NEPEAN
Building &
Infrastructure

TM

Weldlok® Aluminium Grating & Handrail

NEPEAN™ Building & Infrastructure

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 architect, draughtsperson, engineer, fabricator and specifier in the correct selection of our range of aluminium grating and handrail products.

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

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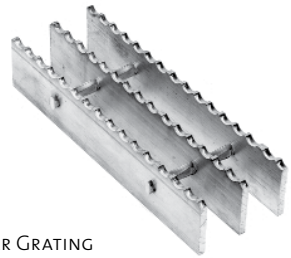
Weldlok®
Aluminium Products

Aluminium has a unique combination of properties that makes it one of the most versatile engineering and construction materials. Its many advantages include:

- Excellent corrosion resistance
- High strength-to-weight ratio
- Can be customised on site
- Non-toxic
- Naturally attractive
- Easily recycled
- Our most abundant metallic element

Rectangular Bar Grating



I-Bar Grating

Plank

It is an ideal material for bar grating because of its low mass (about a third the weight of copper or steel), unmatched strength to weight ratio and excellent corrosion resistance under most service conditions.

Aluminium construction products provide years of service without showing wear or decay. Because aluminium is non toxic, it can easily be cleaned and does not absorb bacteria-sustaining particles. This makes it an excellent choice for food processing facilities. Aluminium is also resilient; it can deflect under loads and then spring back.

These attributes make aluminium grating an ideal solution for many special applications such as sewage and wastewater treatment plants, off-shore drilling rigs, some types of chemical processing plants and marine superstructure applications. Its aesthetic appeal also makes aluminium a natural choice for architectural and commercial applications such as sunscreens, ceiling tiles, vents, fencing, building facades, fountains, walkways and entranceways.

Weldlok® aluminium grating at Abbot Point Coal Terminal, Qld

Weldlok® aluminium handrails and FRP walkway at Palm Beach Jetty, Rockingam, WA

Weldlok® aluminium grating balustrades and FRP walkway at Red Bluff Shared Pathway, Lake Macquarie, NSW

Weldlok® Aluminium Rectangular Bar Grating

Grating is pressure-locked, with crossbars permanently attached to load bars through a swaging process. Grating is available with a range of load bar sizes and spacing. Crossbar spacing can also be at 50mm or 100mm centres. Also available with serrated surface for slip resistance.

Rectangular Bar Grating is the most widely used aluminium pressure-locked grating. The square crossbars are inserted through punched holes in the rectangular load bars, then permanently locked into place by swaging.

Recessed crossbars provide clean, crisp lines, while the advanced swaging process eliminates the need for welding to form the panels, allowing for variety of spacing. Its aesthetic appeal and ability to meet tight tolerances make this grating ideal for architectural applications.

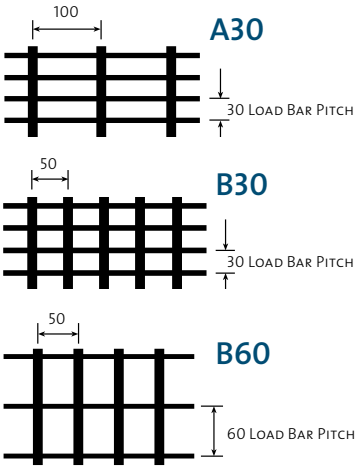
Series 30 Standard Mat Sizes

Load Bar Thickness	Span x Width	No. of Load Bars
3mm	6000 x 993mm	34
5mm	6000 x 995mm	34

Series 60 Standard Mat Sizes

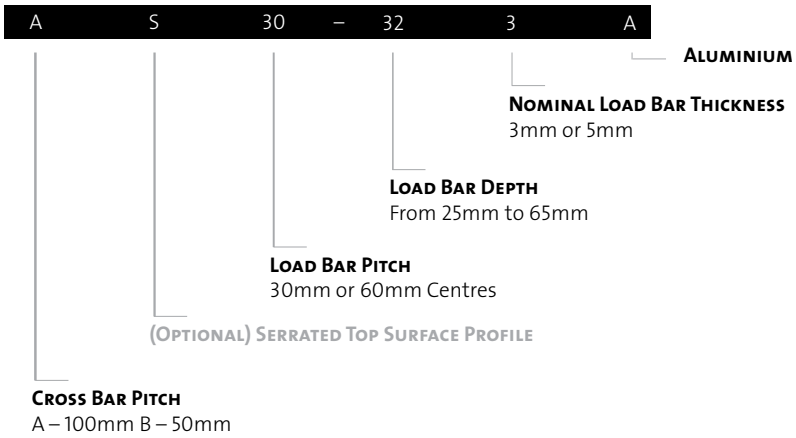
Load Bar Thickness	Span x Width	No. of Load Bars
3mm	6000 x 1023mm	18
5mm	6000 x 1025mm	18

Grating Profiles



Product Code Example

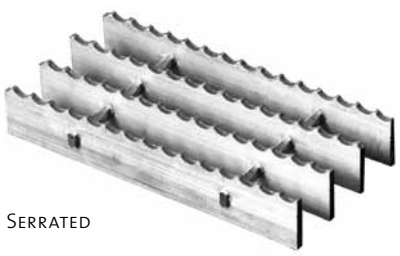
AS 30 – 32 3 A = Series 30 Aluminium Rectangular Grating, Serrated Load Bars 32 x 3 at 30mm centres, crossbars at 100mm spacing.



Finishes

Aluminium Grating is available in three finishes:
M = Mill Finish
PV = Passivated
A= Anodised

Plain



Serrated

Aluminium Rectangular Grating Safe Load Tables

Series 30 Safe Load and Deflection Table

Product Code	Load Bar Size (mm)	Load Bar Spacing (mm)	Cross Bar Spacing (mm)	Max Span at 4 kPa, 5mm deflection	Weight kg/m²		CLEAR SPAN 600	750	900	1050	1200	1350	1500	1650	1800	1950	2100
A30-253A	25x3	30	100	967	8.50	U	19.00	12.10	8.40	6.20							
B30-253A			50		10.26	D	3.50	5.50	7.90	10.80							
A30-255A	25 x 5	30	100	1099	13.00	U	31.60	20.20	14.10	10.30	7.90						
B30-255A			50		14.74	D	3.50	5.50	7.90	10.80	14.10						
A30-323A	32 x 3	30	100	1164	10.40	U	31.10	19.90	13.80	10.20	7.80						
B30-323A			50		11.84	D	2.70	4.30	6.20	8.40	11.00						
A30-325A	32 x 5	30	100	1322	16.20	U	51.80	33.20	23.00	16.90	13.00	10.20					
B30-325A			50		17.90	D	2.70	4.30	6.20	8.40	11.00	13.90					
A30-403A	40 x 3	30	100	1376	12.60	U	48.60	31.10	21.60	15.90	12.10	9.60					
B30-403A			50		14.37	D	2.20	3.40	4.90	6.70	8.80	11.10	13.70				
A30-405A	40 x 5	30	100	1563	19.80	U	81.00	51.80	36.00	26.40	20.20	16.00	13.00	10.70			
B30-405A			50		21.54	D	2.20	3.40	4.90	6.70	8.80	11.10	13.70	16.60			
A30-455A	45 x 5	30	100	1708	22.00	U	102.50	65.60	45.60	33.50	25.60	20.20	16.40	13.60	11.40		
B30-455A			50		23.74	D	2.00	3.10	4.40	6.00	7.80	9.90	12.20	14.80	17.60	7.80	
A30-505A	50 x 5	30	100	1848	24.30	U	126.50	81.00	56.20	41.30	31.60	25.00	20.20	16.70	14.10	12.00	
B30-505A			50		26.03	D	1.80	2.70	4.00	5.40	7.00	8.90	11.00	13.30	15.80	18.60	
A30-555A	55 x 5	30	100	1985	27.42	U	153.10	98.00	68.10	50.00	38.30	30.20	24.50	20.20	17.00	14.50	12.50
B30-555A			50		29.15	D	1.60	2.50	3.60	4.90	6.40	8.10	10.00	12.10	14.40	16.90	19.60
A30-655A	65x5	30	100	2250	32.10	U	213.90	136.90	95.00	69.80	53.50	42.20	34.20	28.30	23.80	20.20	17.50
B30-655A			50		33.80	D	1.40	2.10	3.00	4.10	5.40	6.80	8.40	10.20	12.20	14.30	16.60

U – Safe uniform load (kPa)
D – Deflection (mm)
Grating for spans to the left of the heavy line have a deflection less than 5mm for uniform loads of 4 kPa
When serrated grating is specified, the depth of grating required for a specific load will be 5mm greather than that shown in these tables.
Load Bar Alloy 6063-T6
Cross Bar Alloy 6060-T5

Bold type indicates preferred item (likely to be in stock)

Series 60 Safe Load and Deflection Table

Product Code	Load Bar Size (mm)	Load Bar Spacing (mm)	Cross Bar Spacing (mm)	Max Span at 4KPa, 5mm deflection	Weight kg/m²		CLEAR SPAN 600	750	900	1050	1200	1350	1500	1650	1800	1950	2100
B60-253A	25x3	60	50	813	6.80	U	19.00	12.10	8.40								
						D	7.00	11.00	15.80								
B60-255A	25 x 5	60	50	924	9.15	U	31.60	20.20	14.10	10.30							
						D	7.00	11.00	15.80	21.50							
B60-323A	32 x 3	60	50	979	7.80	U	31.10	19.90	13.80	10.20							
						D	5.50	8.60	12.40	16.80							
B60-325A	32 x 5	60	50	1112	10.70	U	51.80	33.20	23.00	16.90	13.00						
						D	5.50	8.60	12.40	16.80	22.00						
B60-403A	40 x 3	60	50	1157	8.96	U	48.60	31.10	21.60	15.90	12.10						
						D	4.40	6.90	9.90	13.50	17.60						
B60-405A	40 x 5	60	50	1315	12.65	U	81.00	51.80	36.00	26.40	20.20	16.00					
						D	4.40	6.90	9.90	13.50	17.60	22.20					
B60-455A	45 x 5	60	50	1436	13.80	U	102.50	65.60	45.60	33.50	25.60	20.20	16.40				
						D	3.90	6.10	8.80	12.00	15.60	19.80	24.40				
B60-505A	50 x 5	60	50	1554	14.95	U	126.50	81.00	56.20	41.30	31.60	25.00	20.20	16.70			
						D	3.50	5.50	7.90	10.80	14.10	17.80	22.00	26.60			
B60-555A	55 x 5	60	50	1669	16.50	U	153.10	98.00	68.10	50.00	38.30	30.20	24.50	20.20	17.00		
						D	3.20	5.00	7.20	9.80	12.80	16.20	20.00	24.20	28.80		
B60-655A	65 x 5	60	50	1892	18.00	U	213.90	136.90	95.00	69.80	53.50	42.20	34.20	28.30	23.80	20.20	17.50
						D	2.70	4.20	6.10	8.30	10.80	13.70	16.90	20.40	24.30	28.60	33.10

U – Safe uniform load (kPa)
D – Deflection (mm)
Grating for spans to the left of the heavy line have a deflection less than 5mm for uniform loads of 4 kPa
When serrated grating is specified, the depth of grating required for a specific load will be 5mm greather than that shown in these tables.
Load Bar Alloy 6063-T6
Cross Bar Alloy 6060-T5

Bold type indicates preferred item (likely to be in stock)

Weldlok® Aluminium Stair Treads

Weldlok® aluminium stair treads are fabricated from rectangular swaged bar grating. The bar grating is available with a plain or serrated surface.

Aluminium stair treads are available with two types of nosing - floor plate or non-slip yellow abrasive. The treads can be welded into place or supplied with pre-drilled holes for bolting.

Overall tread length can be made to any dimension. However, it is preferable where possible to select tread dimensions from the tables of recommended widths and maximum lengths below.

Stair Tread Types

T3 Floor plate nosing (weld-in)

T4 Floor plate nosing (bolt-in)

T5 Yellow abrasive nosing (weld-in)

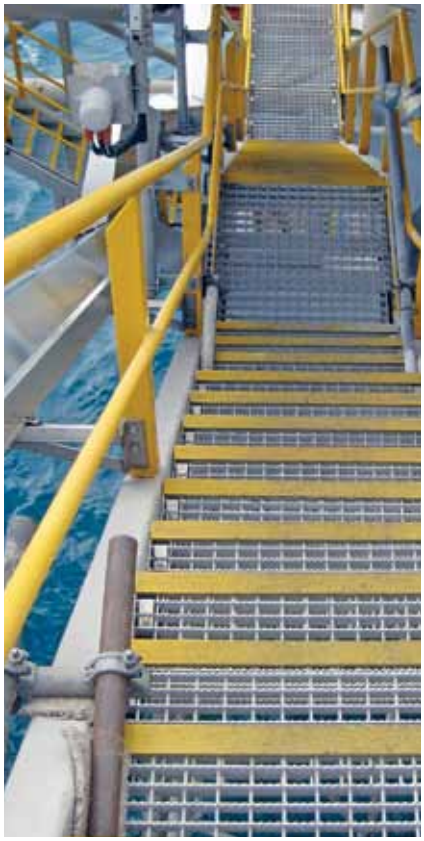
T6 Yellow abrasive nosing (bolt-in)

T3 floor plate nosing (weld-in)

T4 floor plate nosing (bolt-in)

T5 yellow abrasive nosing (weld-in)

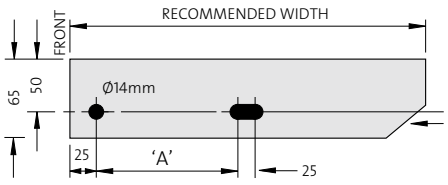
T6 yellow abrasive nosing (bolt-in)



Recommended Widths (mm)								
Type T3/T4	Series 30	125	155	185	215	245	275	305
	Series 60		155		215		275	
Type T5/T6	Series 30	125	155	185	215	245	275	305
	Series 60			185		245		305
Bolted Connections								
End Plate Hole Centres "A"		45	75	75	100	100	100	100

Recommended Max. Lengths (mm)			
Load Bar Size	25 x 5	32 x 5	40 x 5
Series 30	550	900	1275
Series 60		450	700

Standard End Plates for Bolted Treads



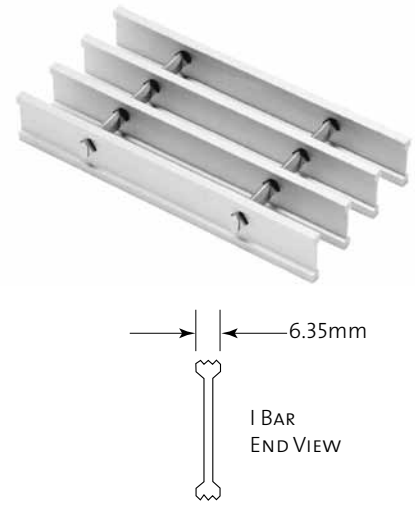
35° SNIPE TO ALL TREADS
(UNLESS REQUESTED OTHERWISE)

Note: Special End Plate Hole Centres available on request.

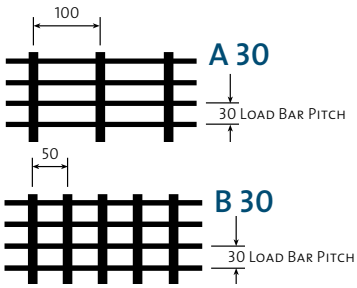
Weldlok® Aluminium I-Bar Grating Profiles

I-Bar is an attractive and reasonably priced alternative to rectangular bar grating. Extruded I- Bar sections have a similar load carrying capacity, with less weight per square metre, than rectangular bars.

Striated load bar provides built-in slip resistance without the added cost of serration.



I-Bar Grating Profiles



Note: Other profiles such as 24, 17 and 11 load bar pitch are available on request.

Aluminium I-Bar Grating Series 30 Safe Load and Deflection Table

Product Code	Load Bar Size (mm)	Load Bar Spacing (mm)	Max Span at 4 kPa, 5mm deflection	Weight kg/m²		CLEAR SPAN (mm)											
						600	750	900	1050	1200	1350	1500	1650	1800	1950	2100	2400
A30-256A I-BAR	25 x 6	30	1120	9.72	U	30.25	24.17	20.15	17.28	15.13							
					D	2.92	4.57	6.57	8.96	11.70							
A30-326A I-BAR	32 x 6	30	1320	11.42	U	47.25	37.77	31.50	26.99	23.60	21.01						
					D	2.33	3.65	5.25	7.16	9.35	11.86						
A30-406A I-BAR	40 x 6	30	1495	13.18	U	68.03	54.44	45.33	38.87	34.03	30.25	27.19					
					D	1.95	3.05	4.39	5.69	7.79	9.88	12.19					
A30-456A I-BAR	45 x 6	30	1670	14.94	U	92.59	74.07	61.70	52.90	46.29	41.18	37.06	33.65	30.88			
					D	1.67	2.61	3.76	5.13	6.68	8.45	10.46	12.65	15.06			
A30-506A I-BAR	50 x 6	30	1855	16.75	U	120.94	96.76	80.63	69.13	60.46	53.77	48.40	44.00	40.31	37.19		
					D	1.47	2.29	3.30	4.47	5.84	7.41	9.14	11.07	13.15	15.44		
A30-556A I-BAR	55 x 6	30	2030	18.31	U	153.07	122.47	102.07	87.47	76.56	68.03	61.23	55.68	51.03	47.11	43.75	
					D	1.29	2.03	2.92	3.98	5.20	6.57	8.12	9.83	11.71	13.74	15.95	
A30-656A I-BAR	65x6	30	2210	20.26	U	188.97	151.20	126.01	108.01	94.51	83.97	75.60	68.70	63.00	58.17	54.00	47.26
					D	1.17	1.83	2.64	3.58	4.67	5.92	7.31	8.84	10.54	12.37	14.35	18.72

U – Safe uniform load (kPa)
D – Deflection (mm)
Grating for spans to the left of the heavy line have a deflection less than 5mm for uniform loads of 4 kPa

Weldlok® Aluminium Plank

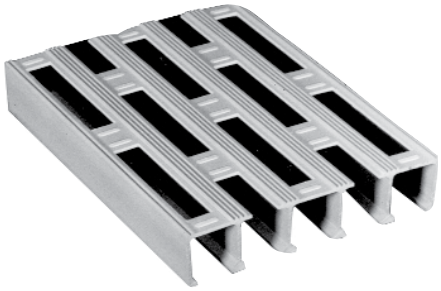
Extruded aluminium grating available in 150mm wide sections, either plain-sided or interlocking. Plank can be provided in sections up to 8 metres in length.

Aluminium Plank is a structurally sound and attractive alternative to bar grating. The planks are relatively maintenance-free and have no separate parts to work loose or splinter.

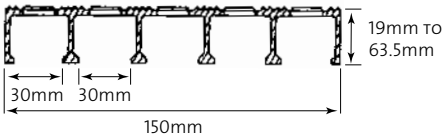
Available unpunched as an economical and structurally superior substitute for aluminium checkerplate, or with a variety of punched patterns for the passage of air, light, heat or moisture. A diagonal punched pattern is also available for wheelchair accessibility and high-heel foot traffic.

Interconnecting webs provide a flush walking surface for maximum foot contact and comfort. Planks are also an economical alternative in applications requiring open grating with plate attached to the top surface.

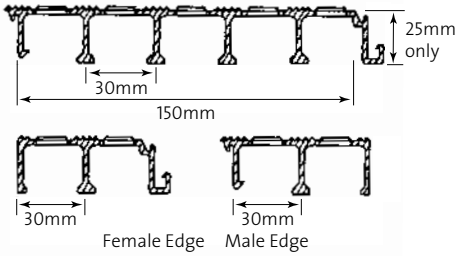
Typical applications include wastewater treatment plants to reduce odours, as entranceways, walkways on bridges and walking trails, in marine refrigeration, stadiums, etc.



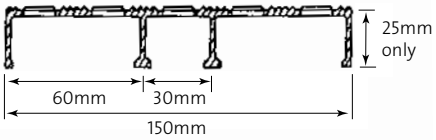
Heavy Duty (Plain Sides)

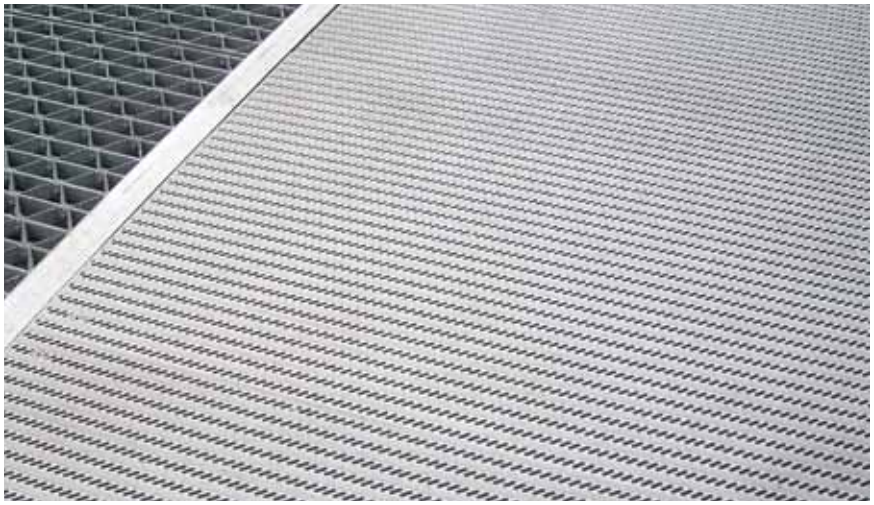


Heavy Duty (Interlocking Sides)



Light Series (Plain Sides)

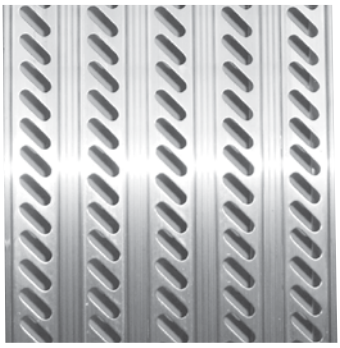




Weldlok® Aluminium Plank Punch Patterns

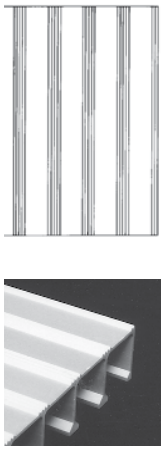
Aluminium Plank is available unpunched or with a variety of punched patterns as shown. Rectangular or square punched holes are most commonly used for water and waste treatment plants and in marine applications. The Plank surface can be supplied plain or with one of two styles of upsets (OGI or WACO) designed to promote a slip-resistant walkway, especially in the presence of moisture, oil or other spilled substances.

Diagonal punched patterns meet specifications for high-heel and wheelchair traffic.



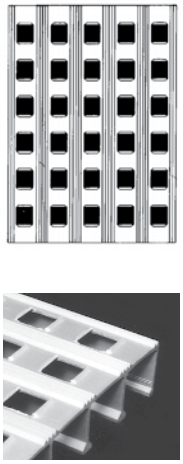
Unpunched

Unpunched

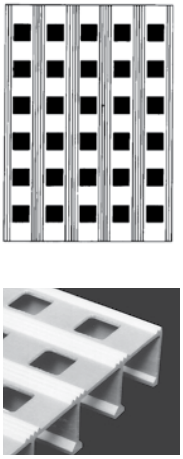


Square Punched

Upset Pattern

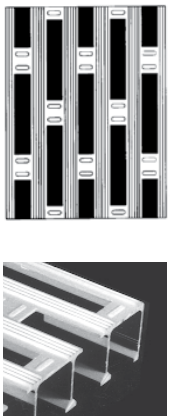


Plain Pattern

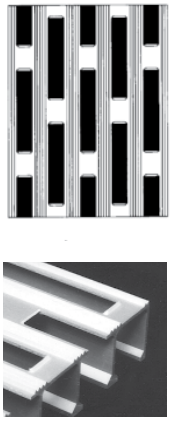


Rectangular Punched

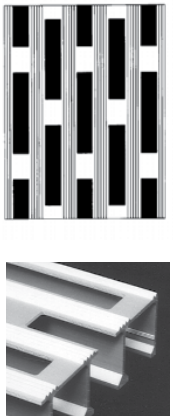
Upset Pattern (OGI)



Upset Pattern (WACO)



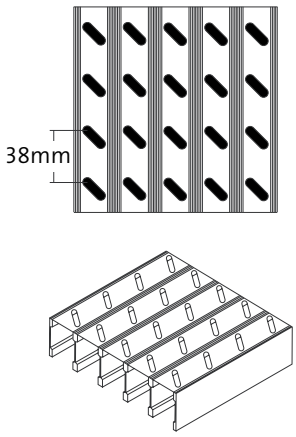
Plain Pattern



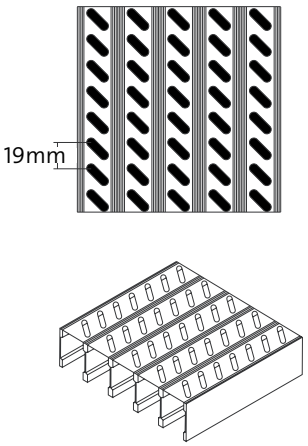
Upset Pattern (OGI)

Diagonal Punched

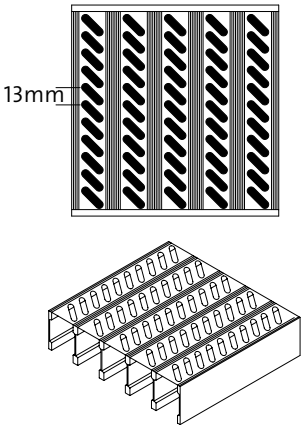
AL Plank 8*



AL Plank 15*



AL Plank 22*



*number indicates % open area

Weldlok® Aluminium Plank
Safe Load & Deflection Tables

Heavy Duty

Plank Depth (mm)	Max. Span at 4 kPa 5mm deflection	Weight kg/m² Non Punched	Rect. Punched	Square Punched		Clear Span (mm) 600	750	900	1050	1200	1350	1500	1650	1800	1950	2100	2400
19	990	10.74	8.78	9.76	U	20.82	13.30	9.24	6.79	5.17	4.07	3.30					
					D	3.07	6.02	8.68	11.81	15.44	19.55	24.13					
25	1244	12.69	10.74	11.72	U	39.88	25.52	17.71	13.02	9.95	7.84	6.36	5.26	4.40			
					D	3.15	4.90	7.08	9.65	12.60	15.95	19.68	23.82	28.37			
32	1473	15.62	13.67	14.65	U	70.09	44.81	31.11	22.88	17.52	13.84	11.20	9.24	7.76	6.61	5.69	4.35
					D	2.71	4.24	6.12	8.33	10.87	13.76	16.99	20.57	24.48	28.72	33.32	43.53
38	1702	18.55	16.60	17.57	U	103.75	66.41	46.11	33.84	25.90	20.48	16.56	13.69	11.48	9.82	8.42	6.46
					D	2.28	3.58	5.15	7.03	9.19	11.63	14.37	17.37	20.70	24.28	28.16	36.80
45	1905	21.48	19.53	20.50	U	143.25	91.68	63.67	46.77	35.81	28.29	22.88	18.91	15.89	13.54	11.68	8.95
					D	1.98	3.12	4.49	6.12	8.00	10.11	12.49	15.11	17.98	21.13	24.48	32.00
50	2108	23.92	21.97	22.95	U	190.32	121.79	84.55	62.14	47.54	37.58	30.45	25.13	21.11	17.99	15.51	11.86
					D	1.75	2.74	3.96	5.38	7.03	8.91	10.99	13.31	15.85	18.59	21.56	28.17
57	2311	26.85	24.41	25.87	U	244.61	156.56	108.68	79.85	61.13	48.31	39.11	32.31	27.14	23.12	19.96	15.27
					D	1.55	2.41	3.48	4.75	6.20	7.85	9.70	11.73	13.97	16.41	19.02	24.86
63.5	2463	28.80	26.85	27.83	U	285.89	182.94	127.07	93.31	71.43	56.45	45.72	37.77	31.74	27.04	23.31	17.86
					D	1.39	2.18	3.15	4.30	5.61	7.08	8.76	10.62	12.62	14.83	17.19	22.45

U – Safe uniform load (kPa)
D – Deflection (mm)
Grating for spans to the left of the heavy line have a deflection less than 5mm for uniform loads of 4 kPa

Light Series

Plank Depth (mm)	Weight kg/m² Non Punched	Rect. Punched	Square Punched		Clear Span (mm) 600	750	900	1050	1200	1350	1500	1650	1800	1950	2100	2400
25	10.25	8.30	9.27	U	26.13	16.71	11.58	8.52	6.51	5.12						
				D	2.87	4.49	6.45	8.81	11.5	14.5						

Weldlok® Aluminium Grating Specifications

These specifications are intended as a guide for architects and engineers, and should be modified to fit the specific conditions of the application.

General

The contractor shall provide all labour, materials, equipment and incidentals as specified to install grating and stair treads.

Site measurements should be taken prior to preparation of shop drawings and fabrication, where required, to ensure proper fitting of the work.

Submittals

The contractor shall submit for approval shop drawings for the fabrication and erection of all work, including plans, elevations and details of sections and connections. Type and location of all fasteners should be shown.

The contractor shall submit the manufacturer's specifications, load tables, anchor details and standard installation details.

Products

Specify complete product details. For example:

Grating: Weldlok® Aluminium Rectangular Bar, or approved equivalent.

Load Bars: Rectangular bars at maximum 60mm centres.

Crossbars: Locked at right angles to load bars at maximum 100mm centres (50mm cross-bar centres may be specified at the discretion of the architect/engineer).

Loading: Grating to carry a pedestrian loading equal to a uniform load of 2.5kN per square metre over the required clear span, with deflection not to exceed 5mm. (Alternate loading requirement may be specified at the discretion of the architect/engineer in accordance with AS1657.)

Surface: Plain. (Serrated surface may be specified for maximum slip resistance.)

Finish: Mill finish, passivated, anodised.

Stair Treads: Specify same type and spacing as grating.

Tread Nosing: Specify whether nosing is floor plate or abrasive yellow nosing. (Carrier End Plate angles should be specified in conjunction with close mesh grating treads.)

Installation

Prior to grating installation, the contractor shall inspect supports for correct size, layout and alignment. Any inconsistencies between contract drawings and supporting structure deemed detrimental to grating placement shall be reported in writing to the architect or owner's agent prior to grating placement.

Grating shall be installed in accordance with shop drawings and standard installation clearances.

Fitting & Placement

Before installation, all cutting and fitting required for installation should be completed. Grating shall be placed so that cross-bars align.

Wherever grating is pierced by pipes, ducts and structural members, openings must be cut neatly and accurately to size and a rectangular band bar of the same height and material as the load bars welded to the opening, unless a kick plate is required by AS1657.

Cut-outs for circular obstructions are to be at least 50mm larger in diameter than the obstruction. Cut-outs for all piping 100mm or less shall be made on site.

All rectangular cut-outs are to be made to the next load bar beyond the penetration, with a clearance not to exceed load bar spacing.

Standard panel widths shall be used wherever possible.

Protection of Aluminium

Where aluminium surfaces come into contact with dissimilar materials such as dissimilar metals, concrete, masonry or lime mortar, exposed aluminium surfaces shall be painted with one coat of bituminous paint or other approved insulating material.

Where stainless steel fasteners are used these should be isolated from the aluminium by Weldlok® nylon separation washers.

Grating Attachment

Appropriate fixing devices (such as clips, clamps and anchor blocks) and fasteners must be used to secure grating to supporting members or prepared openings. Grating fixing should be installed with a minimum of four per panel or four per square metre, whichever is greater.

Weldlok® Aluminium Grating Fastening Methods

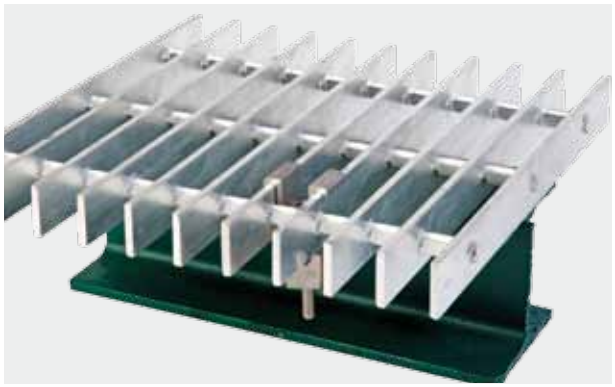
Weldlok® fixing clips are recommended to secure grating to supporting members. A minimum of 4 clips should be used per panel or 4 per square metre, whichever is greater.

30 Series Aluminium Saddle Clip

Suitable for 30 Series grating. Comprises extruded aluminium top clip, 8mm diameter hex head screw and threaded bent bottom clip.

Material: 6063 Aluminium Alloy (Top Clip)

Stainless Steel 316 (Bottom Clip/Screw)



30 Series SS316 Clip Set

Suitable for Series 30 Grating. Comprises top clip, 8mm diameter hex head screw, nyloc nut and folded bottom clamping bracket.

Material: Stainless Steel 316

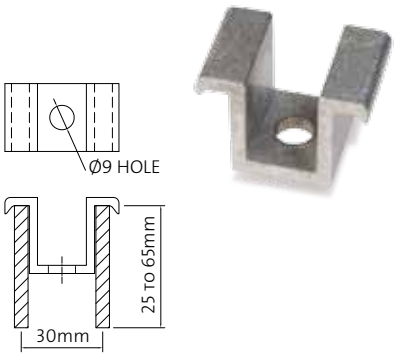
60 Series SS316 Clip Set

Suitable for Series 30 & 60 Grating. Comprises double saddle clip, 8mm diameter hex head screw, nyloc nut and folded bottom clamping bracket.

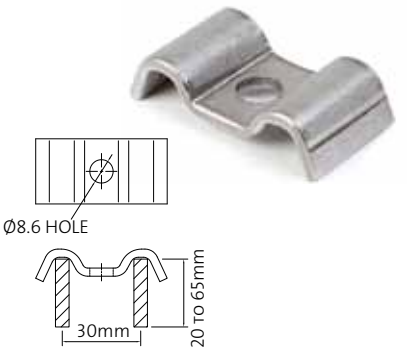
Material: Stainless Steel 316

Weldlok® Aluminium Grating Fixing Clips

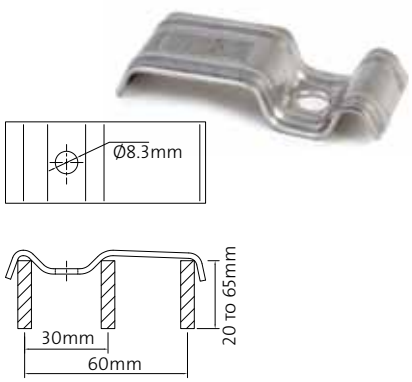
Top Clips



30 Series Aluminium Saddle Top Clip

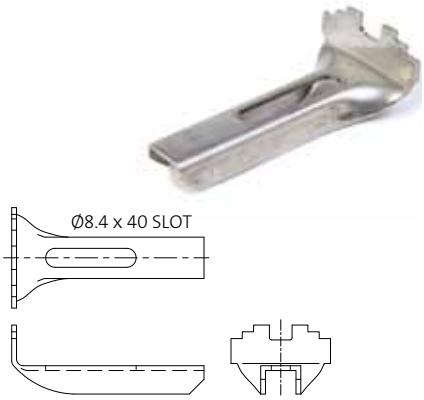


30 Series SS316 Clip Top

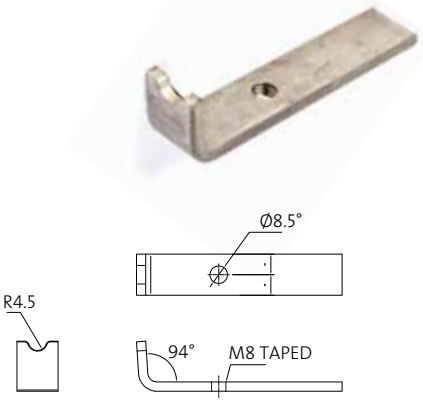


60 Series SS316 Clip Top

Bottom Clips



Folded SS316 Bottom Clip



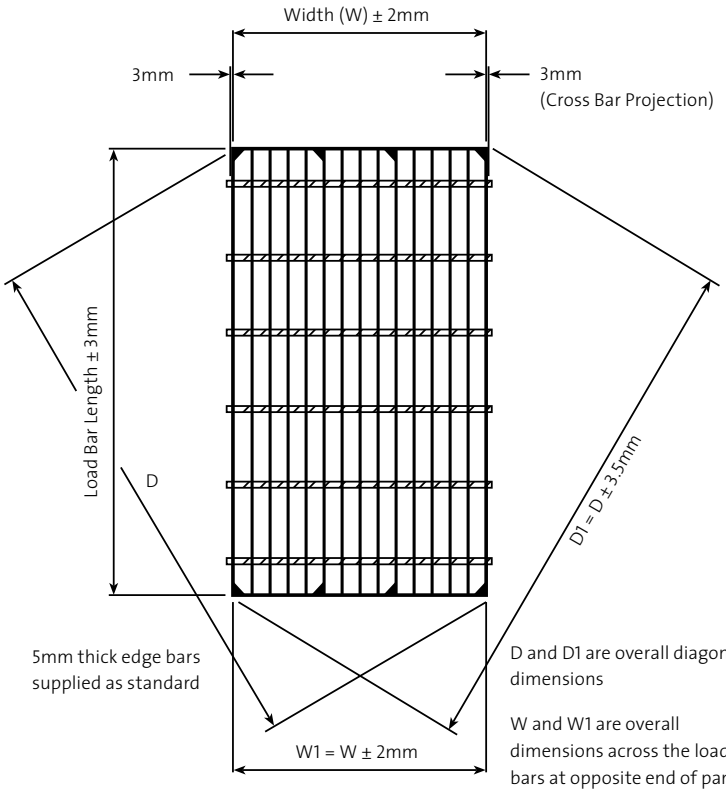
Threaded SS316 Bent Bottom Clip

SS316 M8 Screw with Nyloc Nut (length 65mm & 100mm)

Weldlok® Aluminium Grating Manufacturing Tolerances

Overall Dimensions and Squareness

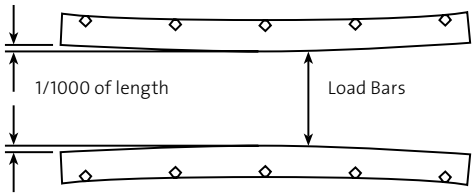
All dimensions are maximum permissible tolerances



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

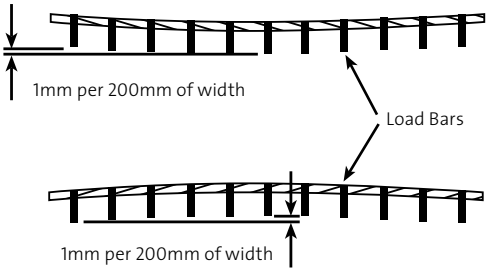
Optional Welding
Full Weld:
Weld one side of every load bar.
Seal Weld:
Weld both sides of every load bar.

Longitudinal Bow

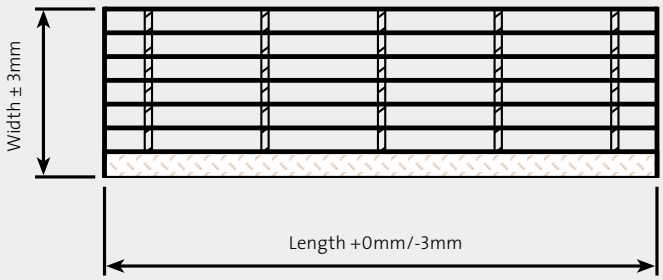


Transverse Bow

(Before fastening to supports)



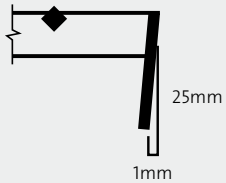
Stair Tread Tolerances



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

Stair Tread End Flat Lean

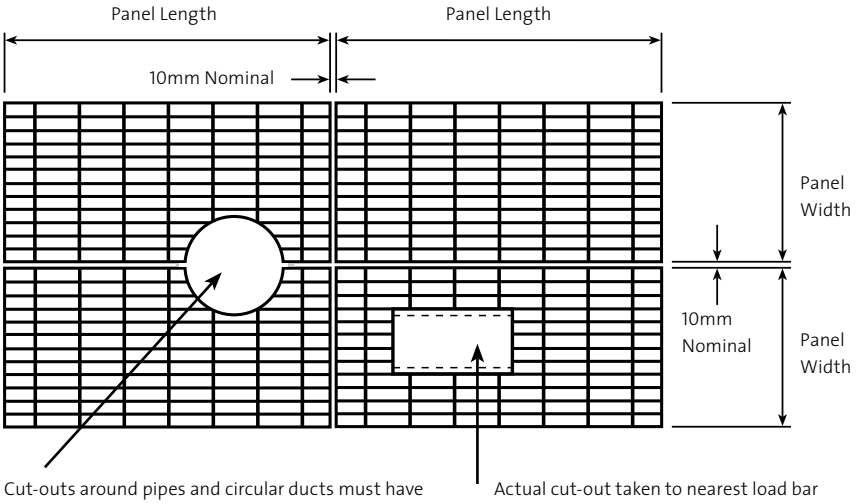
Fabrication: Edge bars and end plates welded on side of every load bar with minimum 3mm fillet weld

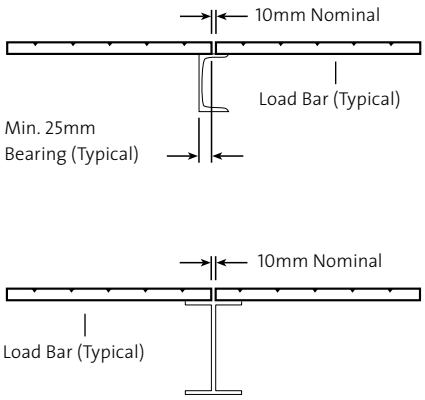


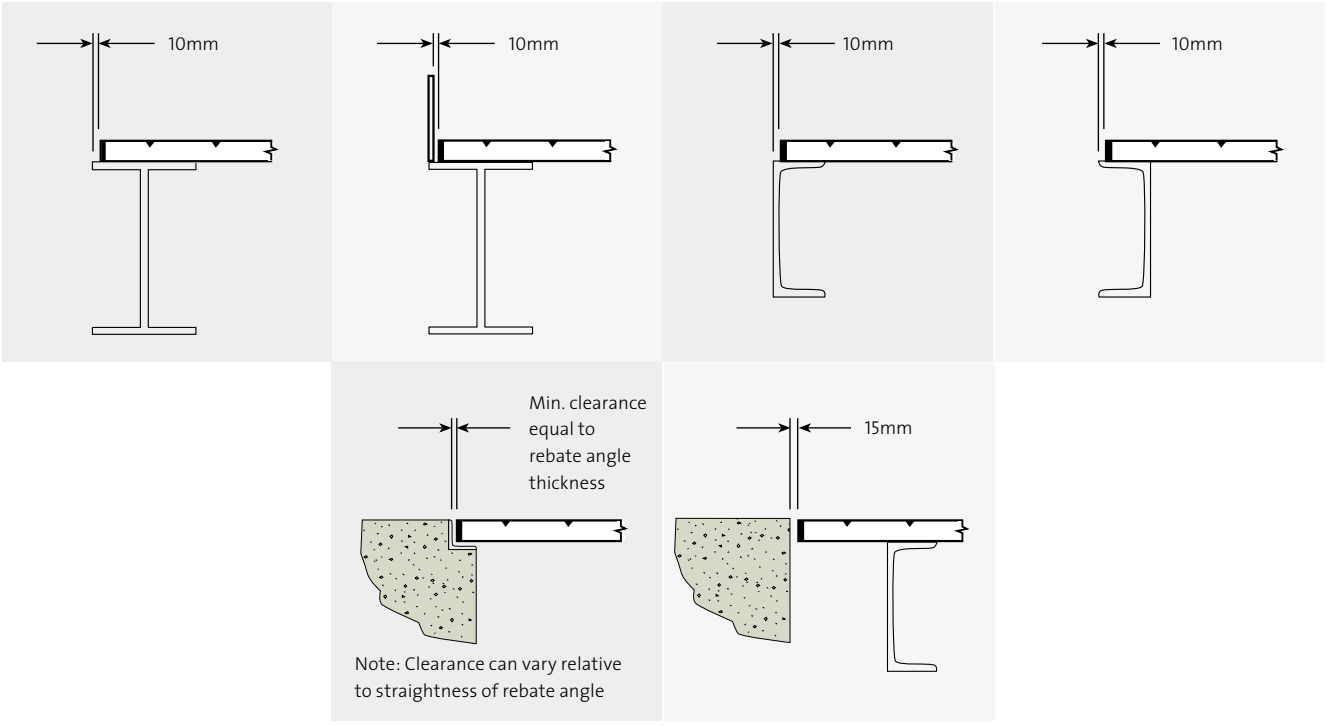
Weldlok® Aluminium Grating Installation Tolerances

Overall Installation Dimensions

All dimensions are maximum permissible tolerances



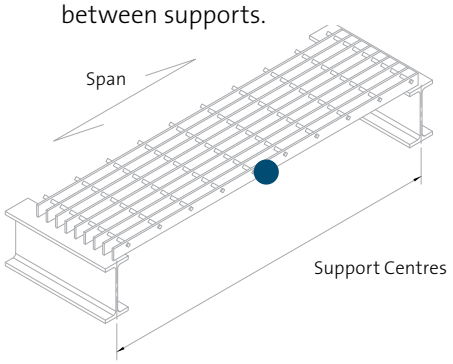




Weldlok® Aluminium Grating
Grating Terminology

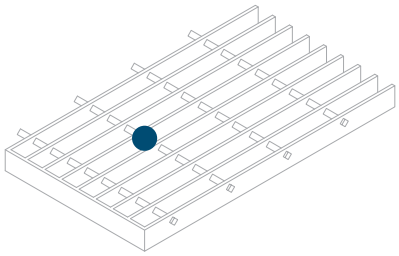
Load Bearing Bar

A load-carrying member spanning between supports.



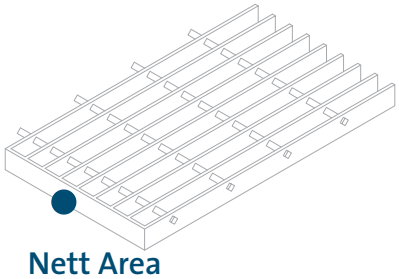
Cross Bar

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



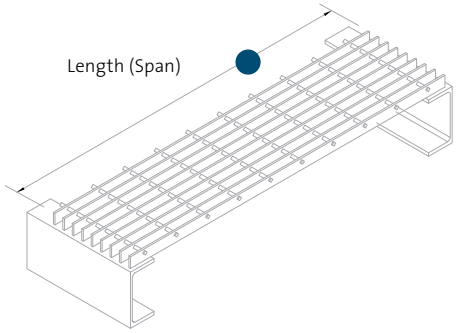
Edge Bar

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



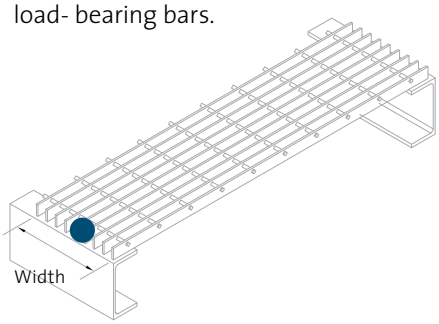
Length (Direction of Span)

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



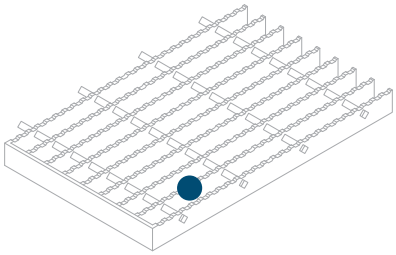
Width

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



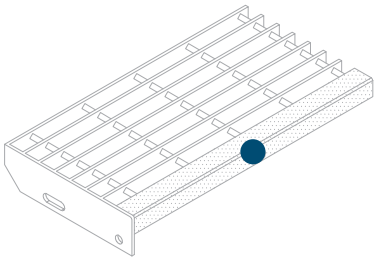
Serrations

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



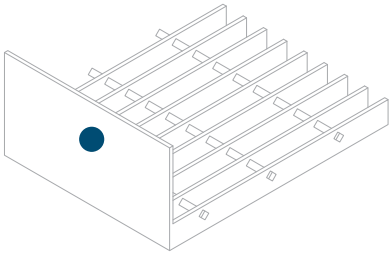
Nosing Bar

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



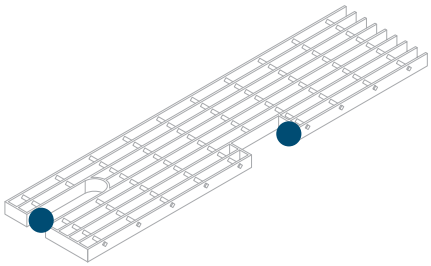
Kick Plate

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



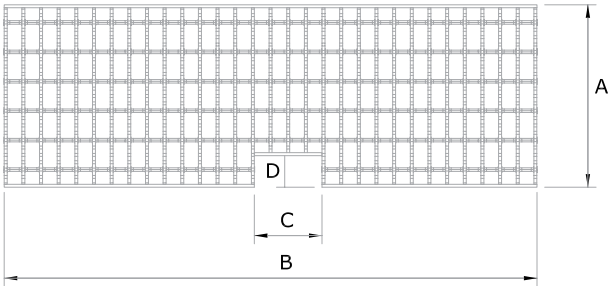
Cut-Outs

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



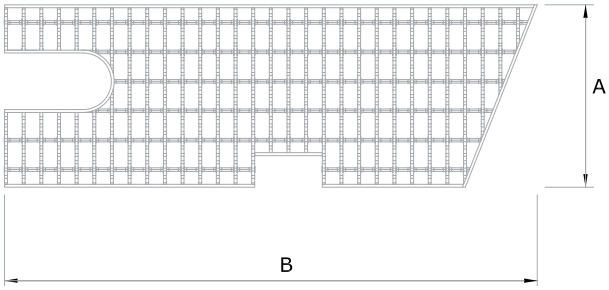
Nett Area

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).



Aluminium Handrail Specification & installation

Stanchions

Stanchions are manufactured from aluminium tubing 50mm OD x 4.0mm wall thickness. Ball size is 76mm OD x 2.0mm wall thickness.

Stanchion Pitching

Australian Standard AS1657:1992 recommends a maximum spacing for stanchions of 1800mm centres. All warranties become void if the system is not erected in compliance with this standard.

Stanchion Handing

Handing of stanchions is from point of view on stairway or platform, facing the inside of the stanchion. Those on the right-hand side are suffixed 'R', those on the left-hand side are suffixed 'L'.

Rails

Standard drilled openings on stanchions allow for a top rail (handrail) of 46mm OD and a mid-rail (knee-rail) of 38.1mm OD. Rails are supplied in standard lengths of 6.0m.

Handrail (HR): 46mm OD x 39mm ID. Mass = 1.34 kg/m (6.0m = 8.04kg).

Knee-rail (KR): 38.1mm OD x 34.1 ID. Mass = 0.97 kg/m (6.0m = 5.82kg)

Kick Plate Mounting Brackets

Kick plate mounting brackets (KPMB) are manufactured from 40mm x 40mm x 6mm angle x 93mm long, with a mass of 0.11kg each. Holes are 14 x 22mm slots at 51mm centres to suit 100mm high kick plate.

Kick Plates

Standard kick plates (KP) are 100mm x 6mm flat in 4.0m lengths, with a mass of 1.62 kg/m (4.0m = 6.48kg). Splice plates (KPSP) are 100mm x 80mm x 6mm with a mass of 0.13kg each. All kick plates have two slotted holes at each end, 14mm diameter x 27mm long.

Base Plates

Base plates are manufactured in standard, angle-mounted and corner versions. For details see page 20.

Materials

NEPEAN Building & Infrastructure can supply detailed material specifications on request.

Finish

Standard finish is passivated natural aluminium. Optional finishes include anodising and powder coating, which can be done off-site.

Separation Washers

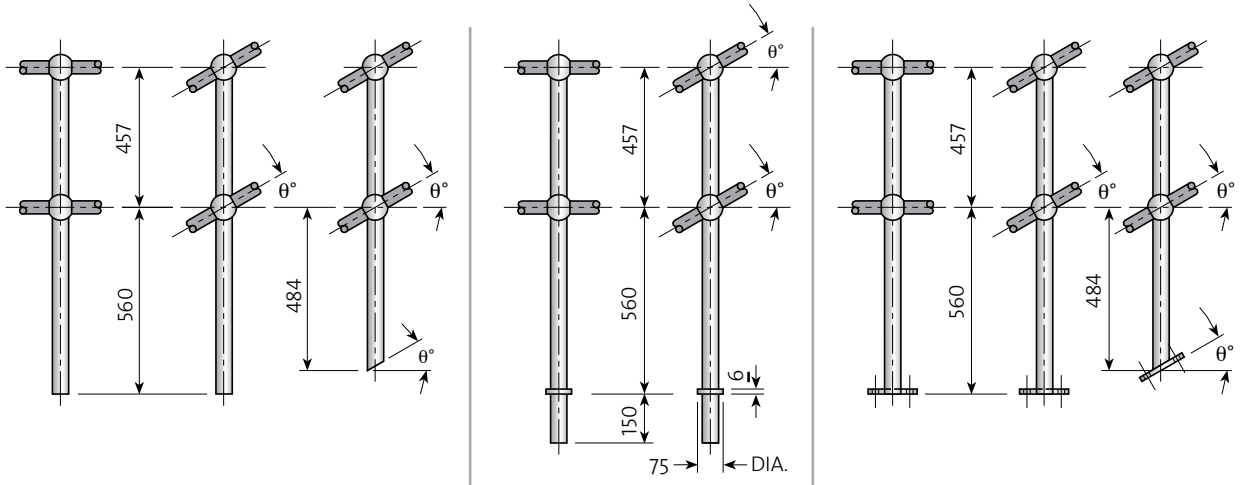
It is recommended that nylon separation washers be used between dissimilar metals. These can be supplied with the handrail.

General Installation Instructions

1. Loosely bolt stanchions to structure.
2. Feed top rails and mid-rail through ball joints.
3. Where top or mid-rails join, use slip joint.
4. Tighten nuts and bolts on stanchions.
5. Run approximately 25mm (1 inch) of weld on side or top where ball units join top and mid-rails.
6. Bends and corners to be fully welded then ground smooth.

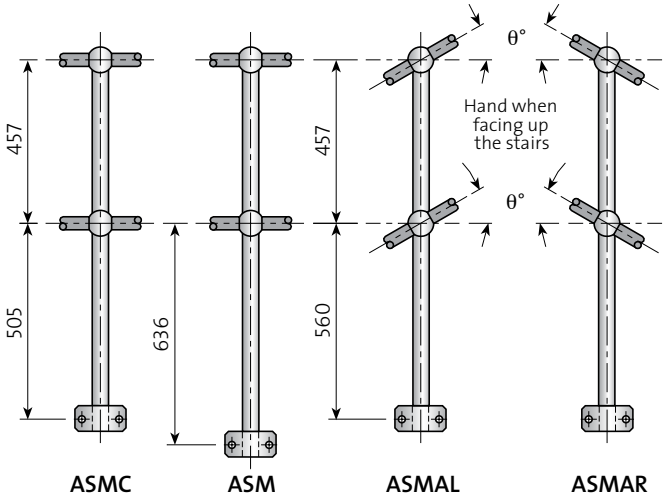
Weldlok® Aluminium Handrail
Standard Stanchions

Standard Stanchions

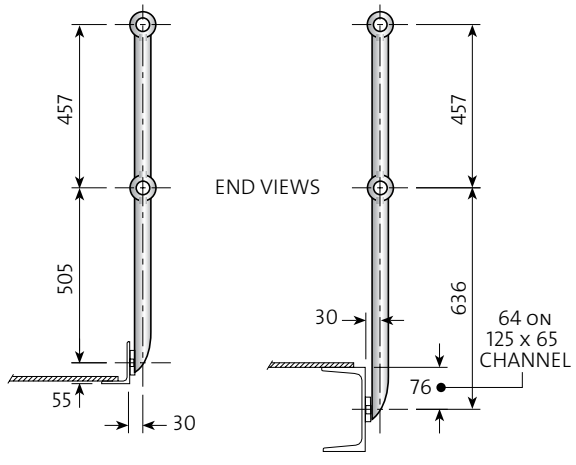


AW AWA AWAA AC ACA ABP ABPA ABPAM

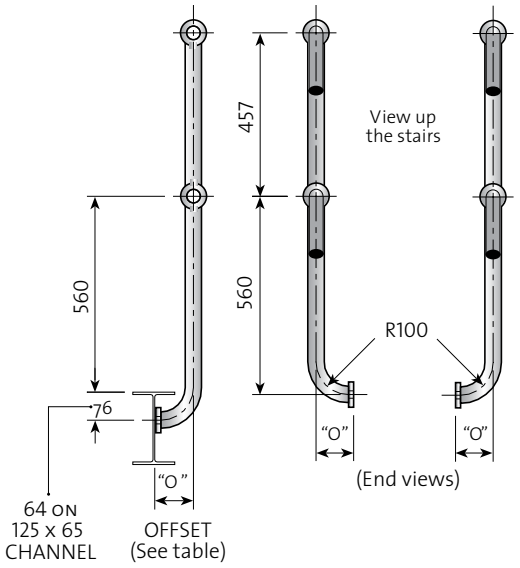
Welded | Collar | Base Plate



ASMC ASM ASMAL ASMAR



ASMC CONVEYOR ASM TYPE



ASMO ASMOAL ASMOAR

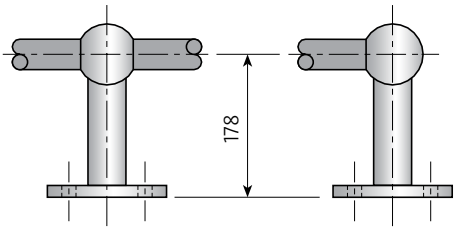
Side Mounted | Side Mounted Offset

Offset "O" (mm)

Channel	"O" offset	Universal Beam	"O" offset
125 x 65	115	200	115
150 x 75	115	250	135
180 x 75	115	310	135
200 x 75	115	360	135
230 x 75	115	410	135
250 x 90	120	460	150
300 x 90	120		
380 x 100	135		

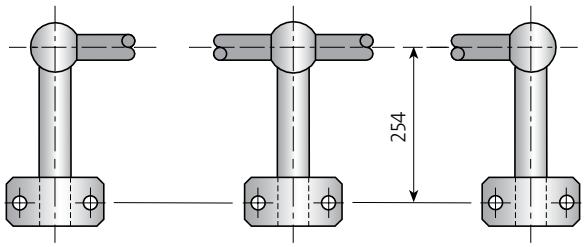
Weldlok® Aluminium Handrail
Single & Multi-Ball Stanchions

Standard Single Ball Stanchions



ASBBP

ASBBP
D.O.S.O.

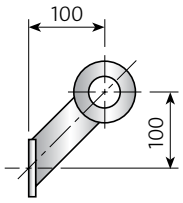


ASBSM
D.R.S.O.

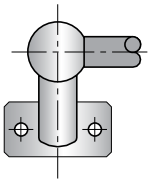
ASBSM

ASBSM
D.L.S.O.

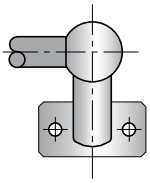
Single Ball Base Plate



ASBH
End view



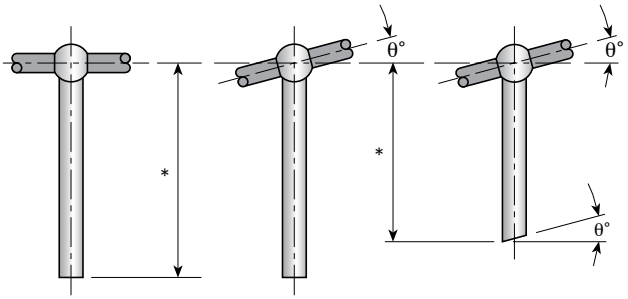
ASBH
D.R.S.O.



ASBH
D.L.S.O.

(Hand as if bolted to wall)

Single Ball Side Mounted



ASBW

ASBWA

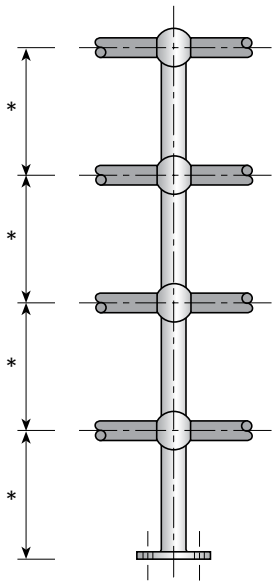
ASBWAA

*Nominate dimensions
Available in all base plate types

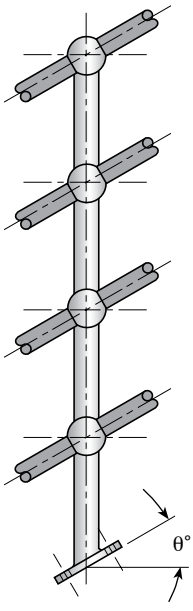
Single Ball Offset Handrail

Single Ball Welded

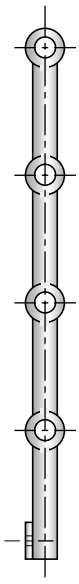
Multi Ball Stanchions



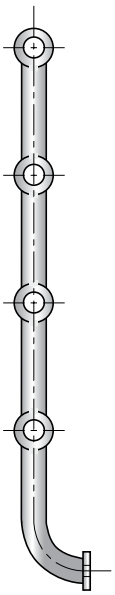
ABP



ABPAM



ASM

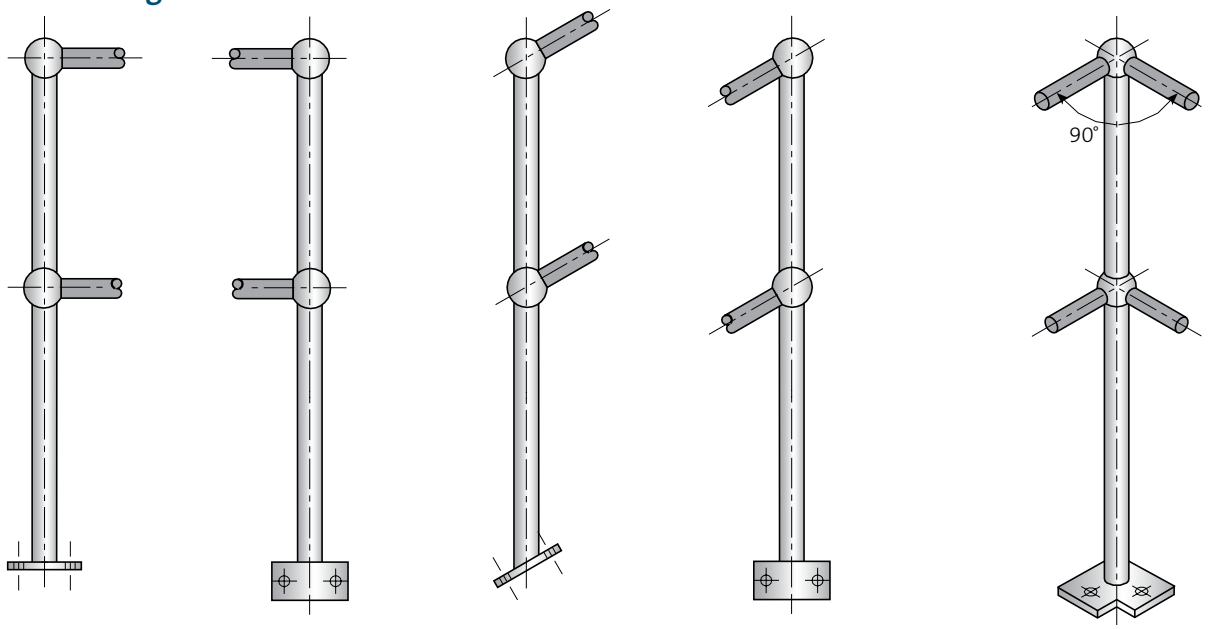


ASMO

*Specify number of balls, pitching & height required of stanchion (150mm minimum centres)
Multi ball stanchions are available in any of the range of configurations

Weldlok® Aluminium Handrail
Special Drilling & Base Plates

Special Drilling for Rails



DRILLED RIGHT HAND SIDE ONLY

DRILLED LEFT HAND SIDE ONLY

DRILLED TOP SIDE ONLY

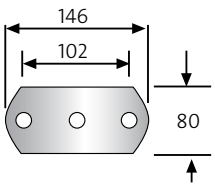
DRILLED BOTTOM SIDE ONLY

CORNER POST

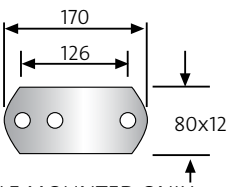
DRILLED ONE SIDE ONLY (D.O.S.O.)

These combinations of drilling are available on full range of standard stanchions

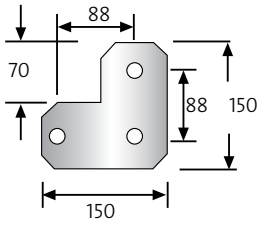
Standard Base Plates



STANDARD BASE PLATE



ANGLE MOUNTED ONLY



CORNER BASE PLATE ONLY

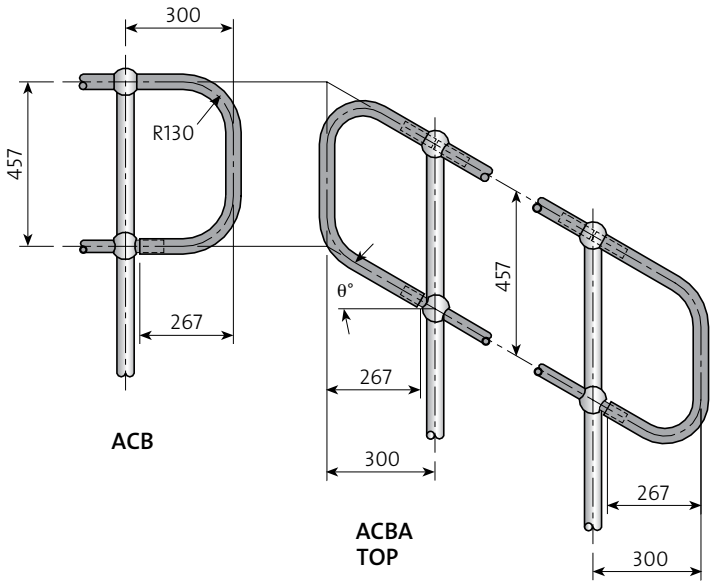
Typical hole size ref note 5

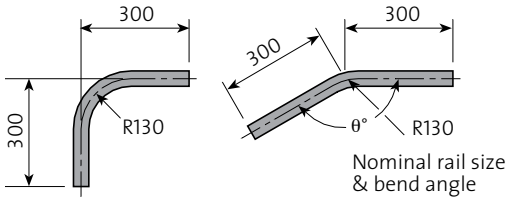
Notes

1. All stanchions can be supplied drilled one side only (DOSO). Please specify side, i.e. DLSO (drilled left side only). All handrail components are viewed from the walkway, platform or stairs.
2. Kick plate mounting brackets are available on all horizontal stanchions on request.
3. All dimensions can be modified to suit individual requirements.
4. Typical hole size in base plates is 19mm for a 16mm bolt (easier to match drill with a masonry bit).

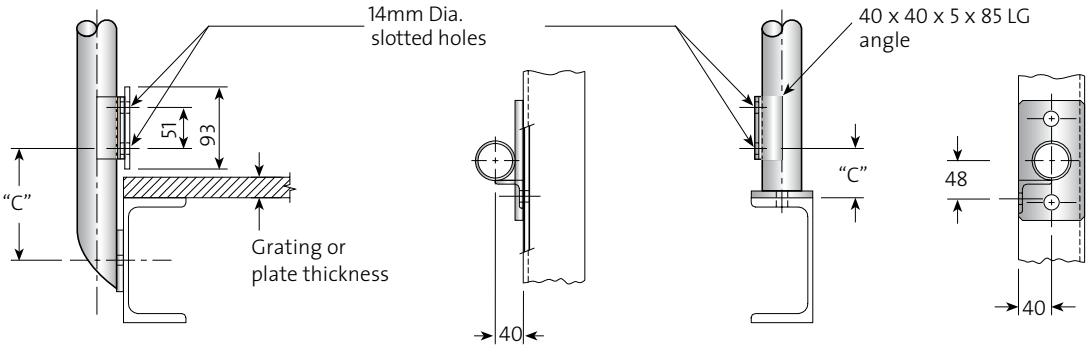
Weldlok® Aluminium Handrail Closures & Kick Plates

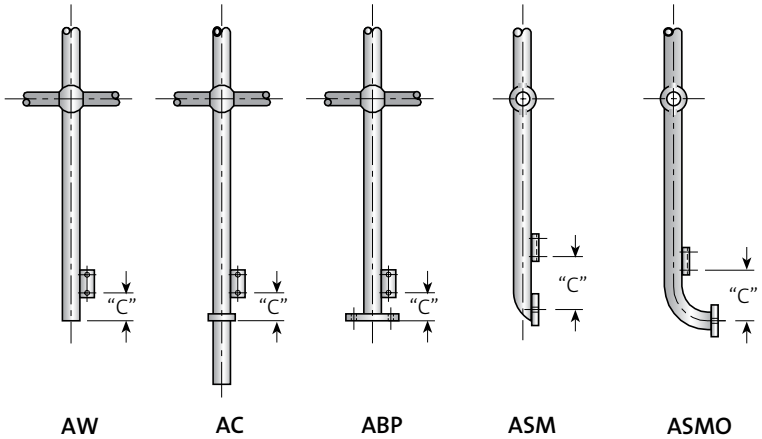
Standard Closures, Joiners and Bends





Kick Plate Mounting Brackets





Note: Kick plate mounting brackets are an optional extra

Dimension "C" (mm)

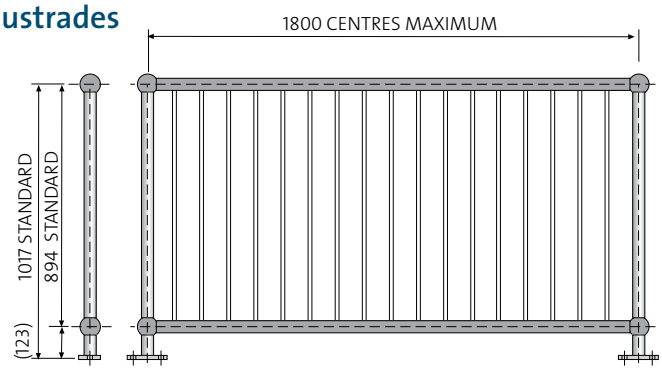
Type	"C" = Grating or Plate Thickness Plus
W	33
C	33
BP	33
SM	109*
SMO	109*

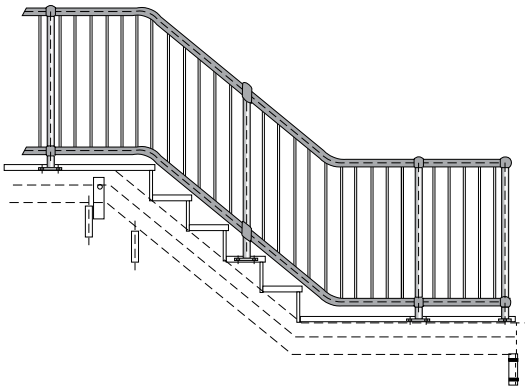
*94 when used on 125 x 65 channel

Example:
If grating is 25mm deep then
"C" Dimension = 58mm
for types W, C, & BP.

Weldlok® Aluminium Handrail Accessories

Balustrades





Raked Panels

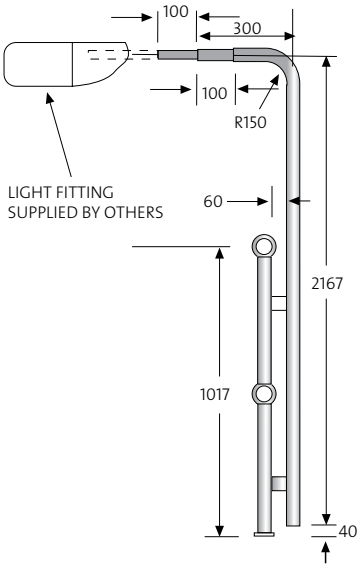
Available with ASM, AW, AC and BP (illustrated). Supplied passivated mill finish as standard. Can be supplied powder-coated or anodized.

Light Poles

Note: Light pole welded to Stanchion at time of manufacture. Stanchion type to be specified at time of ordering.

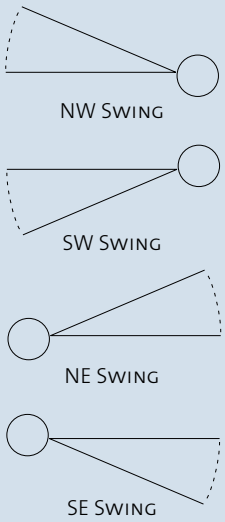
Light Pole material is 46 OD x 3.5mm wall thickness.

Stanchion diameter 50mm, Handrail diameter 46mm.



Important

When ordering self-closing gates, it is essential to nominate the swing direction and type of stanchion.



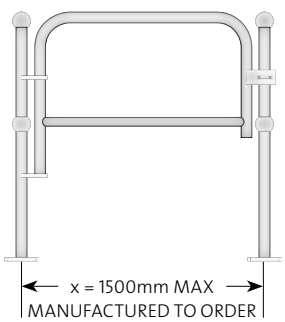
Self-Closing Gates

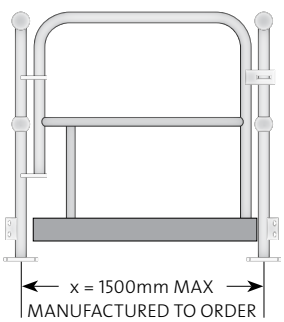
All gates are manufactured with 316 SS spring closures and nylon bearings to guarantee years of fault-free service.

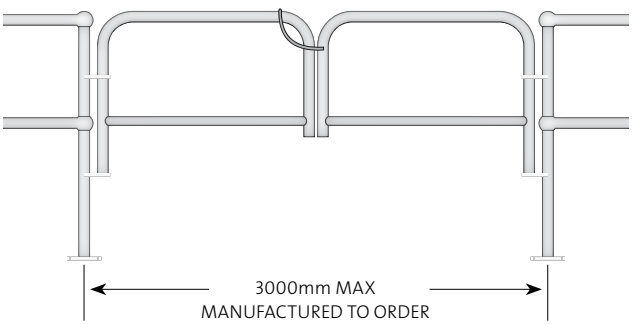
Kick plates are only required on platforms that are 2m or higher.

Notes:

1. All gate stanchions can be ordered to suit individual requirements
2. Comprehension fabrication service available for handrail assembly.
3. Stanchions and Light Poles can be custom made to individual needs.
4. Quotation forms available.







Weldlok® Aluminium Handrail Weights & Ordering

Standard Stanchions

Code	Component	Mass (kg)
ABP	Platform Mount	1.95
AC	Cored Mount	1.87
AW	Welded Mount	1.62
ASM	Side Mount	2.14
ASMC	Side Conveyor Mount	1.93
ASMO	Side Offset Mount	2.18
AMB	Multi-Ball	O/A
ABPAM	Angle Mount	1.91
AWA	Angle Mount Weld	1.95
ASMOAL	Side Offset Angle Left	2.08
ASMOAR	Side Offset Angle Right	2.08
ABPA	Platform Mount Angle	1.95
ACA	Core Mount Angle	1.87
AWAA	Welded Mount Angle	1.62
ASMAL	Side Mount Angle Left	2.08
ASMAR	Side Mount Angle Right	2.08
ABPCNR	Corner Platform Mount	2.22

Single Ball Stanchions Kick Plate Brackets

Code	Component	Mass (kg)
ASBBP	Single Ball Base Plate Mount	0.9
ASBSM	Single Ball Side Mount	1.1
ASBH	Single Ball Wall Mount	0.9
ASBW	Single Ball Weld Mount	2.2
ASBWA	Single Ball Angle Weld Mount	2.2
AKPMB	Kick Plate Mounting Bracket	0.1
ABASEPL	Base Plate	0.4
ACNRBASEPL	Corner Base Plate	0.8

Note: All Stanchions can be supplied Drilled One Side Only (DOSO)

Closures & Bends

Code	Component	Mass (kg)
ACB46OD	Horizontal Closure Bend	1.4
ACBA46OD	Angle Closure Bend	1.5
ASB46OD	Standard Bend, Top Rail	0.8
ASB38OD	Standard Bend, Bottom Rail	0.4

Rails & Kick Plates

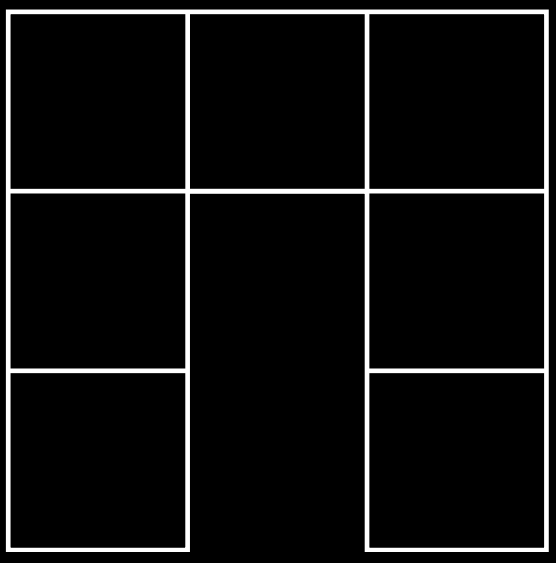
Code	Component	Mass (kg)
AHR46	46mm OD Handrail x 6m	8.0
AKR38	38mm OD Knee-Rail x 6m	3.9
A1006KP6	100 x 6 Kick Plate x 6m	9.7
A1006KP4	100 x 6 Kick Plate x 4m	6.5

Ordering Information

Important When Ordering

1. Nominate type of stanchion (see codes).
2. State top rail and mid-rail sizes required in nominal bore pipe sizes.
3. If kickplate mounting bracket is required, nominate handing and dimension “C” (refer to page 21).
   Note: Right-hand location of kickplate is standard and will be supplied on RH unless otherwise nominated.
4. If stanchions are offset type, state “O” dimension from selection table on page 18.
5. If stanchions are angled type, specify angle of elevation.
6. If stanchions are to be drilled one side only, nominate handing.
7. Any variations to normal stanchions should be noted and drawing supplied.
8. Supply list of all joiners, rails, kickplates, etc.

NEPEAN



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