NEPEAN
Building &
Infrastructure

TM

Weldlok® Steel Grating







NEPEAN™ Building & Infrastructure

Weldlok® Steel Grating

NEPEAN Building & Infrastructure is a division of NEPEAN, Australia's largest privately owned engineering, mining services and industrial manufacturing organisation.

Through our renowned Weldlok® brand, we manufacture and supply grating, handrails and drainage products, as well as perforated and expanded metals in a variety of materials, including galvanised mild steel, stainless steel and aluminium.

This brochure is designed to assist the draftsperson, engineer, fabricator and specifier in the correct selection of our forgewelded mild steel grating.

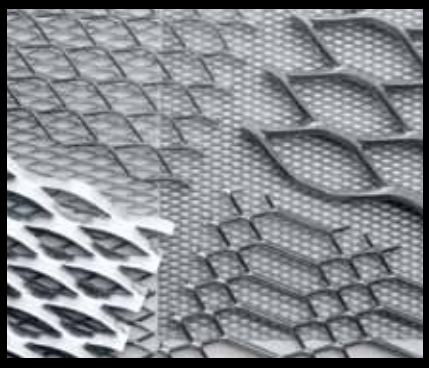
CONTENTS

Ask our sales team for a copy of these and other Weldlok® product brochures

Balltube & Fabricated Handrailing

Drainage Products

Fibreglass Platforms, Walkways & Treads



Expanded Metal

Perforated Metal

Aluminium Grating, Treads & Handrail

Weldlok® Steel Grating Information

Construction

Weldok® forgebar mild steel grating is constructed using an electro-forgewelding process that applies pressure and heat to fuse square, twisted cross bars into load-bearing bars of various thicknesses and depths. The result is a product with a one-piece construction that complies with the requirements of AS1657.

Load Bar Top Surface

Load bars can be supplied with the top surface either plain or serrated. Careful consideration should be given to the type of surface profile required for each application. Standard grating has square-edge load bars, but where a higher slip resistance may be required, serrated load bars should be considered. Note that serrated surfaces are not recommended on 20mm-deep load bars.

For sloping walkways, the designer should consult the requirements of AS1657. Depending on the slope, 10mm x 10mm square bar cleats or yellow abrasive strips may be required.

Surface Treatment

Three surface treatments are available:

Untreated (black) raw mild steel

Hot-dip galvanised to AS/NZS4680

Black bitumen coated

Note that bitumen coating is not recommended for corrosive environments, as there is no pre-treatment of steel prior to bitumen coating.

Availablity

Many common size gratings are carried in stock in standard mat sizes. Common material types, which are likely to be held in stock, are highlighted in bold type in the following charts. Non-standard products can also be made to order. For assistance contact our sales department.

Product Applications

Forgebar grating is extensively used in a variety of pedestrian, drainage and screening applications. Forgebar grating allows the passage of light, air and water. The manufacturing process makes it one of the most economical steel grating products.

Plain – Standard top surface profile

Serrated – Optional top surface Profile

Design Criteria

All safe load tables were calculated in accordance with the following criteria:

1. Loading Code AS1170-1 (load combination 1.25 x dead load and 1.5 x live load).
2. Steel Structures Code AS4100.
3. Mass calculated on untreated and un-edged grating.
4. Minimum yield strength of steel 260 MPa
5. Load calculated with allowable bending stress of 171.6 MPa (0.66 Fy)
6. Load bars assumed to be simply supported and unserrated.
7. Spans based on maximum 5mm deflection, which is a limiting deflection for pedestrian comfort.

See load tables on Pages 6, 7 and 8

Product Code Examples: Plain A30-323 or Serrated AS30-323

A	S	30	–	32	3

Nominal Load Bar Thickness
3mm, 5mm or 6mm

Load Bar Depth
From 20mm to 75mm

Load Bar Pitch
30mm, 40mm or 60mm Centres

(Optional) Serrated Top Surface Profile
at no additional cost

Cross Bar Pitch
A – 100mm B – 50mm

Weldlok® Steel Grating Ordering

Ordering Floor Grating

The following procedure is recommended when ordering Weldok® floor grating. For terminology, see page 13.

1. Establish:
   The largest floor grating support centres (SPAN in mm) in the direction the load-bearing bars will run.
2. From the Quick Selection Charts on Pages 6, 7 or 8, select Grating Type

   Example: Design load required is 4 kPa with a span of 2000mm

   › Series 30 grating – A30-405 or B30-405

   › Series 40 grating – A40-455 or B40-455

   › Series 60 grating – B60-505
3. Choose Plain or Serrated surface profile.
4. If stock mats are required, refer to Standard Mat Sizes table, on the same pages, for each Grating Series.
5. For fabricated grating, specify if grating is to be edge-banded using edge bars or un-edged (no edge bars). Unless specified otherwise, standard fabrication welding of edge banding (edge bars) will be provided (see page 14).
6. Specify the number of panels required and provide each overall panel Span (mm) x Width (mm). The SPAN should always be the first dimension stated, and should also be clearly defined as SPAN.

   Alternatively, or for large floor, areas:
   Provide drawings of Grating Outline details and Structural Support Steel details, indicating:

a) Grating product type and surface treatment.
b) Span (load bar direction).
c) Dimensioned location and section size of support steel.
d) Location and size of all cut-outs and removeable areas.
e) Location of nosing, kick plates and penetrations (indicate if penetrations are required to be split).

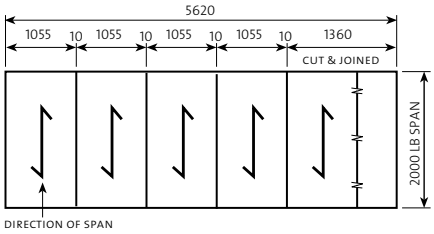
7. Indicate surface treatment required: Untreated, Galvanised or Black Bitumen.
8. Specify the type of fasteners, if required. Refer to page 12.

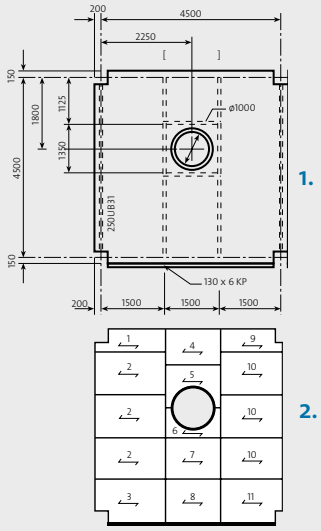
Order Example

One platform – 2000mm Load Bar Span x 5620mm Wide

The illustration shows a typical layout. The platform is split up into standard stock panel widths of 1055mm, plus a cut and joined end panel with the width taken to the nearest load bar to match the required dimension.

Note: Make-up panels of less than 400mm width will be welded to the adjacent panel.





Drafting

There is no need to submit fully detailed panel drawings. We will design the most economical combination of panels to suit the floor layout. Save time and cost and allow us to do it for you.

1. What we require from you

› Dimensioned outline grating details.
› Dimensioned structural steel support details.

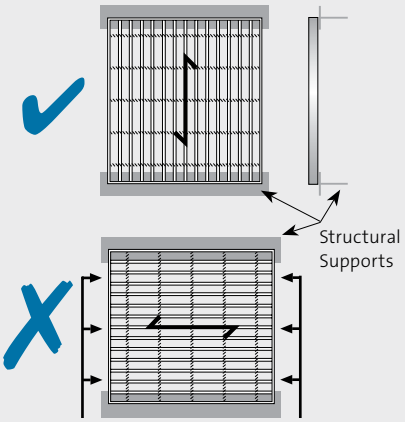
2. What you recieve from us

Marking plan with each panel tagged to suit

IMPORTANT:

Always check the Load Bar Span Direction before requesting a quotation or placing an order.
A mistake could mean the difference between winning or losing a tender. It could also save a lot of unnecessary cost on rework.

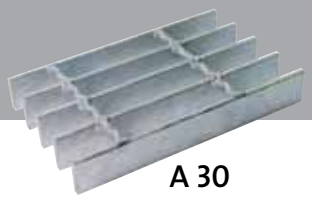
Compare load bar direction to support location



Panel will collapse under load due to lack of support at both ends of load bars

Weldlok® Forgebar Series 30 Grating

(30mm Centres)



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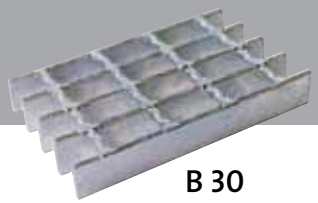

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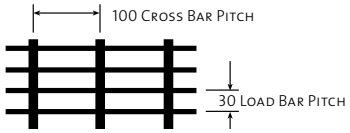
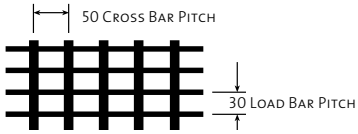




Weldok® Series 30 grating is recommended for applications requiring high load-carrying capacity. Serrated load bars should be considered where increased walkway safety is required.

For high impact loading, grating with cross bars at 50mm centres is recommended.

Standard Mat Sizes

Load Bar Thickness	Span x Width	No. of Load Bars
3mm	6000 x 1053mm	36
5mm	6000 x 1055mm	36

Typical Application Loadings

Conveyor Walkways, Light Access Platforms	2.5 kPa
Standard Australian Pedestrian Platform	4 kPa
British Standard Pedestrian Platform	5 kPa
Boiler House Platform (e.g., Power Stations)	7.5 kPa

Quick Selection Chart

Grating Type	Maximum Span (mm) for Various Loads with 5.00mm Deflection			
	2.5 kPa	4.0 kPa	5.0 kPa	7.5 kPa
A30-203 / **B30-203**	1190	1055	1010	905
A30-205 / **B30-205**	1355	1210	1155	1040
A30-253 / **B30-253**	1430	1265	1195	1060
A30-255 / **B30-255**	1610	1435	1350	1225
A30-323 / **B30-323**	1740	1616	1440	1306
A30-325 / **B30-325**	1940	1720	1630	1480
A30-403 / B30-403	2020	1790	1695	1530
A30-405 / B30-405	2290	2035	1936	1746
A30-455 / B30-455	2450	2226	2100	1905
A30-505 / B30-505	2700	2400	2280	2060
A30-555 / B30-555	2900	2680	2440	2210
A30-655 / B30-655	3255	2930	2770	2606
A30-756	3830	3400	3220	2900

Bold type indicates preferred product (more likely to be in stock)

Safe Load & Deflection Table

Grating Type	Crossbar pitch mm	Mass kg/m²	Nom. load bar size mm		Spans (mm) 300	450	600	750	900	1050	1200	1350	1500	1650	1800	1950	2100	2400	2700	Serrated Edge Conversion Factor
A30-203	100	18.8	20x3	U	100.9	45.0	25.20	15.94	7.67	4.11										NOT REC.
B30-203	50	21.8		D	0.80	1.80	3.22	5.00	5.00	5.00										
A30-205	100	29.5	20x5	U	169.4	75.33	42.37	26.96	13.00	7.02	4.11									NOT REC.
B30-205	50	32.5		D	0.80	1.80	3.22	5.00	5.00	5.00	5.00									
A30-253	100	22.8	25x3	U	158.9	70.62	39.72	25.42	15.24	8.22	4.82									0.876
B30-253	50	25.8		D	0.64	1.45	2.57	4.02	5.00	5.00	5.00									
A30-255	100	36.2	25x5	U	264.8	117.7	66.20	42.37	25.40	13.71	8.03	5.01								0.876
B30-255	50	39.2		D	0.64	1.45	2.57	4.02	5.00	5.00	5.00	5.00								
A30-323	100	28.4	32x3	U	260.3	115.7	65.08	41.65	28.92	17.24	10.11	6.31	4.14							0.902
B30-323	50	31.4		D	0.50	1.13	2.01	3.14	4.52	5.00	5.00	5.00	5.00							
A30-325	100	45.5	32x5	U	433.8	192.8	108.4	69.42	48.21	28.75	16.86	10.52	6.93	4.71						0.902
B30-325	50	48.5		D	0.50	1.13	2.01	3.14	4.52	5.00	5.00	5.00	5.00	5.00						
A30-403	100	34.9	40x3	U	406.7	180.7	101.7	65.08	45.20	33.20	19.73	12.34	8.09	5.52						0.922
B30-403	50	37.9		D	0.40	0.90	1.61	2.51	3.62	4.93	5.00	5.00	5.00	5.00						
A30-405	100	56.2	40x5	U	677.9	301.3	169.4	108.4	75.33	55.34	32.89	20.56	13.49	9.20	6.50	4.72				0.922
B30-405	50	59.2		D	0.40	0.90	1.61	2.51	3.62	4.93	5.00	5.00	5.00	5.00	5.00	5.00				
A30-455	100	62.9	45x5	U	858.0	381.3	214.5	137.2	95.30	70.04	46.87	29.26	19.19	13.11	9.25	6.72	4.99			0.930
B30-455	50	65.9		D	0.36	0.80	1.43	2.23	3.22	4.38	5.00	5.00	5.00	5.00	5.00	5.00	5.00			
A30-505	100	69.6	50x5	U	1059.0	470.7	264.8	169.4	117.7	86.47	64.27	40.11	26.35	17.99	12.70	9.22	6.85	4.01		0.937
B30-505	50	72.6		D	0.32	0.72	1.29	2.01	2.90	3.94	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00		
A30-555	100	76.2	55x5	U	1281.0	569.6	320.4	205.0	142.4	104.6	80.11	53.45	35.06	23.93	16.90	12.27	9.12	5.34		0.943
B30-555	50	79.2		D	0.29	0.66	1.17	1.83	2.63	3.58	4.68	5.00	5.00	5.00	5.00	5.00	5.00	5.00		
A30-655	100	89.6	65x5	U	1790.0	795.6	447.5	286.4	198.9	146.1	111.8	88.22	57.84	40.75	27.90	20.25	15.05	8.82	5.51	0.951
B30-655	50	92.6		D	0.25	0.56	0.99	1.55	2.23	3.03	3.96	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	
A30-756	100	122.9	75x6	U	2750.0	1200.0	650.0	400.0	300.0	225.0	150.0	110.0	75.00	60.00	51.40	37.31	27.76	16.27	10.16	N/A
				D	0.21	0.46	0.78	1.17	1.82	2.53	2.88	3.38	3.52	4.12	5.00	5.00	5.00	5.00	5.00	

U = Safe uniformly distributed load in kPa (or kN/m²)

D = Deflection (mm) at mid-span caused by U

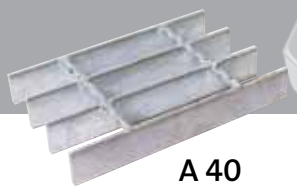
For Design Criteria ref. page 4

• Spans shown have maximum 5mm deflection, which is the limiting deflection for pedestrian comfort

For galvanised fabricated panels, add 12% to mass

Weldlok® Forgebar Series 40 Grating

(40mm Centres)



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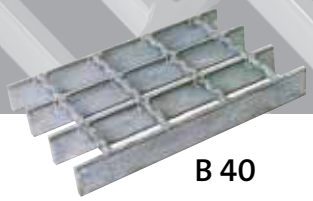

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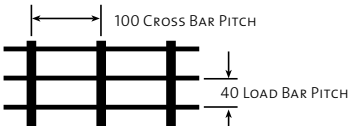
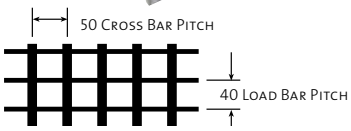




Weldok® Series 40 grating is a lightweight and economical grating that meets the requirements of the relevant SAA code for fixed platforms, walkways, stairways and ladders. Ideal applications are mezzanine floors, catwalks, conveyor walkways, etc.

Standard Mat Sizes

Load Bar Thickness	Span x Width	No. of Load Bars
3mm	6000 x 1043mm	27
5mm	6000 x 1045mm	27

Typical Application Loadings

Conveyor Walkways, Light Access Platforms	2.5 kPa
Standard Australian Pedestrian Platform	4 kPa
British Standard Pedestrian Platform	5 kPa
Boiler House Platform (e.g., Power Stations)	7.5 kPa

Quick Selection Chart

Grating Type	Maximum Span (mm) for Various Loads with 5.00mm Deflection			
	2.5 kPa	4.0 kPa	5.0 kPa	7.5 kPa
A40-203 / B40-203	1120	1000	945	860
A40-205 / B40-205	1290	1140	1065	975
A40-253 / **B40-253**	1320	1180	1125	1010
A40-255 / **B40-255**	1490	1335	1265	1150
A40-323 / **B40-323**	1600	1420	1340	1200
A40-325 / B40-325	1790	1600	1510	1375
A40-403 / B40-403	1880	1685	1580	1435
A40-405 / B40-405	2115	1900	1790	1620
A40-455 / B40-455	2315	2070	1950	1770
A40-505 / B40-505	2610	2230	2110	1920
A40-555 / B40-555	2690	2400	2250	2060
A40-655 / B40-655	3045	2720	2560	2315

Bold type indicates preferred product (more likely to be in stock)

Safe Load & Deflection Table

Grating Type	Crossbar pitch mm	Mass kg/m²	Nom. load bar size mm		Spans (mm) 300	450	600	750	900	1050	1200	1350	1500	1650	1800	1950	2100	2400	2700	Serrated Edge Conversion Factor
A40-203	100	14.6	20x3	U	76.86	34.07	19.21	12.11	5.81											NOT REC.
B40-203	50	17.6		D	0.80	1.81	3.22	5.00	5.00											
A40-205	100	22.5	20x5	U	127.1	56.49	31.77	20.21	9.74	5.25										NOT REC.
B40-205	50	25.5		D	0.80	1.81	3.22	5.00	5.00	5.00										
A40-253	100	17.5	25x3	U	119.1	52.96	29.79	19,06	11.42	6.17										0.876
B40-253	50	20.5		D	0.64	1.45	2.57	4.02	5.00	5.00										
A40-255	100	27.4	25x5	U	198.5	88.27	49.65	31.77	19.05	10.28	6.01									0.876
B40-255	50	30.4		D	0.64	1.45	2.57	4.02	5.00	5.00	5.00									
A40-323	100	21.7	32x3	U	195.1	86.77	48.81	31.24	21.68	12.93	7.58	4.73								0.902
B40-323	50	24.7		D	0.50	1.13	2.01	3.14	4.52	5.00	5.00	5.00								
A40-325	100	34.2	32x5	U	325.3	144.93	81.35	52.05	36.15	21.55	12.63	7.89	5.17							0.902
B40-325	50	37.2		D	0.50	1.13	2.01	3.14	4.52	5.00	5.00	5.00	5.00							
A40-403	100	26.4	40x3	U	305.0	135.5	76.27	48.81	33.89	24.90	14.82	9.24	6.06	4.14						0.922
B40-403	50	29.4		D	0.40	0.90	1.61	2.51	3.62	4.93	5.00	5.00	5.00	5.00						
A40-405	100	42.1	40x5	U	508.4	225.9	127.1	81.35	56.49	41.50	24.70	15.41	9.62	6.89	4.86					0.922
B40-405	50	45.1		D	0.40	0.90	1.61	2.51	3.62	4.93	5.00	5.00	5.00	5.00	5.00					
A40-455	100	47.0	45x5	U	643.4	285.9	160.8	102.9	71.50	52.53	35.15	21.93	14.39	9.82	6.94	5.04				0.930
B40-455	50	50.0		D	0.36	0.80	1.43	2.23	3.22	4.38	5.00	5.00	5.00	5.00	5.00	5.00				
A40-505	100	51.9	50x5	U	794.3	353.0	198.5	127.1	88.27	64.85	48.19	30.07	19.75	13.49	9.52	6.90	5.13			0.937
B40-505	50	54.9		D	0.32	0.72	1.29	2.01	2.90	3.94	5.00	5.00	5.00	5.00	5.00	5.00	5.00			
A40-555	100	56.8	55x5	U	961.2	427.2	240.2	153.7	106.8	78.47	60.07	40.08	22.69	17.94	12.66	9.20	6.83	4.00		0.943
B40-555	50	59.8		D	0.29	0.66	1.17	1.83	2.63	3.58	4.68	5.00	5.00	5.00	5.00	5.00	5.00	5.00		
A40-655	100	66.6	65x5	U	1342.0	596.6	335.5	214.7	149.1	109.5	83.91	66.16	43.36	29.62	20.93	15.18	11.28	6.30	4.13	0.951
B40-655	50	69.6		D	0.25	0.56	0.99	1.55	2.23	3.03	3.96	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	

U = Safe uniformly distributed load in kPa (or kN/m²)

D = Deflection (mm) at mid-span caused by U

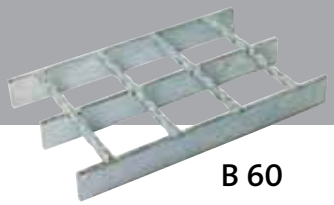
For Design Criteria ref. page 4

• Spans shown have maximum 5mm deflection, which is the limiting deflection for pedestrian comfort

For galvanised fabricated panels, add 14% to mass

Weldlok® Forgebar Series 60 Grating

(60mm Centres)



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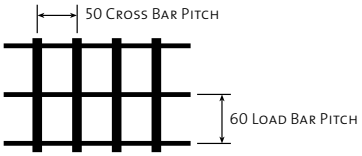


Weldok® Series 60 grating was developed initially for the mining industry to minimise build-up of spillage materials on platform floors. The larger openings allow most materials to fall through, providing a safer walking surface. However, this grating is very light and has only 50% of the load carrying capacity of Series 30 grating. Weldok® Series 60 grating is not suitable for floors subject to high impact loads.

Standard Mat Sizes

Load Bar Thickness	Span x Width	No. of Load Bars
3mm	6000 x 1023mm	18
5mm	6000 x 1025mm	18

Typical Application Loadings

Conveyor Walkways, Light Access Platforms	2.5 kPa
Standard Australian Pedestrian Platform	4 kPa
British Standard Pedestrian Platform	5 kPa
Boiler House Platform (e.g., Power Stations)	7.5 kPa

Quick Selection Chart

Grating Type	Maximum Span (mm) for Various Loads with 5.00mm Deflection			
	2.5 kPa	4.0 kPa	5.0 kPa	7.5 kPa
B6O-205	1140	1020	965	875
B60-253	1185	1050	1005	895
B60-255	1375	1195	1140	1030
B60-323	1420	1275	1195	1085
B60-325	1640	1445	1355	1230
B60-403	1700	1495	1420	1285
B60-405	1925	1700	1615	1460
B60-455	2070	1860	1760	1590
B60-505	2220	2010	1900	1720
B60-555	2420	2130	2040	1845
B60-655	2745	2445	2330	2090

Bold type indicates preferred product (more likely to be in stock)

Safe Load & Deflection Table

Grating Type	Crossbar pitch mm	Mass kg/m²	Nom. load bar size mm		Spans (mm) 300	450	600	750	900	1050	1200	1350	1500	1650	1800	1950	2100	2400	2700	Serrated Edge Conversion Factor
B60-205	50	19.0	20x5	U	81.98	36.45	20.50	13.04	6.29											NOT REC
				D	0.80	1.81	3.22	5.00	5.00											
B60-253	50	15.7	25x3	U	76.90	34.18	19.22	12.30	7.37	3.97										0.876
				D	0.64	1.45	2.57	4.02	5.00	5.00										
B60-255	50	22.3	25x5	U	128.1	56.96	32.04	20.50	12.29	6.63										0.876
				D	0.64	1.45	2.57	4.02	5.00	5.00										
B60-323	50	18.5	32x3	U	125.9	55.99	31.49	20.15	13.99	8.34	4.89									0.902
				D	0.50	1.13	2.01	3.14	4.52	5.00	5.00									
B60-325	50	27.0	32x5	U	209.9	93.31	52.46	33.59	23.33	13.91	8.16	5.09								0.902
				D	0.50	1.13	2.01	3.14	4.52	5.00	5.00	5.00								
B60-403	50	21.7	40x3	U	196.8	87.45	49.22	31.49	21.87	16.06	9.54	5.97								0.922
				D	0.40	0.90	1.61	2.51	3.62	4.93	5.00	5.00								
B60-405	50	32.3	40x5	U	328.1	145.8	81.98	52.46	36.45	26.78	15.91	9.95	6.52	4.45						0.922
				D	0.40	0.90	1.61	2.51	3.62	4.93	5.00	5.00	5.00	5.00						
B60-455	50	35.7	45x5	U	415.2	184.5	103.8	66.40	46.12	33.89	22.68	14.16	9.28	6.34	4.47					0.930
				D	0.36	0.80	1.43	2.23	3.22	4.38	5.00	5.00	5.00	5.00	5.00					
B60-505	50	39.0	50x5	U	512.5	227.8	128.1	81.98	56.96	41.85	31.10	19.41	12.75	8.70	6.14	4.46				0.937
				D	0.32	0.72	1.29	2.01	2.90	3.94	5.00	5.00	5.00	5.00	5.00	5.00				
B60-555	50	42.4	55x5	U	620.0	275.6	155.0	99.22	68.92	50.62	38.77	25.86	16.96	11.58	8.17	5.93	4.41			0.943
				D	0.29	0.66	1.17	1.83	2.63	3.58	4.68	5.00	5.00	5.00	5.00	5.00	5.00			
B60-655	50	49.0	65x5	U	866.3	385.0	216.5	138.6	96.26	70.71	54.11	42.69	27.99	19.72	13.50	9.80	7.28	4.26		0.951
				D	0.25	0.56	0.99	1.55	2.23	3.03	3.96	5.00	5.00	5.00	5.00	5.00	5.00	5.00		

U = Safe uniformly distributed load in kPa (or kN/m²)

D = Deflection (mm) at mid-span caused by U

For Design Criteria ref. page 4

• Spans shown have maximum 5mm deflection, which is the limiting deflection for pedestrian comfort

For galvanised fabricated panels, add 12% to mass

Weldlok® Steel Grating Stair Treads

Stair Treads

Weldok® stair treads can be supplied in Series 30, 40 & 60 forgebar grating. Treads may be selected using the Recommended Width and Recommended Max. Length tables. Non-standard treads can also be supplied on request.

Please consult our sales department.

Ordering Stair Treads

1. Select from the tread types shown (T1 to T8).
2. Refer to Recommended Max. Lengths table. Select a Load Bar Size and Series with a maximum length equal to or greater than the required tread length. For example, if the required tread length is 1100mm, the Series 40 grating with 32 x 5 load bars (A40-325) would be appropriate.
3. From the Recommended Widths table, choose a width that corresponds to the tread type and Series selected. For example, based on the Series 40 grating and a T1 tread, the tread width would be either 125, 165, 205, 245, 285 or 325mm.

Example would be:
Tread Type T1 ~ 1100 x 285 from A40 – 325

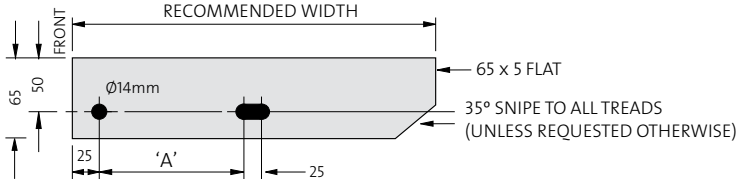
Recommended Maximum Lengths (mm)			
Load Bar Size	25 x 5	32 x 5	40 x 5
Series 30	900	1300	1600
Series 40	750	1200	1500
Series 60	500	800	1300

Recommended Widths (mm) *							
Tread Types T1 and T2							
Series 30	125	155	185	215	245	275	305
Series 40	125	165		205	245	285	325
Series 60			185		245		305
Tread Types T3 to T8							
Series 30	125	155	185	215	245	275	305
Series 40	115	155		195	235	275	315
Series 60		155		215		275	

*Note: In order to comply with AS1657 a minimum tread width of 225mm is required.

Bolted Connections							
End Plate Hole Centres (mm)							
'A'	45	75	75	100	100	100	100

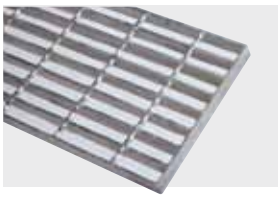
Standard End Plates for Bolted Threads



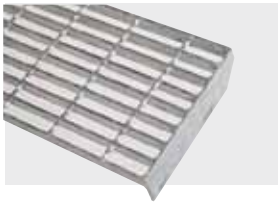
Note: Special End Plate Hole Centres available on request.

Tread Types

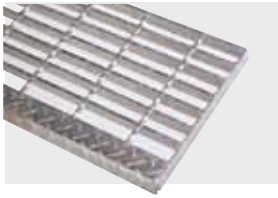
T1 Welded fixing – No nosing



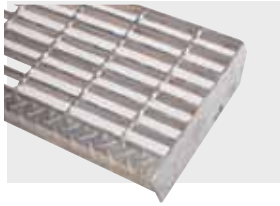
T2 Bolted fixing – No nosing



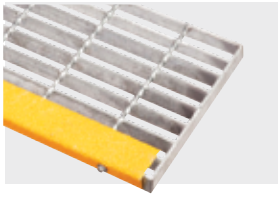
T3 Welded fixing – Floor plate nosing



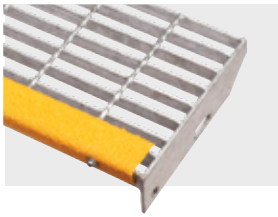
T4 Bolted fixing – Floor plate nosing



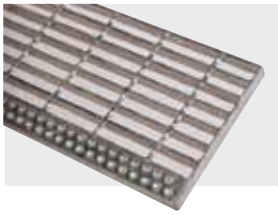
T5 Welded fixing – Abrasive nosing



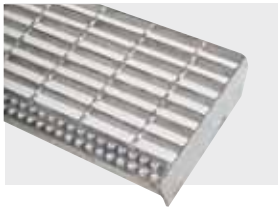
T6 Bolted fixing – Abrasive nosing



T7 Welded fixing – Perforated nosing



T8 Bolted fixing – Perforated nosing

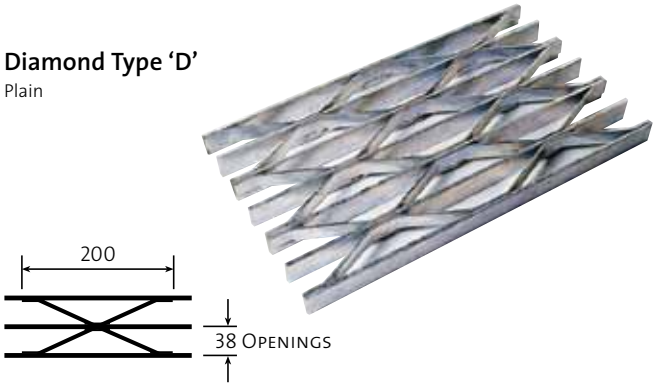


Weldlok® Steel Grating
Diamond Grating

Standard Diamond Grating

Type D Standard Diamond Grating is manufactured to order with either plain or serrated load bars. The serrated finish provides very good slip resistance in all directions.

Diamond Type 'D'
Plain



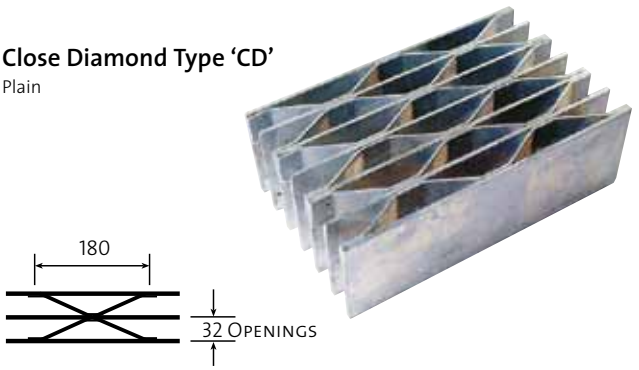
Type	Weight (kg/m²)	Load Bar Size (mm)	Spacer Bar Size (mm)
D255	36.7	25 x 5	20 x 3
D325	43.6	32 x 5	20 x 3
D405	51.4	40 x 5	20 x 3
D505	61.3	50 x 5	20 x 3

Notes:
- For galvanised fabricated panels add 13% to weights shown.
- Load tables for Series 40 forgebar grating (page 7) may be used for Standard Diamond Grating, as the load carrying capacities are similar.

Close Diamond Grating

Type CD Close Diamond Grating is an ideal product for applications subject to heavy wheel loads. The formed spacer bars can be varied in size to suit the load bar depth, providing maximum lateral restraint for the load bars.

Close Diamond Type 'CD'
Plain



Type	Weight (kg/m²)	Load Bar Size (mm)	Spacer Bar Size (mm)
CD325	51.2	32 x 5	20 x 5
CD405	60.2	40 x 5	20 x 5
CD505	71.4	50 x 5	20 x 5
CD756	141.7	75 x 6	32 x 5
CD906	161.9	90 x 6	32 x 5
CD1006	175.3	100 x 6	32 x 5
CD1306	225.9	130 x 6	40 x 5

Note:
- For galvanised fabricated panels add 15% to weights shown.

Grating Maximum Clear Spans (mm) for the following vehicles

Grating Type	Load Bar Size (mm)	Cars	2T Folklift	5T Folklift	Semi-trailer
CD325	32 x 5	480	180	–	180
CD405	40 x 5	720	240	–	280
CD505	50 x 5	1090	340	280	380
CD756	75 x 6	2340	890	510	750
CD906	90 x 6	2800	1230	680	1020
CD1006	100 x 6	3120	1480	800	1200
CD1306	130 x 6	4050	2350	1230	1900

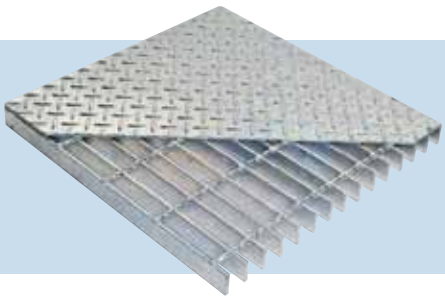
Notes:
- Vehicles assumed to be fully laden
- Impact factor of 30% allowed
- Spans shown are effective spans.
- Where vehicles will travel predominately in the direction of the load bars, the equivalent depth of Series 30 forgebar grating up to 75 x 6 can be used.

For Class Rated road drainage grates, complying with AS3996-2006 please refer to our Drainage Products Brochure.

Weldlok® Ancillary Products & Product Gallery

Weldlok® Gridplate

Gridplate is a composite flooring arrangement comprising either 3mm or 5mm thick floorplate welded to the top of any of the grating types listed in this brochure.



Weldlok® Safe-T-Grating

Safe-T-Grating is a composite flooring comprising light gauge mesh either welded to the underside of grating to prevent small objects falling through, as required by AS1657, or to the top for trolleys or pedestrian traffic.

Weldlok® Projects

Weldlok® Forgebar Grating Fastening Methods

A. Clip Down

The use of Weldlok® fixing clips to clamp the grating to the structural supports is the most common method. The clips can be installed from the top of the grating. A minimum of 4 clips per panel should be used. On large panels, extra clips at mid-span are recommended. The clips are supplied with a galvanised finish.

B. Screw Down

Where there is no open flange to clamp to, a galvanised top saddle clamp with hex-head self-tapping or thread-cutting screw can be used. A minimum of 4 saddle clamps per panel should be used. On large panels, extra clips at mid-span are recommended.

Anti-vibration Fastening

Where vibration may affect the integrity of the clamping arrangement, there are two methods that can be adopted – anti-vibration clips or welding.

C. Grate-Fast® Clips

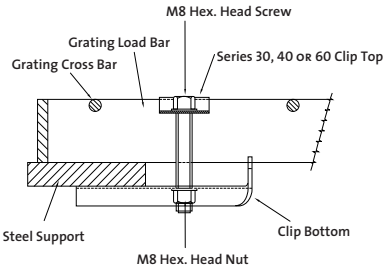
The Lloyds approved Lindapter Grate-Fast® clip is a galvanized anti-vibration clip comprising top-hat bracket, cast clip bottom and M10 socket head cap screw.

D. Weld Down

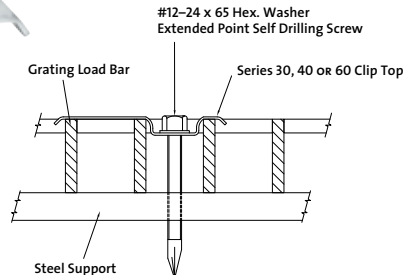
Where there is no requirement to remove grating at some later date, on-site welding of grating panels to the structural steel is considered an acceptable method of fixing. The minimum requirement is 4 welds per panel, each consisting of a 6mm fillet, 25mm long, and spaced at 1000mm centres.

Suitable weld preparation practices and surface finish touch-up should be used with this method.

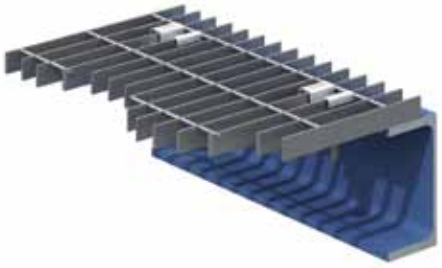
A. Galvanised Clip Set with Screw and Nut



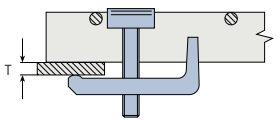
B. Galvanised Clip Top with Self-Drilling Screw

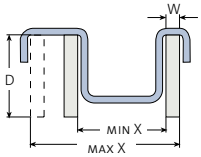


C. Grate-Fast® Anti-Vibration Clip Set



lindapter
Established 1934





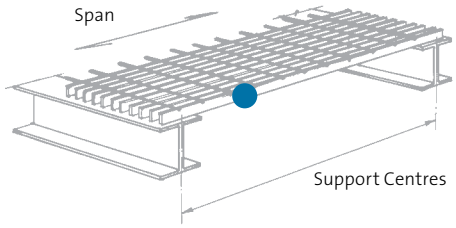
Grate-Fast® Clip Dimensions

Flange	Load Bar	Load Bar	Load Bar
T (mm)	D (mm)	W (mm)	X (mm)
3 – 19	20 – 30	3 – 7	25 – 45

Weldlok® Forgebar Grating Terminology

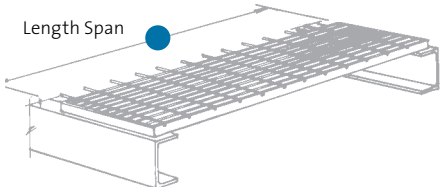
Load Bearing Bar

A load-carrying member spanning between supports.



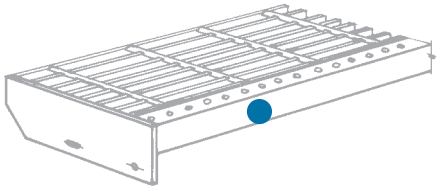
Length (Direction of Span)

The overall dimension of a panel parallel to the load-bearing bars.



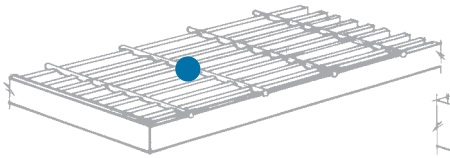
Nosing Bar

A member attached to the front edge of a stair tread or top stair landing panel.



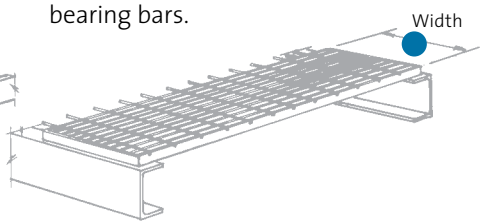
Cross Bar

A member fixed at right angles to the load bearing bars to provide lateral restraint.



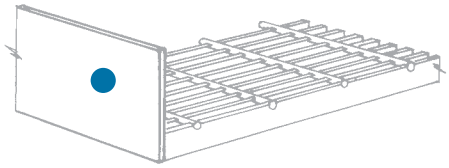
Width

The overall dimension of a panel at right angles to the load-bearing bars.



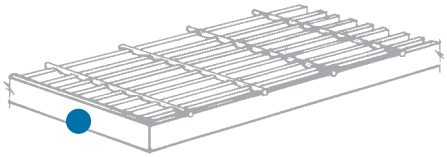
Kick Plate

A large, flat bar welded to the side of a panel or ends and around cut-outs, where specified. Nominally 100mm above walking surface.



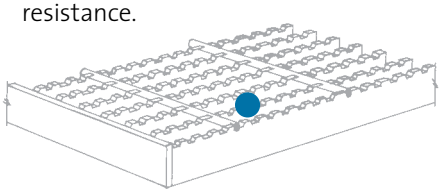
Edge Bar

Non-load-bearing bars, running at right angles to the load-bearing members.



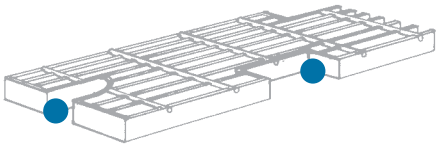
Serrations

Notches formed in the top of load-bearing bars to improve skid resistance.



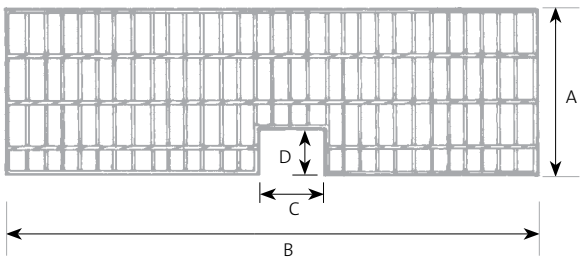
Cut-Outs

Area of flooring removed to clear around columns, pipes, machinery, etc.



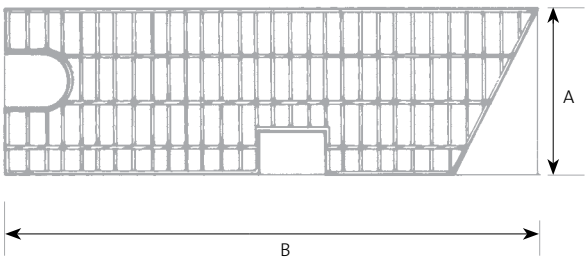
Nett Area

The area of flooring remaining after deducting cut-outs ([A x B] – [C x D]).



Gross Area

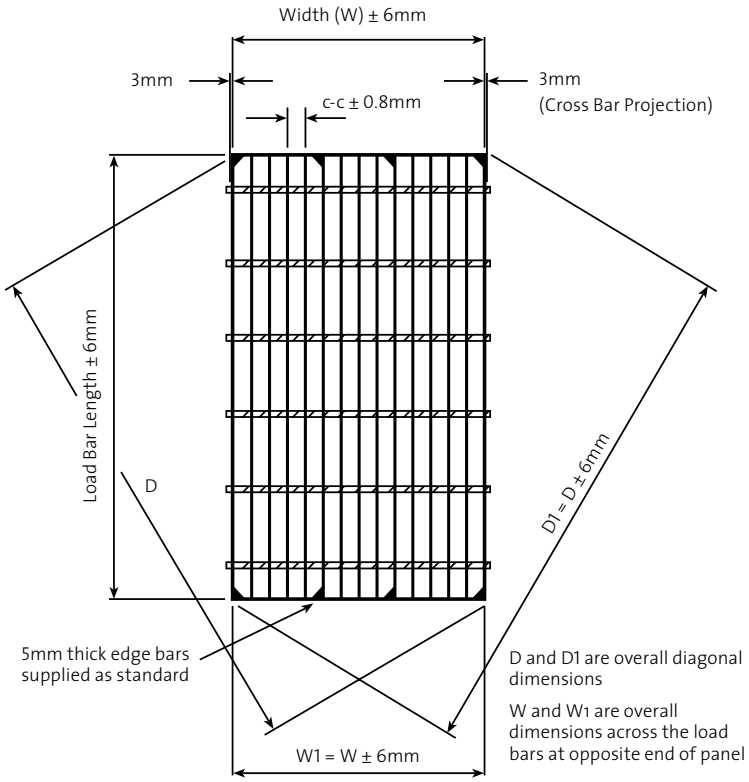
Total area of flooring, including cut-outs (A x B).



Weldlok® Forgebar Grating Manufacturing Tolerances

Overall Dimensions and Squareness

All dimensions are maximum permissible tolerances



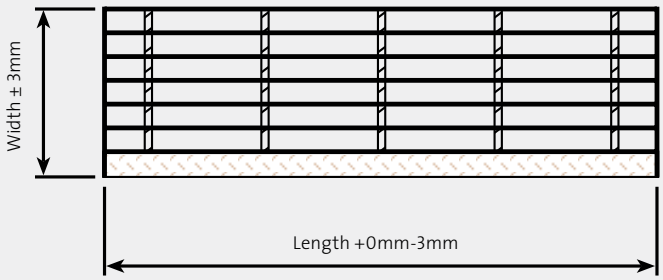
Standard Fabrication Welding

Edge bars and attachments are welded with a minimum 3mm fillet weld to one side of:
Every 5th load bar on Series 30 Grating
Every 4th load bar on Series 40 Grating
Every 3rd load bar on Series 60 Grating

Optional Welding

Full Weld:
Weld one side of every load bar.
Seal Weld:
Weld both sides of every load bar.

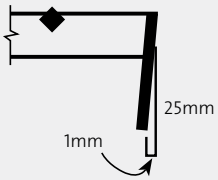
Stair Tread Tolerances



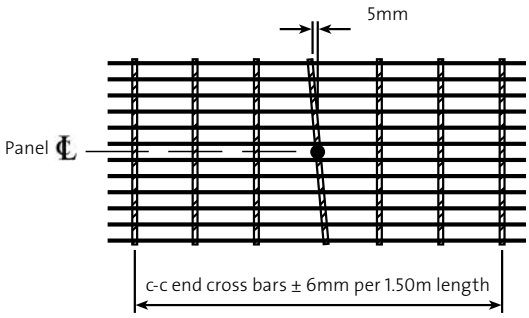
Note: Length of tread is distance between outer faces of end flats

Stair Tread End Flat Lean

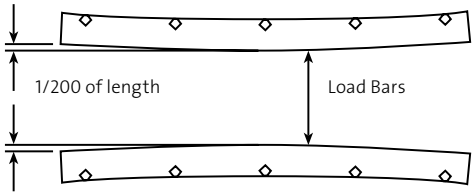
Fabrication: Edge bars and end plates welded on side of every load bar with minimum 3mm fillet weld



Cross Bar Alignment Spacing

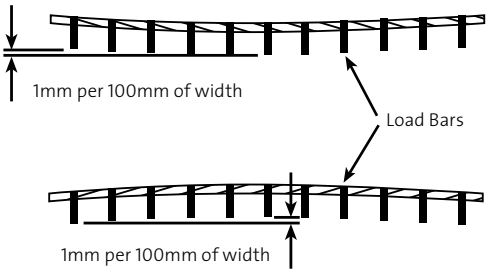


Longitudinal Bow

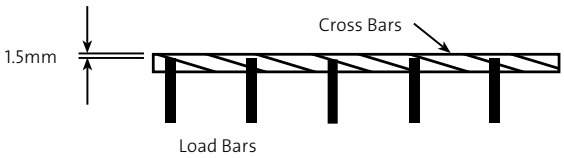


Transverse Bow

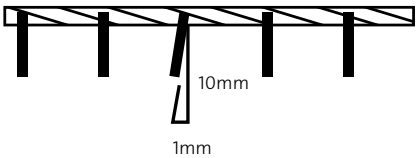
(Before fastening to supports)



Cross Bar Location



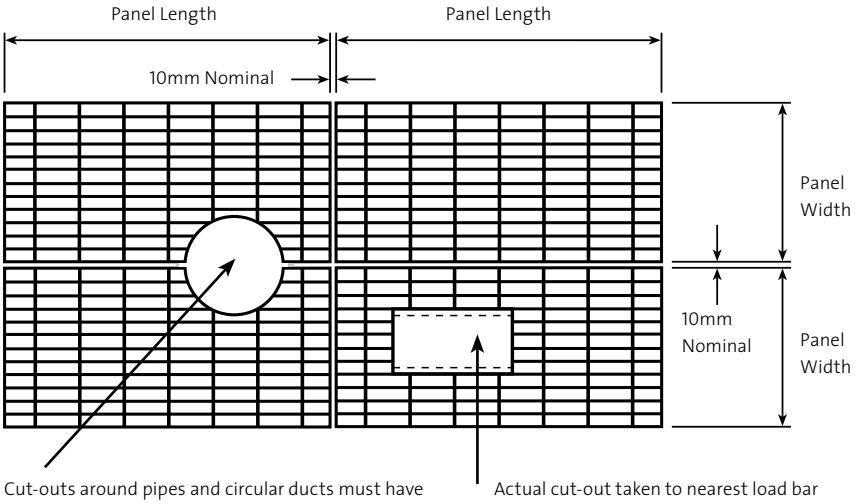
Load Bar Lean

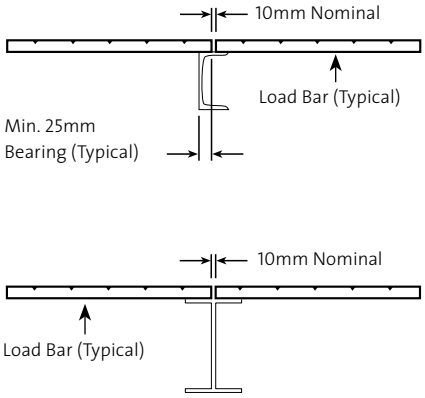


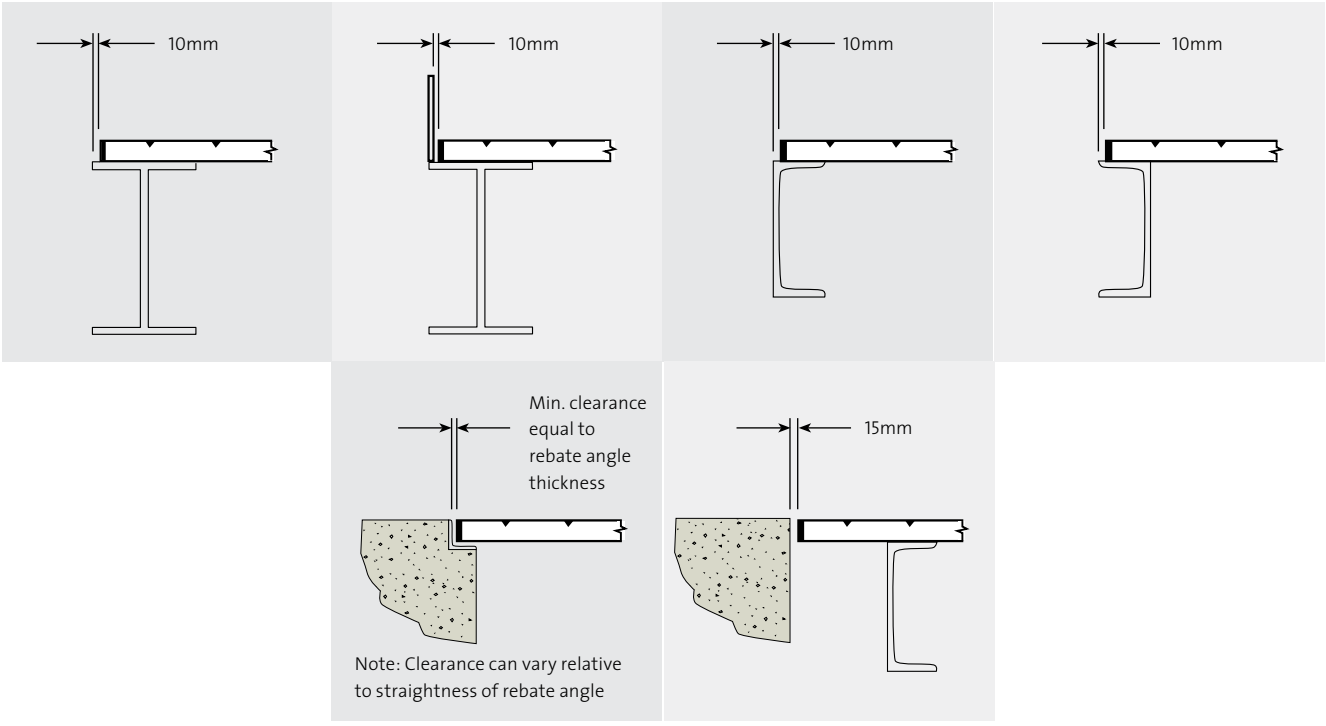
Weldlok® Forgebar Grating Installation Tolerances

Installation Tolerances

All dimensions are maximum permissible tolerances







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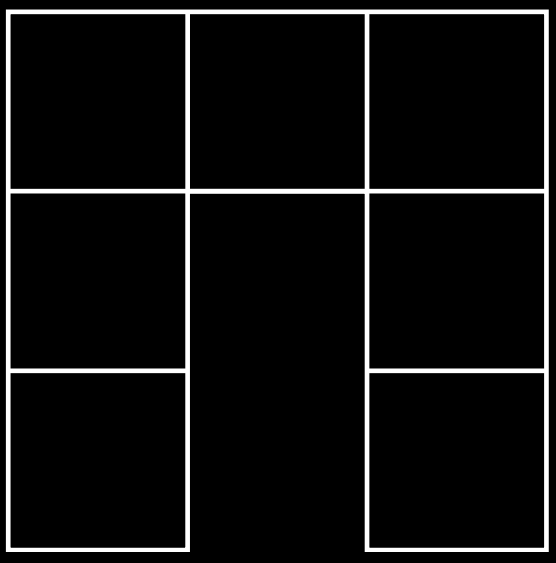

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