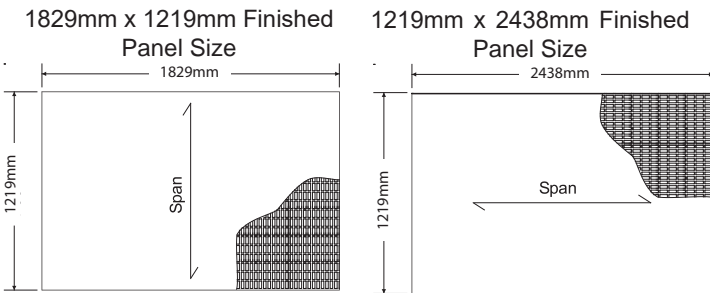


High Load Capacity Grating Details

Moulded High Load Capacity (HLC) grating is yet another product in the arsenal of engineered Glass reinforced plastic (GRP) solutions by Fibergate. While capitalizing on most of the traditional benefits of moulded grating products - high strength, corrosion resistance, fire retardancy, non conductivity and low maintenance - this specially manufactured moulded GRP product has been engineered to carry forklift loads that traditional moulded GRP grating products are unable to support.

With a 48% open surface area, Fibergate Moulded HLC grating is available in a 1829mm x 1219mm or 1219mm x 2438mm panel size with depths of 38mm and 51mm. High load capacity moulded grating is now available in Fibergate's Vi-Corr®, Corvex® and FGI-AM® resin systems (see resin details for colour options). Surface options include either a smooth surface or an Aluminum Oxide (A/O) grit surface. Fibergate Moulded HLC grating merits an ASTM E-84 flame spread rating of 25 or less and a Class 1 Fire Rating.

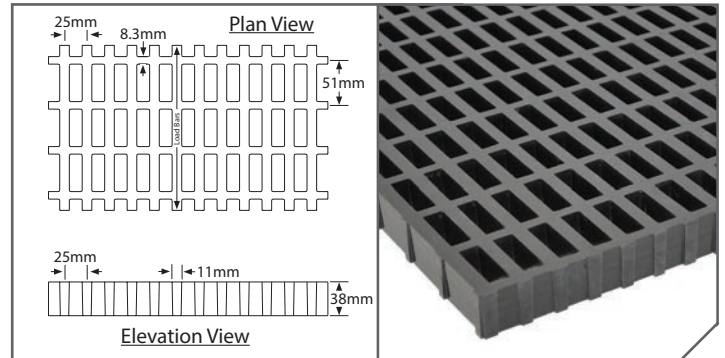


Note:
Load carrying bars are oriented across the narrow (1219mm) dimension of the panel. Panels furnished with closed bars all sides..

Note:
Load carrying bars are oriented across the long (2438mm) dimension of the panel. Panels furnished with closed bars all sides.

HLC 38mm Deep x 25mm x 51mm Rectangular Mesh

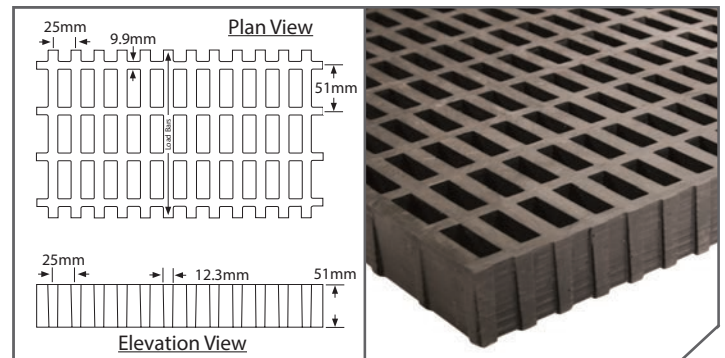
# of Bars/ m of Width	Load Bar Width	Open Area	Load Bar Centres	Approximate Weight
39	11mm	48%	25mm	30.3 kg/m ²



Section Properties per m of Width: A = 1.58x10⁶mm² I = 1.90x10⁶mm⁴ S = 9.68x10³mm³

HLC 51mm Deep x 25mm x 51mm Rectangular Mesh

# of Bars/ m of Width	Load Bar Width	Open Area	Load Bar Centres	Approximate Weight
39	12.3mm	48%	25mm	41.0 kg/m ²



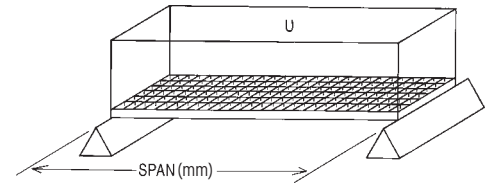
Section Properties per m of Width: A = 2.17x10⁶mm² I = 1.83x10⁶mm⁴ S = 1.76x10⁵mm³

Allowable Spans for Vehicular Loads

	Wheel Load (kg) - 1/2 Axle Load +30% Impact	Load Distribution		Allowable Span ^{2,3}	
		Parallel To Axle (mm) ¹	Perpendicular To Axle (mm)	38mm Deep HLC Moulded Grating	51mm Deep HLC Moulded Grating
AASHTO Standard Truck ⁴ / 14,515 kg Axle Load Dual Wheels(*formerly AASHTO H-20)	9,434	508 + 102	203	356mm	432mm
Automobile Traffic / 2,268 kg Vehicle 680 kg Load / 55% Drive Axle Load	998	203 + 102	203	660mm	813mm
4,536 kg Capacity Forklift / 6,532 kg Vehicle 11,068 kg Total Load / 85% Drive Axle Load	6,114	279 + 102	279	330mm	432mm
2,722 kg Capacity Forklift / 4,445 kg Vehicle 7,167 kg Total Load / 85% Drive Axle Load	3,960	178 + 102	178	304mm	406mm
907 kg Capacity Forklift / 1,905 kg Vehicle 2,812 kg Total Load / 85% Drive Axle Load	1,554	102 + 102	102	483mm	635mm

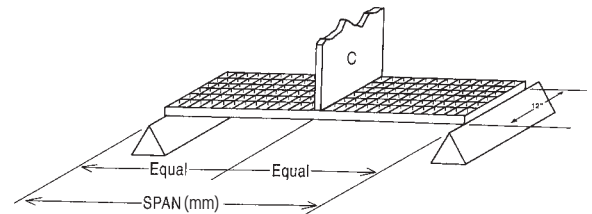
- Notes:**
- Load is carried by the grating load bars immediate under wheel + four additional load bars adjacent to wheel.
 - Allowable Span is based on a 6.4mm maximum deflection and a Factor of Safety of 2.5. Other criteria may be required by certain construction codes. Check code requirements to determine design criteria.
 - 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 Fibergate Engineering for application assistance.
 - 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.

HLC Grating Load Charts



Uniform Line Load Table - Deflection in Millimetres

Span (mm)	Style		UNIFORM LOAD (kN/m ²)										MAXIMUM RECOMMENDED LOAD (kN/m ²)	ULTIMATE CAPACITY (kN/m ²)
	Depth (mm)	Mesh (mm)	5	7	10	15	20	25	30	35	40	45		
400	38	25 x 51	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	0.3	0.3	0.3	0.5	751	1876
	51	25 x 51	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	832	2075
600	38	25 x 51	< 0.3	< 0.3	0.5	0.7	1.0	1.3	1.6	1.9	2.2	2.5	337	843
	51	25 x 51	< 0.3	< 0.3	0.3	0.5	0.6	0.8	0.9	1.0	1.2	1.3	444	1109
800	38	25 x 51	0.9	1.2	1.7	2.5	3.4	4.2	5.0	5.9	6.7	7.4	189	469
	51	25 x 51	0.4	0.6	0.9	1.4	1.8	2.3	2.8	3.2	3.7	4.1	251	629
1000	38	25 x 51	1.9	2.7	3.9	5.9	7.8	9.5	11.5	--	--	--	100	256
	51	25 x 51	1.2	1.6	2.3	3.4	4.6	5.7	6.8	8.0	9.1	10.3	160	398



Concentrated Line Load Table - Deflection in Millimetres

Span (mm)	Style		Concentrated Line LOAD (kN/m of width)										MAXIMUM RECOMMENDED LOAD (kN/m of width)	ULTIMATE CAPACITY (kN/m of width)
	Depth (mm)	Mesh (mm)	1.5	5.0	10.0	20.0	30.0	40.0	50.0	60.0	70.0	85.0		
400	38	25 x 51	< 0.3	0.5	0.5	1.2	1.8	1.8	2.2	2.6	3.0	4.1	157	471
	51	25 x 51	< 0.3	< 0.3	0.3	0.6	0.8	1.1	1.3	1.6	1.8	2.2	178	536
600	38	25 x 51	< 0.3	0.8	1.5	2.9	4.3	5.7	7.1	8.5	10.0	--	101	303
	51	25 x 51	< 0.3	0.4	0.7	1.5	2.3	3.1	3.9	4.7	5.5	6.7	130	393
800	38	25 x 51	0.5	1.7	3.4	6.7	10.1	--	--	--	--	--	75	227
	51	25 x 51	0.3	1.0	1.9	3.7	5.6	7.5	9.3	11.2	--	--	102	308
1000	38	25 x 51	1.0	3.2	6.3	12.5	--	--	--	--	--	--	60	181
	51	25 x 51	0.6	1.9	3.6	7.2	10.9	--	--	--	--	--	77	233

NOTES:

1. 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.
2. The allowable loads in this table are for STATIC LOAD CONDITIONS at ambient temperatures only. Allowable loads for impact 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.
3. Fibergate recommends a maximum deflection of 6.4mm for this product under normal loading conditions. The use of L/500 may be required by certain construction codes. Check code requirements to determine design criteria.
4. All gratings were tested in accordance with the ANSI Standard: GRP Composites Grating Manual for Pultruded and Moulded Grating, and Stair Treads.