Safe-T-Span® Industrial Grating Details

I4010 & I6010 Grating

Copper Mining Facility

Offshore Oil & Gas Platform

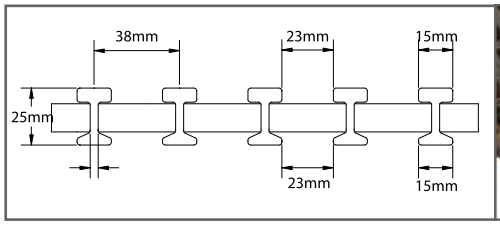
Safe-T-Span industrial grating is available in 25 mm, 32 mm, and 38 mm depths in an I-bar configuration with 40%, 50%, and 60% open areas. A 51 mm depth T-bar configuration with 33% or 50% open area is also available for applications requiring wider spans or lower deflections. For details and load charts for 32 mm depth products, please visit our website at *fibergrate.uk > Products > Pultruded Grating > Custom Pultruded Gratings.*

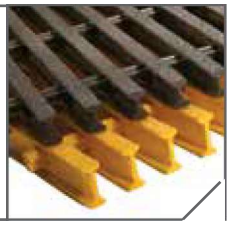
Grating Details

Refer to chart on page 4 for Grating Selection.

25 mm Deep I6010

# of Bars/ m of Width	Load Bar Depth	Open Area	Load Bar Centres	Approximate Weight
26	25 mm	60%	38 mm	13.3 kg/m^2

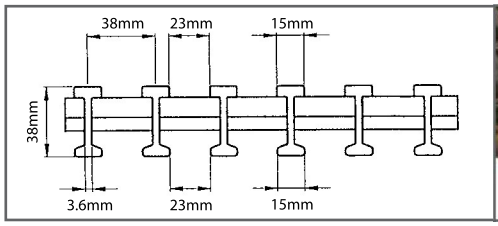




Section Properties per m of Width: A = 5.6x10^{3}mm^2 I = 4.5x10^5 mm^2 S = 3.4x10^4 mm^3
Average EI = 15983 kN·mm^2 (SPAN ≥ 610mm)

38 mm Deep I6015

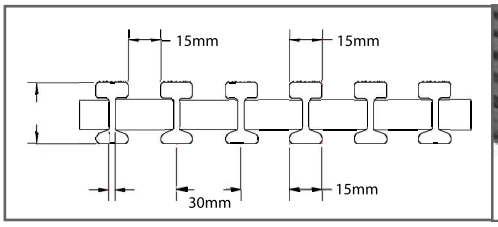
# of Bars/ m of Width	Load Bar Depth	Open Area	Load Bar Centres	Approximate Weight
26	38 mm	60%	38 mm	15.4 kg/m^2



Section Properties per m of Width: A = 6.8x10^{3}mm^2 I = 1.3x10^6 mm^4 S = 6.5x10^4 mm^3
Average EI = 43862 kN·mm^2 (SPAN ≥ 610mm)

25 mm Deep I5010

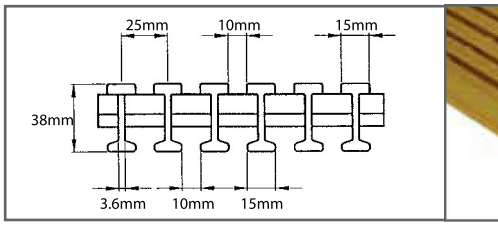
# of Bars/ m of Width	Load Bar Depth	Open Area	Load Bar Centres	Approximate Weight
33	25 mm	50%	30mm	15.9 kg/m^2

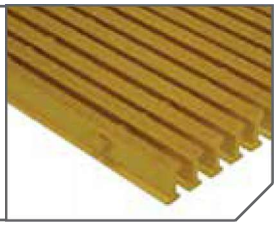


Section Properties per m of Width: A = 7.0x10^3 mm^2 I = 5.6x10^5 mm^4 S = 4.2x10^4 mm^3
Average EI = 19776 kN·mm^2 (SPAN ≥ 610mm)

38 mm Deep I4015 (ADA Compliant)

# of Bars/ m of Width	Load Bar Depth	Open Area	Load Bar Centres	Approximate Weight
39	38 mm	40%	25 mm	22.5 kg/m^2



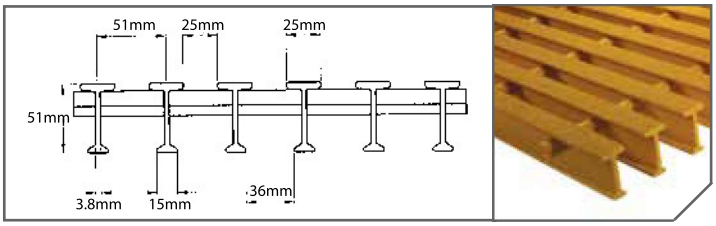


Section Properties per m of Width: A = 1.0x10^4 mm^2 I = 1.9x10^6 mm^4 S = 9.7x10^4 mm^3
Average EI = 65036 kN·mm^2 (SPAN ≥ 610mm)

Safe-T-Span® Industrial Grating Details

51mm Deep T5020

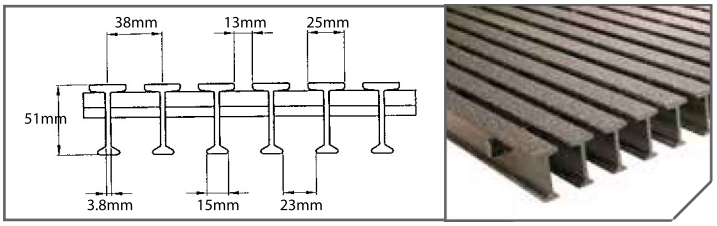
# of Bars/ m of Width	Load Bar Depth	Open Area	Load Bar Centres	Approximate Weight
20	51 mm	50%	51 mm	10.3 kg/m^2



Section Properties per m of Width: A=6.8x10^3 mm^2 I=2.3x10^6 mm^4 St=1.1x10^5 mm^3 Sb=7.9x10^4 mm^3
Average EI = 71738 kN·mm^2 (SPAN ≥ 610mm)

51 mm Deep T3320 (ADA Compliant)

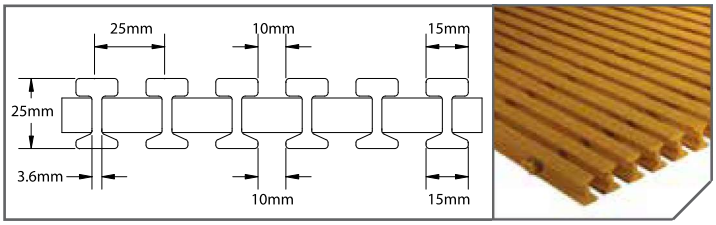
# of Bars/ m of Width	Load Bar Depth	Open Area	Load Bar Centres	Approximate Weight
26	51 mm	33%	38 mm	18.0 kg/m^2



Section Properties per m of Width: A=9.1x10^3 mm^2 I=3.3x10^6 mm^4 St=1.4x10^5 mm^3 Sb=1.1x10^5 mm^3
Average EI = 93449 kN·mm^2 (SPAN ≥ 610mm)

25 mm Deep I4010 (ADA Compliant)

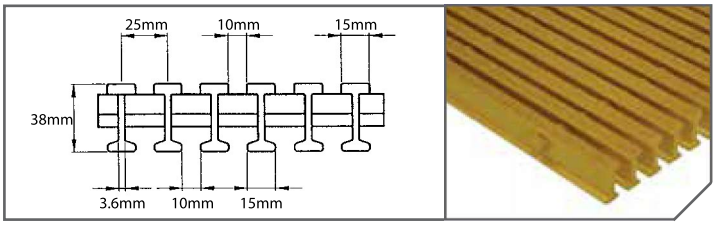
# of Bars/ m of Width	Load Bar Depth	Open Area	Load Bar Centres	Approximate Weight
39	25 mm	40%	25 mm	18.4 kg/m^2



Section Properties per m of Width: A = 8.4x10^3 mm^2 I = 6.8x10^5 mm^4 S = 5.1x10^4 mm^3
Average EI = 23442 kN·mm^2 (SPAN ≥ 610mm)

38 mm Deep I4015 (ADA Compliant)

# of Bars/ m of Width	Load Bar Depth	Open Area	Load Bar Centres	Approximate Weight
39	38 mm	40%	25 mm	22.5 kg/m^2



Section Properties per m of Width: A = 1.0x10^4 mm^2 I = 1.9x10^6 mm^4 S = 9.7x10^4 mm^3
Average EI = 65036 kN·mm^2 (SPAN ≥ 610mm)

Safe-T-Span® High Load Capacity Grating

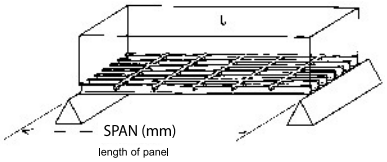
High Load Capacity (HI) pultruded grating is yet another product in the arsenal of engineered glass reinforced plastic (GRP) solutions by Fibergrate. While capitalising on some of the traditional benefits of pultruded grating products - high strength, corrosion resistance, slip resistance, fire retardancy, non-conductivity, and low maintenance - this pultruded GRP product has been engineered to carry the forklift and tractor trailer loads that traditional pultruded GRP grating products are unable to support.

- 37%, 47%, and 58% open surface area
- Available in 25 mm, 38 mm, 51 mm, 64 mm, and 76 mm depths
- Rated for up to H20 loads in all five depths
- Flame spread rating of 25 or less (when tested in accordance with ASTM E-84), and a Class 1 Fire Rating
- HI37 Grating is ADA Compliant

- Standard panels consist of:
  - Fire-retardant vinyl ester resin system
  - Dark grey in color
  - Aluminum oxide grit top surface

Each HI grating is specially engineered to meet specific requirements. Contact the Fibergrate engineering team to determine which grating offers the best solution for your high load needs. (Applications with traffic perpendicular to trench or with turning wheel loads, contact Fibergrate engineering for design assistance.)

Industrial Series Uniform Load Chart



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

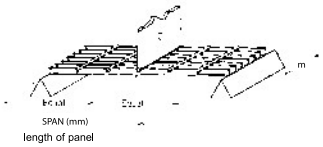
INDUSTRIAL SERIES SAFE-T-SPAN UNIFORM LOAD TABLE - DEFLECTIONS IN MILLIMETRES

CLEAR SPAN (mm)	STYLE	LOAD (kN/m²) 3.0	5.0	10.0	20.0	30.0	50.0	100.0	MAXIMUM RECOMMENDED LOAD (kN/m²)	ULTIMATE CAPACITY (kN/m²)
400	I6010	< 0.3	< 0.3	0.3	0.6	0.9	1.4	2.8	257	514
	I6015	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	0.4	538	1076
	I5010	< 0.3	< 0.3	< 0.3	< 0.3	0.4	0.9	2.2	321	641
	I5015	< 0.3	< 0.3	< 0.3	< 0.3	0.3	0.5	1.1	745	1491
	T5020	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	574	1148
	I4010	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	385	769
	I4015	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	863	1727
	T3320	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	766	1532
600	I6010	0.3	0.6	1.2	2.3	3.5	5.9	11.8	140	280
	I6015	< 0.3	< 0.3	0.5	0.9	1.4	2.3	4.5	274	548
	I5010	< 0.3	0.3	1.0	2.5	3.9	6.8		175	351
	I5015	< 0.3	< 0.3	< 0.3	0.6	0.9	1.6	3.2	323	647
	T5020	< 0.3	< 0.3	< 0.3	0.6	1.0	1.7	3.4	305	610
	I4010	0.3	0.5	0.9	1.7	2.6	4.2	8.4	210	420
	I4015	< 0.3	< 0.3	0.4	0.7	1.1	1.8	3.5	401	803
	T3320	< 0.3	< 0.3	< 0.3	0.5	0.8	1.2	2.5	407	813
800	I6010	1.0	1.7	3.4	6.8	10.2	—	—	80	161
	I6015	0.4	0.7	1.3	2.6	3.9	6.5	—	148	297
	I5010	1.1	1.5	2.4	4.4	6.3	10.1	—	101	202
	I5015	< 0.3	0.4	0.9	1.9	3.0	5.0	10.1	179	357
	T5020	< 0.3	0.4	0.8	1.5	2.3	3.8	7.6	173	346
	I4010	0.7	1.2	2.5	5.0	7.5	12.4	—	121	242
	I4015	< 0.3	0.5	0.9	1.7	2.5	4.1	8.2	210	420
	T3320	< 0.3	0.3	0.6	1.1	1.7	2.8	5.7	231	462
1000	I6010	2.3	3.9	7.8	—	—	—	—	52	104
	I6015	0.9	1.4	2.8	5.6	8.4	—	—	96	192
	I5010	2.8	3.3	4.7	7.5	10.2	—	—	65	129
	I5015	0.6	1.0	2.2	4.4	6.7	11.3	—	133	265
	T5020	0.5	0.9	1.8	3.5	5.2	8.7	—	114	229
	I4010	1.5	2.4	4.9	9.8	—	—	—	78	155
	I4015	0.6	0.9	1.9	3.7	5.5	9.2	—	147	294
	T3320	0.4	0.7	1.3	2.6	4.0	6.6	—	152	305
1200	I6010	4.3	7.3	—	—	—	—	—	36	72
	I6015	1.8	2.9	5.8	11.4	—	—	—	72	144
	I5010	4.7	6.3	10.4	—	—	—	—	45	90
	I5015	1.3	2.2	4.5	9.1		—	—	93	186
	T5020	1.1	1.8	3.7	7.4	11.1	—	—	85	169
	I4010	3.0	4.9	9.7	—	—	—	—	54	108
	I4015	1.2	1.9	3.9	7.8	11.7	—	—	119	237
	T3320	0.8	1.4	2.8	5.6	8.4	—	—	112	225
1400	I6010	6.7	11.9	—	—	—	—	—	18	36
	I6015	3.4	5.6	11.3	—	—	—	—	53	106
	I5010	6.2	11.3	—	—	—	—	—	32	65
	I5015	2.6	4.4	8.8	—	—	—	—	52	104
	T5020	2.1	3.4	6.9	—	—	—	—	60	120
	I4010	6.0	9.9	—	—	—	—	—	39	77
	I4015	2.2	3.7	7.5	—	—	—	—	80	160
	T3320	1.6	2.6	5.2	10.4	—	—	—	79	158
1600	I6015	6.0	10.3	—	—	—	—	—	36	72
	I5015	4.7	8.0	—	—	—	—	—	89	178
	T5020	3.5	5.7	11.4	—	—	—	—	37	75
	I4015	4.0	6.7	—	—	—	—	—	35	70
	T3320	2.6	4.3	8.6	—	—	—	—	48	97
1800	I6015	9.9	—	—	—	—	—	—	40	79
	I5015	7.9	—	—	—	—	—	—	368	736
	T5020	5.3	8.8	—	—	—	—	—	33	65
	I4015	6.8	11.1	—	—	—	—	—	38	76
	T3320	3.9	6.5	—	—	—	—	—	43	85

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 244-317 kg/m2 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.
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 ANSI Standard: GRP Composites Grating Manual for Pultruded and Moulded Grating, and Stair Treads.
6. Gratings in this table are not rated for motorized vehicle traffic. For these applications, please select appropriate High Load Capacity grating.

Industrial Series Concentrated Line Load Chart



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

INDUSTRIAL SERIES SAFE-T-SPAN CONCENTRATED LINE LOAD TABLE - DEFLECTIONS IN MILLIMETERS

CLEAR SPAN (mm)	STYLE	LOAD (kN/m of Width)							MAXIMUM RECOM. LOAD (kN/m)	ULTIMATE CAPACITY (kN/m)
		0.7	1.5	5.0	10.0	15.0	20.0	30.0		
400	I6010	< 0.3	< 0.3	0.4	0.7	1.1	1.4	2.1	50	101
	I6015	< 0.3	< 0.3	< 0.3	0.4	0.7	0.9	1.3	104	207
	I5010	< 0.3	< 0.3	0.5	1.1	1.7	2.3	3.4	63	125
	I5015	< 0.3	< 0.3	< 0.3	0.4	0.5	0.7	1.0	129	259
	T5020	< 0.3	< 0.3	< 0.3	0.3	0.5	0.7	1.0	108	216
	I4010	< 0.3	< 0.3	0.5	0.9	1.4	1.9	2.8	75	150
	I4015	< 0.3	< 0.3	< 0.3	0.4	0.5	0.7	1.1	155	311
	T3320	< 0.3	< 0.3	< 0.3	< 0.3	0.3	0.4	0.6	159	319
600	I6010	< 0.3	0.5	1.7	3.3	4.9	6.5	9.8	42	85
	I6015	< 0.3	< 0.3	0.6	1.2	1.8	2.4	3.6	81	163
	I5010	< 0.3	0.5	1.4	2.8	4.2	5.6	8.5	53	105
	I5015	< 0.3	< 0.3	0.5	1.0	1.4	1.9	2.8	102	203
	T5020	< 0.3	< 0.3	0.3	0.7	1.1	1.5	2.2	92	184
	I4010	< 0.3	0.4	1.2	2.4	3.6	4.7	7.1	63	126
	I4015	< 0.3	< 0.3	0.4	0.9	1.4	1.9	2.8	122	244
	T3320	< 0.3	< 0.3	0.3	0.6	0.9	1.2	1.7	120	240
800	I6010	0.5	1.1	3.6	7.1	10.7	—	—	33	66
	I6015	< 0.3	0.3	1.2	2.4	3.6	4.8	7.3	63	125
	I5010	0.4	0.8	2.6	5.1	7.7	10.2	—	42	83
	I5015	< 0.3	< 0.3	1.0	2.0	2.9	3.9	5.9	78	156
	T5020	< 0.3	< 0.3	0.7	1.5	2.2	3.0	4.6	73	146
	I4010	0.3	0.7	2.2	4.3	6.4	8.6	—	50	100
	I4015	< 0.3	< 0.3	0.8	1.7	2.6	3.4	5.2	94	188
	T3320	< 0.3	< 0.3	0.6	1.2	1.7	2.3	3.4	94	189
1000	I6010	0.8	1.8	5.9	11.9	—	—	—	26	51
	I6015	< 0.3	0.7	2.2	4.5	6.8	9.0	—	49	98
	I5010	0.6	1.4	4.6	9.2	—	—	—	32	65
	I5015	< 0.3	0.5	1.8	3.6	5.5	7.3	11.0	61	122
	T5020	< 0.3	0.4	1.4	2.8	4.3	5.7	8.6	57	114
	I4010	0.6	1.2	3.9	7.7	11.5	—	—	39	77
	I4015	< 0.3	0.4	1.5	3.0	4.5	6.0	9.1	73	147
	T3320	< 0.3	0.4	1.1	2.2	3.2	4.3	6.4	77	155
1200	I6010	1.4	2.9	9.7	—	—	—	—	21	43
	I6015	0.5	1.2	3.9	7.9	11.8	—	—	40	81
	I5010	1.1	2.4	8.1	—	—	—	—	26	52
	I5015	0.4	0.9	3.2	6.3	9.5	12.7	—	50	101
	T5020	0.3	0.7	2.5	4.9	7.4	9.9	—	47	93
	I4010	1.0	2.0	6.7	—	—	—	—	31	63
	I4015	0.4	0.8	2.6	5.2	7.8	10.3	—	61	121
	T3320	< 0.3	0.6	1.9	3.8	5.6	7.5	11.2	65	129
1400	I6010	2.3	5.0	—	—	—	—	—	19	38
	I6015	0.9	2.0	6.5	—	—	—	—	36	72
	I5010	1.8	4.0	—	—	—	—	—	23	46
	I5015	0.7	1.6	5.2	10.3	—	—	—	45	90
	T5020	0.6	1.2	3.9	7.8	11.7	—	—	41	83
	I4010	1.6	3.4	11.4	—	—	—	—	27	55
	I4015	0.7	1.4	4.3	8.5	—	—	—	54	108
	T3320	0.4	0.9	3.0	6.0	8.9	11.9	—	54	109
1600	I6010	3.8	8.7	—	—	—	—	—	14	28
	I6015	1.4	3.0	10.1	—	—	—	—	33	67
	I5010	3.0	6.5	—	—	—	—	—	21	42
	I5015	1.1	2.4	8.0	—	—	—	—	42	83
	T5020	0.8	1.8	5.7	11.4	—	—	—	39	77
	I4010	2.6	5.5	—	—	—	—	—	25	51
	I4015	1.0	2.1	6.7	—	—	—	—	50	100
	T3320	0.6	1.3	4.3	8.7	—	—	—	46	92
1800	I6015	2.1	4.5	—	—	—	—	—	28	56
	I5010	4.8	10.1	—	—	—	—	—	18	36
	I5015	1.6	3.5	11.9	—	—	—	—	35	71
	T5020	1.1	2.4	7.9	—	—	—	—	33	66
	I4010	3.9	8.4	—	—	—	—	—	22	44
	I4015	1.4	3.0	9.9	—	—	—	—	42	85
	T3320	0.9	1.8	5.9	11.7	—	—	—	42	83

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 244-317 kg/m² 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.
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 ANSI Standard: GRP Composites Grating Manual for Pultruded and Moulded Grating, and Stair Treads.
6. Gratings in this table are not rated for motorized vehicle traffic. For these applications, please select appropriate High Load Capacity grating.