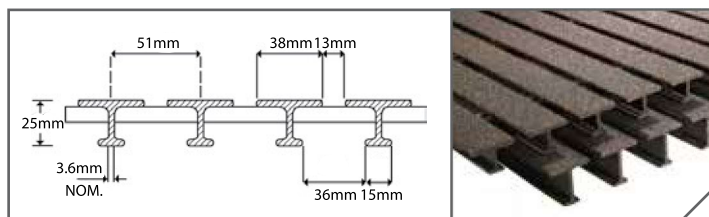
# of Bars/m of Width	Load Bar Depth	Open Area	Load Bar Centres	Approximate Weight
16	38mm	38%	61mm	13 kg/m <sup>2</sup>



Section Properties per m of Width:  $A=4.83 \times 10^3 \text{ mm}^2$   $I=9.01 \times 10^9 \text{ mm}^4$   $St=6.61 \times 10^4 \text{ mm}^3$   $Sb=3.71 \times 10^4 \text{ mm}^3$   
Average EI = 29570 kN-mm<sup>2</sup> (SPAN ≥ 610mm)

### 25mm Deep T2510 (ADA Compliant)

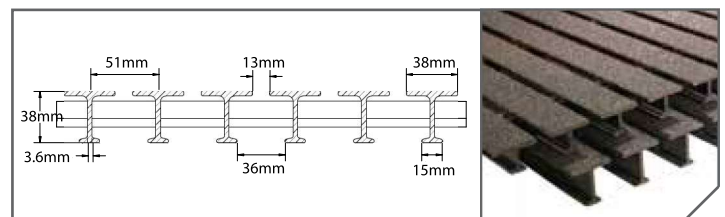
# of Bars/m of Width	Load Bar Depth	Open Area	Load Bar Centres	Approximate Weight
20	25mm	25%	51mm	12 kg/m <sup>2</sup>



Section Properties per m of Width:  $A=4.47 \times 10^3 \text{ mm}^2$   $I=3.69 \times 10^9 \text{ mm}^4$   $St=4.25 \times 10^4 \text{ mm}^3$   $Sb=2.26 \times 10^4 \text{ mm}^3$   
Average EI = 12110 kN-mm<sup>2</sup> (SPAN ≥ 610mm)

### 38mm Deep T2515 (ADA Compliant)

# of Bars/m of Width	Load Bar Depth	Open Area	Load Bar Centres	Approximate Weight
20	38mm	25%	51mm	14 kg/m <sup>2</sup>



Section Properties per m of Width:  $A=5.78 \times 10^3 \text{ mm}^2$   $I=1.09 \times 10^{10} \text{ mm}^4$   $St=7.90 \times 10^4 \text{ mm}^3$   $Sb=4.46 \times 10^4 \text{ mm}^3$   
Average EI = 35773 kN-mm<sup>2</sup> (SPAN ≥ 610mm)

# Aqua Grate® Pedestrian Grating Details

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 6.4mm space between the 38mm 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 grating has a unique combination of corrosion resistance and lightweight, which provides easy, inexpensive installations in facilities such as swimming pools, water parks, marinas, and piers.



Boat dock on Horseshoe Lake in Haliburton, Ontario.

Aqua Grate is available in various lengths and widths, making it suitable for a range of waterfront and recreational applications. The fine grit surface of Aqua Grate 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 saltwater environments found in marine and waterfront applications, Aqua Grate will provide years of low-cost, low-maintenance service.



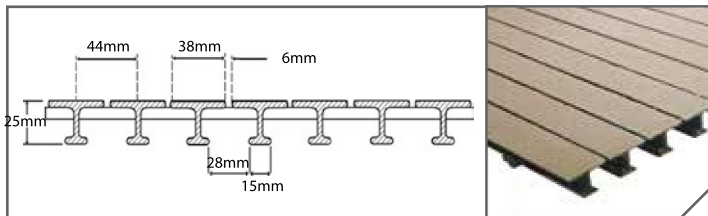
Corinthian Yacht Club Harbor in San Francisco, California.

## Grating Details

Refer to chart on page 4 for Grating Selection.

### 25mm Deep T1210 (ADA Compliant)

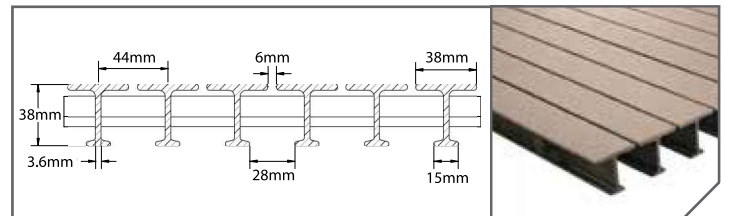
# of Bars/ m of Width	Load Bar Depth	Open Area	Load Bar Centres	Approximate Weight
23	25mm	12%	44mm	13 kg/m <sup>2</sup>



Section Properties per m of Width: A=5.21x10<sup>3</sup> mm<sup>2</sup> I=4.37x10<sup>5</sup> mm<sup>4</sup> St=5.05x10<sup>4</sup> mm<sup>3</sup> Sb=2.63x10<sup>4</sup> IN<sup>3</sup>  
Average EI = 14342 kN-mm<sup>2</sup> (SPAN ≥ 610mm)

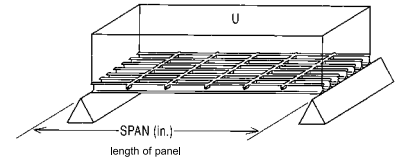
### 38mm Deep T1215 (ADA Compliant)

# of Bars/ m of Width	Load Bar Depth	Open Area	Load Bar Centres	Approximate Weight
23	38mm	12%	44mm	15 kg/m <sup>2</sup>



Section Properties per m of Width: A=6.75x10<sup>3</sup> mm<sup>2</sup> I=1.27x10<sup>6</sup> mm<sup>4</sup> St=9.25x10<sup>4</sup> mm<sup>3</sup> Sb=5.22x10<sup>4</sup> mm<sup>3</sup>  
Average EI = 41680 kN-mm<sup>2</sup> (SPAN ≥ 610mm)

# Pedestrian Series Uniform Load Chart



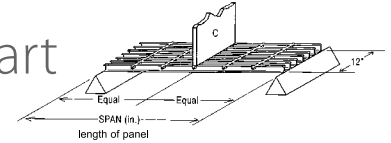
PEDESTRIAN SERIES SAFE-T-SPAN UNIFORM LOAD TABLE - DEFLECTIONS IN MILLIMETRES										
CLEAR SPAN (mm)	STYLE	LOAD (kN/m <sup>2</sup> )							MAXIMUM RECOMMENDED LOAD (kN/m <sup>2</sup> )	ULTIMATE CAPACITY (kN/m <sup>2</sup> )
		3.0	5.0	10.0	20.0	30.0	50.0	90.0		
400	T3810	< 0.3	< 0.3	0.4	0.8	1.3	2.1	3.9	100	200
	T3815	< 0.3	< 0.3	< 0.3	< 0.3	0.3	0.6	1.1	156	313
	T2510	< 0.3	< 0.3	0.3	0.7	1.1	1.9	3.4	120	240
	T2515	< 0.3	< 0.3	< 0.3	0.4	0.6	0.9	1.6	189	378
	T1210	< 0.3	< 0.3	< 0.3	0.6	0.9	1.5	2.7	168	336
	T1215	< 0.3	< 0.3	< 0.3	0.3	0.5	0.7	1.2	205	410
600	T3810	0.5	0.8	1.7	3.4	5.0	8.4		66	133
	T3815	< 0.3	< 0.3	0.6	1.2	1.8	3.1	5.6	102	204
	T2510	0.4	0.7	1.4	2.8	4.1	6.9	12.4	79	159
	T2515	< 0.3	< 0.3	0.5	1.1	1.6	2.7	4.9	123	246
	T1210	0.3	0.6	1.2	2.4	3.6	6.1	11.0	111	223
	T1215	< 0.3	< 0.3	0.5	0.9	1.3	2.2	4.0	147	293
800	T3810	1.5	2.5	5.1	10.2	—	—	—	50	99
	T3815	0.6	0.9	1.8	3.7	5.5	9.1	—	76	153
	T2510	1.3	2.1	4.3	8.5	—	—	—	60	119
	T2515	0.4	0.7	1.4	2.9	4.3	7.1	—	90	181
	T1210	1.1	1.8	3.7	7.3	11.0	—	—	83	167
	T1215	0.4	0.7	1.3	2.5	3.8	6.2	11.2	108	216
1000	T3810	3.7	6.1	12.3	—	—	—	—	35	70
	T3815	1.3	2.1	4.2	8.3	12.4	—	—	60	120
	T2510	3.1	5.1	10.3	—	—	—	—	42	84
	T2515	1.1	1.7	3.4	6.8	10.2	—	—	71	142
	T1210	2.6	4.4	8.8	—	—	—	—	59	117
	T1215	0.9	1.5	3.0	6.0	8.9	—	—	81	162
1200	T3810	7.5	12.5	—	—	—	—	—	24	48
	T3815	2.5	4.1	8.2	—	—	—	—	43	86
	T2510	6.3	10.5	—	—	—	—	—	28	57
	T2515	2.1	3.5	7.0	—	—	—	—	53	106
	T1210	5.4	9.0	—	—	—	—	—	40	80
	T1215	1.8	3.0	6.0	12.1	—	—	—	60	120
1400	T3815	4.5	7.5	—	—	—	—	—	29	57
	T2515	3.7	6.3	—	—	—	—	—	36	71
	T1215	3.2	5.4	10.8	—	—	—	—	43	86
1600	T3815	7.8	—	—	—	—	—	—	31	62
	T2515	6.3	10.6	—	—	—	—	—	26	52
	T1215	5.5	9.0	—	—	—	—	—	32	64
1800	T3815	13.0	—	—	—	—	—	—	75	151
	T2515	10.2	—	—	—	—	—	—	40	81
	T1215	8.9	—	—	—	—	—	—	31	62

*IMPORTANT: Installation should cater to 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 25mm in clip attachment areas. Safe-T-Span pedestrian grating load bars at platform edges should be fully supported.*

**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 244-317 kNm<sup>2</sup> maximum are recommended for pedestrian traffic. Deflections for worker comfort are typically limited to the lesser of 9.5mm or CLEAR SPAN divided by 125; for a firmer feel, limit deflection to the lesser of 6.4mm 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 ANSI Standard: GRP Composites Grating Manual for Pultruded and Moulded Grating, and Stair Treads.
- Gratings in this table are not rated for motorized vehicle traffic. For these applications, please select appropriate High Load Capacity grating.

# Pedestrian Series Concentrated Line Load Chart



**PEDESTRIAN SERIES SAFE-T-SPAN CONCENTRATED LINE LOAD TABLE - DEFLECTIONS IN MILLIMETRES**

CLEAR SPAN (mm)	STYLE	LOAD (kN/m of Width)							MAXIMUM RECOMMENDED LOAD (kN/m)	ULTIMATE CAPACITY (kN/m)
		0.7	1.5	5.0	10.0	15.0	20.0	30.0		
400	T3810	< 0.3	< 0.3	0.8	1.6	2.4	3.2	4.8	39	78
	T3815	< 0.3	< 0.3	< 0.3	0.6	1.2	1.9	3.2	60	121
	T2510	< 0.3	< 0.3	0.7	2.2	3.6	5.0	7.9	47	94
	T2515	< 0.3	< 0.3	< 0.3	0.5	0.8	1.1	1.6	72	145
	T1210	< 0.3	< 0.3	0.6	1.2	1.7	2.3	3.4	66	131
	T1215	< 0.3	< 0.3	< 0.3	0.5	0.7	1.0	1.4	85	169
600	T3810	0.3	0.7	2.3	4.5	6.8	9.1	—	30	60
	T3815	< 0.3	< 0.3	0.4	1.6	2.8	3.9	6.2	51	101
	T2510	1.0	1.1	1.7	2.6	3.4	4.2	5.9	36	72
	T2515	< 0.3	< 0.3	0.7	1.4	2.1	2.8	4.2	61	121
	T1210	< 0.3	0.5	1.6	3.2	4.8	6.4	9.6	50	100
	T1215	< 0.3	< 0.3	0.6	1.2	1.8	2.4	3.6	71	142
800	T3810	0.7	1.5	5.1	10.2	—	—	—	21	42
	T3815	< 0.3	< 0.3	1.4	3.5	5.6	7.7	11.8	39	79
	T2510	2.0	2.4	4.0	6.3	8.6	10.8	—	25	50
	T2515	< 0.3	0.4	1.5	2.9	4.4	5.9	8.9	47	94
	T1210	0.5	1.1	3.7	7.3	10.9	—	—	35	71
	T1215	< 0.3	0.4	1.2	2.5	3.7	5.0	7.5	55	110
1000	T3810	1.4	3.0	9.8	—	—	—	—	17	35
	T3815	< 0.3	0.4	3.0	6.5	10.1	—	—	30	60
	T2510	1.3	2.6	8.2	—	—	—	—	21	41
	T2515	0.4	0.8	2.8	5.5	8.2	11.0	—	36	71
	T1210	1.0	2.1	7.0	—	—	—	—	29	58
	T1215	0.3	0.7	2.3	4.7	7.0	9.3	—	42	83
1200	T3810	2.3	5.0	—	—	—	—	—	15	29
	T3815	< 0.3	1.1	5.2	11.0	—	—	—	24	47
	T2510	1.7	4.0	—	—	—	—	—	17	35
	T2515	0.7	1.4	4.6	9.2	—	—	—	28	57
	T1210	1.6	3.5	12.0	—	—	—	—	25	49
	T1215	0.6	1.2	3.9	7.9	11.8	—	—	33	66
1400	T3815	0.5	1.9	8.2	—	—	—	—	21	42
	T2515	1.0	2.2	7.2	—	—	—	—	25	50
	T1215	0.8	1.8	6.1	12.3	—	—	—	30	59
1600	T3815	1.0	3.1	12.2	—	—	—	—	20	40
	T2515	1.5	3.2	10.6	—	—	—	—	24	48
	T1215	1.2	2.7	9.1	—	—	—	—	28	56
1800	T3815	1.8	4.7	—	—	—	—	—	17	33
	T2515	2.1	4.5	—	—	—	—	—	20	40
	T1215	1.8	3.8	—	—	—	—	—	22	46

**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 25mm in clip attachment areas. Safe-T-Span pedestrian grating load bars at platform edges should be fully supported.

**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.
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