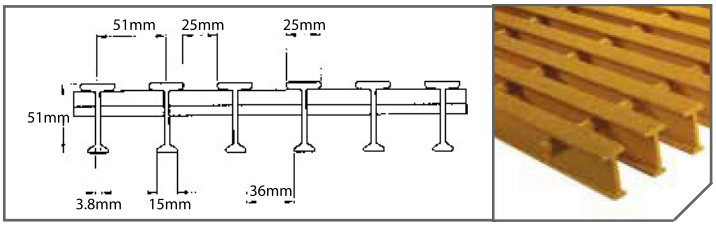
Safe-T-Span® Industrial Grating Details

51mm Deep T5020

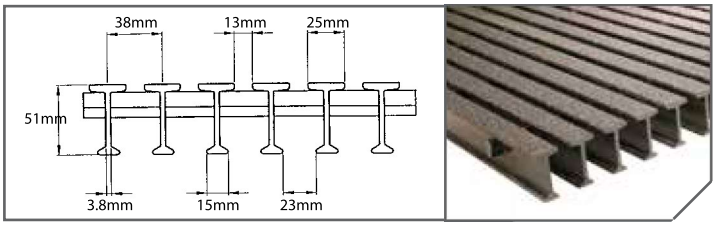
# of Bars/ m of Width	Load Bar Depth	Open Area	Load Bar Centres	Approximate Weight
20	51 mm	50%	51 mm	10.3 kg/m^2



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)

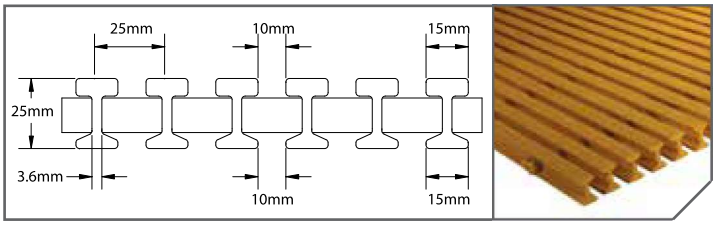
# of Bars/ m of Width	Load Bar Depth	Open Area	Load Bar Centres	Approximate Weight
26	51 mm	33%	38 mm	18.0 kg/m^2



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)

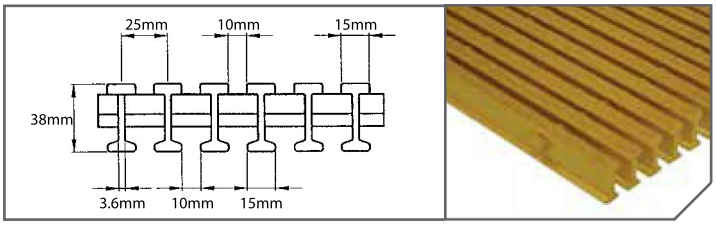
# of Bars/ m of Width	Load Bar Depth	Open Area	Load Bar Centres	Approximate Weight
39	25 mm	40%	25 mm	18.4 kg/m^2



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 colour
  - Aluminium 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.)

High Load Capacity Grating Details

Allowable Spans for Vehicular Loads

	Wheel Load (kg) (1/2 Axle Load + 30% Impact)	Load Distribution (mm)		Allowable Span[2,3] (mm)					Load Distribution (mm)		Allowable Span[2,3] (mm)					Load Distribution (mm)		Allowable Span[2,3] (mm)				
		Parallel to Axle (1)	Perpendicular to Axle	HI3710	HI3715	HI3720	HI3725	HI3730	Parallel to Axle (1)	Perpendicular to Axle	HI4710	HI4715	HI4720	HI4725	HI4730	Parallel to Axle (1)	Perpendicular to Axle	HI5810	HI5815	HI5820	HI5825	HI5830
AASHTO H-25 Truck[4] 18 144 kg Axle Load Dual Wheels	11 793	635 + 51	635	431	609	736	889	1 066	635 + 60	635	406	584	711	838	1 016	635 + 76	635	381	558	685	787	965
AASHTO H-20 Truck[4] 14 515 kg Axle Load Dual Wheels	9 435	508 + 51	508	406	584	736	863	1 041	508 + 60	508	381	558	685	838	990	508 + 76	508	355	533	660	787	939
AASHTO H-15 Truck[4] 10 886 kg Axle Load Dual Wheels	7 076	381 + 51	381	381	558	711	863	1 041	381 + 60	381	355	533	685	812	990	381 + 76	381	330	508	635	762	939
AASHTO H-10 Truck[4] 7 257 kg Axle Load	4 717	254 + 51	254	330	533	711	863	1 066	254 + 60	254	304	508	685	812	1 016	254 + 76	254	279	482	635	787	939
AASHTO H-5 Truck[4] 3 629 kg Axle Load	2 359	127 + 51	127	304	558	736	889	1 092	127 + 60	127	279	533	711	863	1 066	127 + 76	127	254	508	660	812	1 016
Passenger Vehicles[5] **2 868 kg Vehicle** **1 623 kg Loadd** **60% Drive Axle Load**	1 751	229 + 51	229	431	660	863	1 066	1 295	229 + 60	229	406	635	838	1 016	1 244	229 + 76	229	381	609	787	965	1 168
5 Ton Capacity Forklift[5] 6 532 kg Vehicle 11 068 kg Total Load 85% Drive Axle Load	6 114	279 + 51	279	304	508	660	812	990	279 + 60	279	279	482	635	787	939	279 + 76	279	254	431	609	736	889
3 Ton Capacity Forklift[5] 4 445 kg Vehicle 7 168 kg Total Load 85% Drive Axle Load	3 960	178 + 51	178	279	508	685	838	1 016	178 + 60	178	254	482	635	787	965	178 + 76	178	228	406	609	736	914
1 Ton Capacity Forklift[5] 1 905 kg Vehicle 2 182 kg Total Load 85% Drive Axle Load	1 554	102 + 51	102	355	609	812	990	1 193	102 + 60	102	330	584	762	939	1 168	102 + 76	102	304	558	736	914	1 117

NOTES:

1. Load is carried by the grating load bars immediately under the wheel, plus two additional load bars, one on each side of the wheel.
2. Allowable Span is based on a 6.4 mm maximum deflection and a Factor of Safety of 3.0. Other criteria may be required by certain construction codes. Check code requirements to determine design criteria.
3. ALLOWABLE SPAN IS STRONGLY DEPENDENT ON WHEEL WIDTH AND VEHICLE WEIGHT/LOAD CAPACITY. If your application varies from the values given on this table, contact Fibergrate Engineering for application assistance.
4. Load based on the AASHTO Standard Truck Load as defined in AASHTO LRFD Bridge Design Specifications, 2nd Ed. This does not imply that the allowable span meets the deflection requirements of this specification.

- Long Span Walkways
- Ramps and Loading Docks
- Trench Covers
- Flooring/Platforms
- Storage Areas
- Assembly Lines

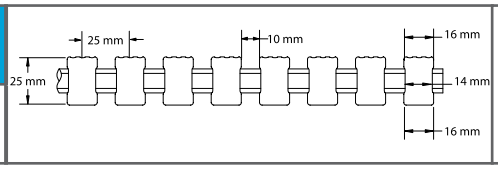
High Load Capacity Grating Details

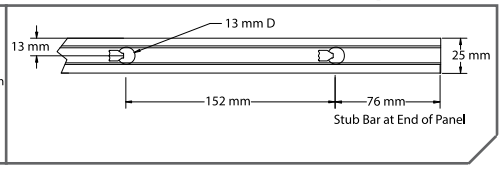
Grating Details

HI37 Series

25 mm Deep HI3710

Load Bar Depth	Open Area	Load Bar Centres	Approx. Weight
25 mm	37%	25 mm	31.7 kg/m²

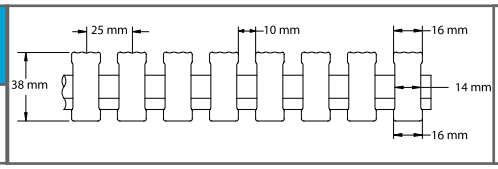


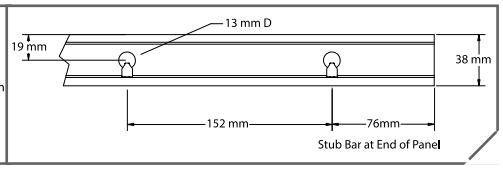


Section Properties per Ft of Width: A=14,977 mm²/m I=8.11x10⁵ mm⁴/m S=1.62x10⁶ mm³/m

38 mm Deep HI3715

Load Bar Depth	Open Area	Load Bar Centres	Approx. Weight
38 mm	37%	25 mm	47 kg/m²

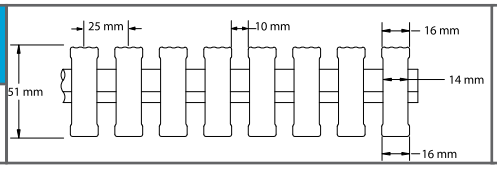


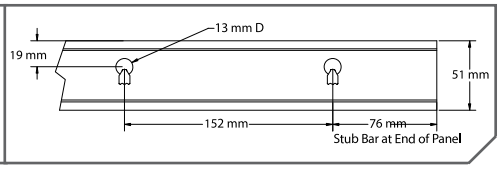


Section Properties per Ft of Width: A=22 088 mm²/m I=2.72x10⁶ mm⁴/m S=3.63x10⁶ mm³/m

51 mm Deep HI3720

Load Bar Depth	Open Area	Load Bar Centres	Approx. Weight
51 mm	37%	25 mm	63.4 kg/m²

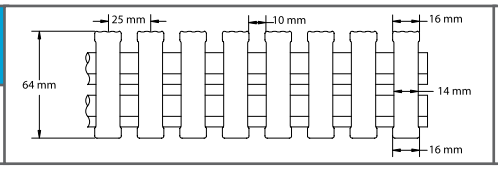


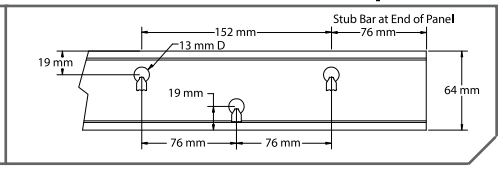


Section Properties per Ft of Width: A=29 250 mm²/m I=6.52x10⁶ mm⁴/m S=6.52x10⁶ mm³/m

64 mm Deep HI3725

Load Bar Depth	Open Area	Load Bar Centres	Approx. Weight
64 mm	37%	25 mm	72.2 kg/m²

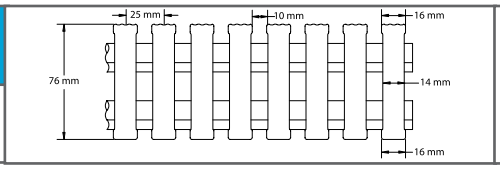


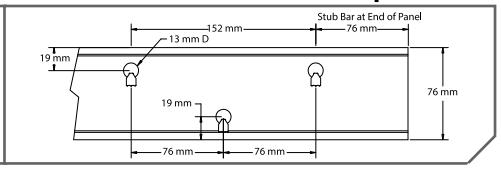


Section Properties per Ft of Width: A=36 437 mm²/m I=1.26x10⁷ mm⁴/m S=1.01x10⁷ mm³/m

76 mm Deep HI3730

Load Bar Depth	Open Area	Load Bar Centres	Approx. Weight
76 mm	37%	25 mm	86.5 kg/m²





Section Properties per Ft of Width: A=43 574 mm²/m I=2.17x10⁷ mm⁴/m S=1.45x10⁷ mm³/m

NOTES:

1. All pultruded grating panels are assembled to size from stocked bar lengths of 6.1m and 7.3m to minimize waste and cost. The maximum panel widths (tie bar length) are 1.2m nominal.
2. Available panel sizes are dependent upon application requirements and individual panel weight considerations, as this is a very heavy product.

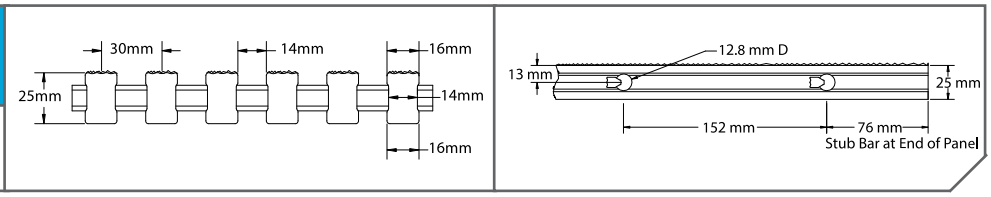
High Load Capacity Grating Details

Grating Details

HI47 Series

25 mm Deep HI4710

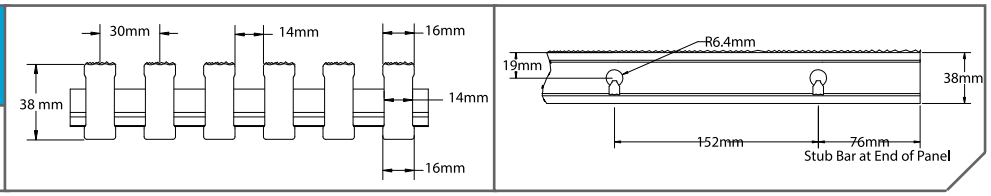
Load Bar Depth	Open Area	Load Bar Centres	Approx. Weight
25 mm	47%	30 mm	26.9 kg/m²



Section Properties per m of Width: A=1.3x10⁴ mm² I=7.0x10⁵ mm⁴ S=5.4x10⁴ mm³

38 mm Deep HI4715

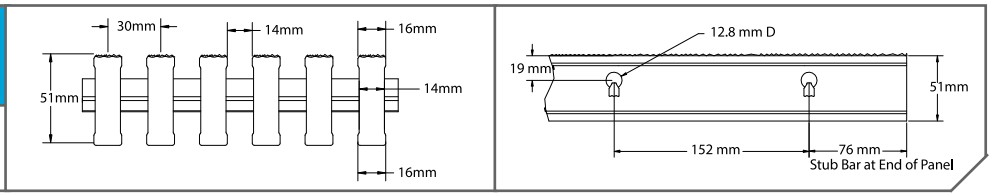
Load Bar Depth	Open Area	Load Bar Centres	Approx. Weight
38 mm	47%	30 mm	39.1 kg/m²



Section Properties per m of Width: A=1.9x10⁴ mm² I=2.3x10⁶ mm⁴ S=1.2x10⁵ mm³

51 mm Deep HI4720

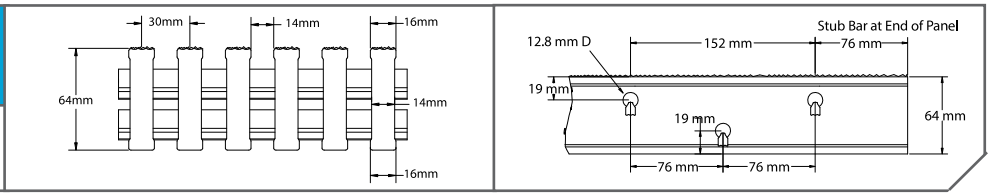
Load Bar Depth	Open Area	Load Bar Centres	Approx. Weight
51 mm	47%	30 mm	53.2 kg/m²



Section Properties per m of Width: A=2.5x10⁴ mm² I=5.4x10⁶ mm⁴ S=2.1x10⁵ mm³

64 mm Deep HI4725

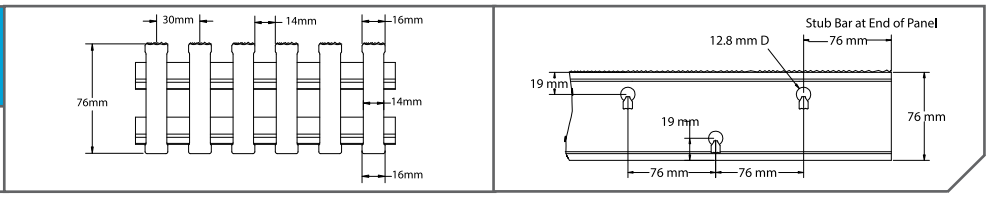
Load Bar Depth	Open Area	Load Bar Centres	Approx. Weight
64 mm	47%	30 mm	60 kg/m²



Section Properties per m of Width: A=3.07x10⁴ mm² I=1.09x10⁷ mm⁴ S=3.31x10⁵ mm³

76 mm Deep HI4730

Load Bar Depth	Open Area	Load Bar Centres	Approx. Weight
76 mm	47%	30 mm	72 kg/m²



Section Properties per m of Width: A=3.67x10⁴ mm² I=1.81x10⁷ mm⁴ S=4.74x10⁵ mm³

NOTES:

1. All pultruded grating panels are assembled to size from stocked bar lengths of 6.1m and 7.3m to minimize waste and cost. The maximum panel widths (tie bar length) are 1.2m nominal.
2. Available panel sizes are dependent upon application requirements and individual panel weight considerations because this is a very heavy product.

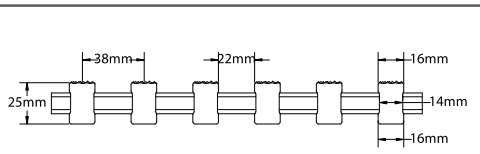
High Load Capacity Grating Details

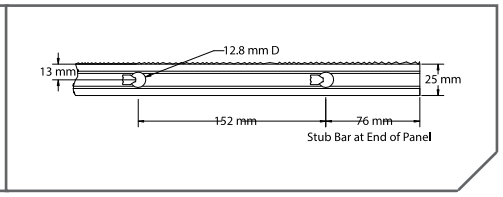
Grating Details

HI58 Series

25 mm Deep HI5810

Load Bar Depth	Open Area	Load Bar Centres	Approx. Weight
25 mm	58%	38 mm	21 kg/m^2

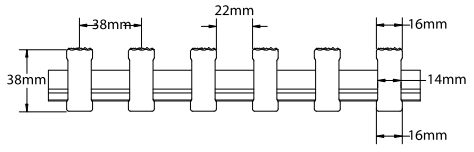


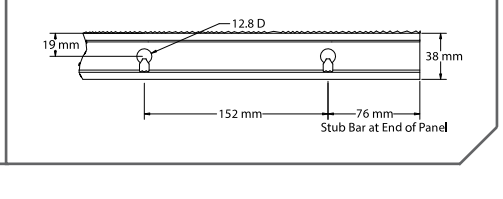


Section Properties per m of Width: A=9.99x10^3 mm^2 I=5.46x10^5 mm^4 S=4.19x10^4 mm^3

38 mm Deep HI5815

Load Bar Depth	Open Area	Load Bar Centres	Approx. Weight
38 mm	58%	38 mm	32 kg/m^2

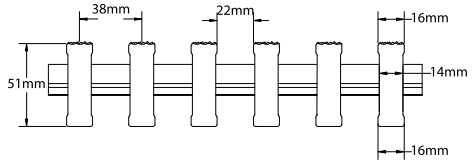


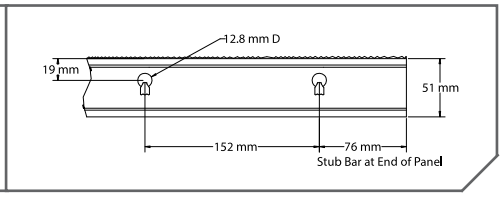


Section Properties per m of Width: A=1.47x10^4 mm^2 I=1.86x10^6 mm^4 S=9.62x10^4 mm^3

51 mm Deep HI5820

Load Bar Depth	Open Area	Load Bar Centres	Approx. Weight
51 mm	58%	38 mm	42 kg/m^2

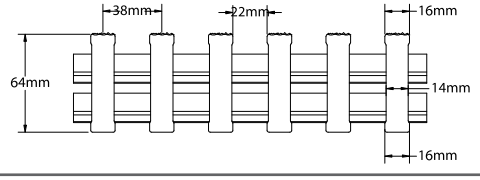


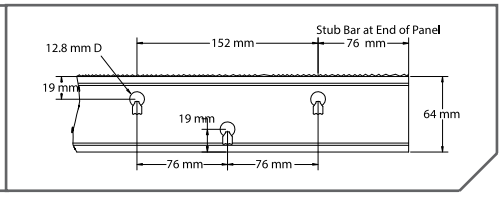


Section Properties per m of Width: A=1.95x10^4 mm^2 I=4.26x10^6 mm^4 S=1.68x10^5 mm^3

64 mm Deep HI5825

Load Bar Depth	Open Area	Load Bar Centres	Approx. Weight
64 mm	58%	38 mm	49 kg/m^2

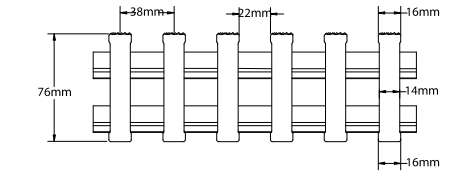


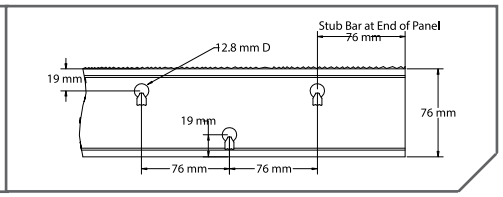


Section Properties per m of Width: A=1.95x10^4 mm^2 I=8.32x10^6 mm^4 S=2.62x10^5 mm^3

76 mm Deep HI5830

Load Bar Depth	Open Area	LLoad Bar Centres	Approx. Weight
76 mm	58%	38 mm	59 kg/m^2





Section Properties per m of Width: A=2.91x10^4 mm^2 I=1.43x10^7 mm^4 S=3.75x10^5 mm^3

NOTES:

1. All pultruded grating panels are assembled to size from stocked bar lengths of 6.1m and 7.3m to minimize waste and cost. The maximum panel widths (tie bar length) are 1.2m nominal.
2. Available panel sizes are dependent upon application requirements and individual panel weight considerations because this is a very heavy product.