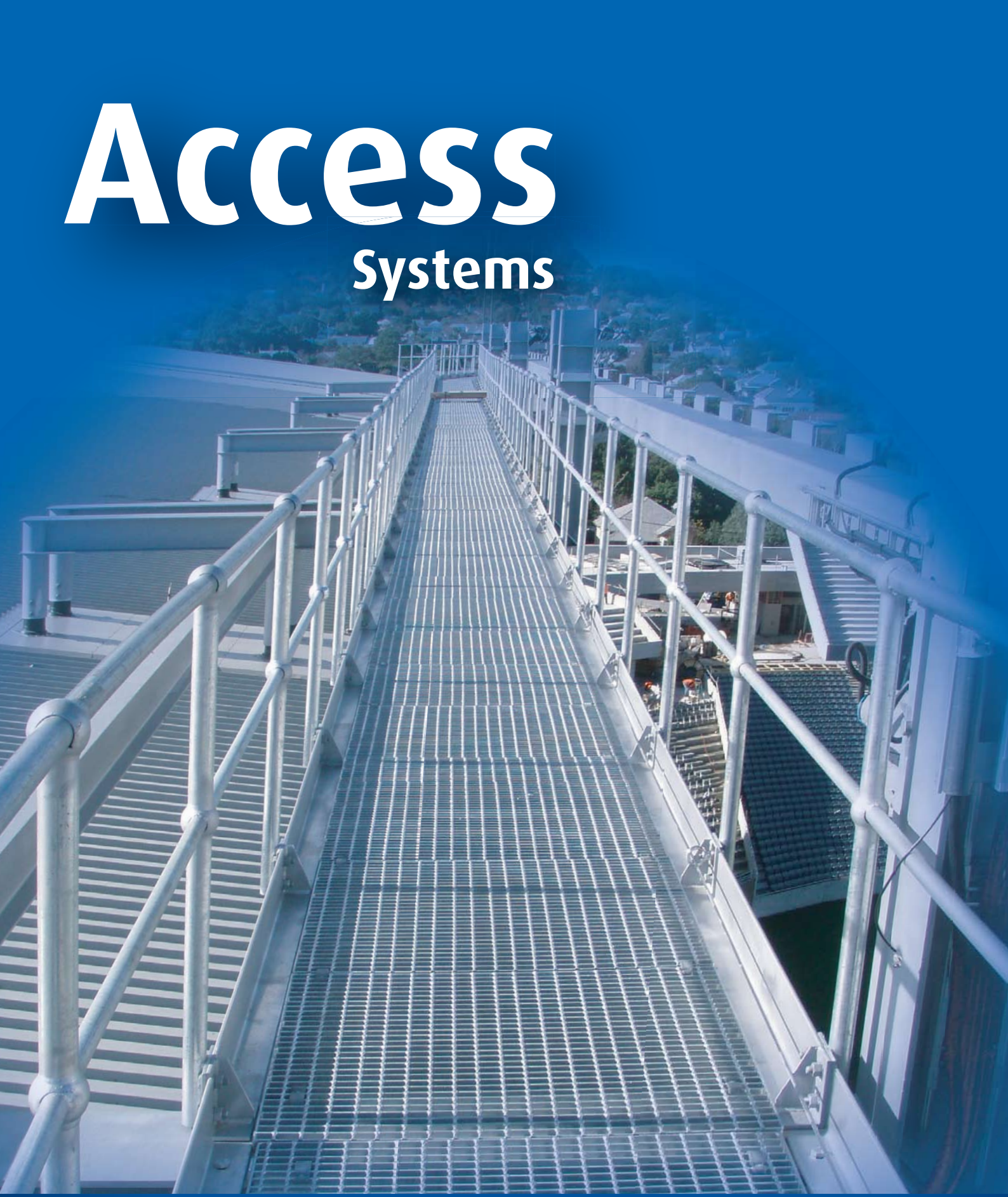
Access
Systems



WEBFORGE

A valmont COMPANY

Quick Flooring Guide

Choosing the right flooring

Load 2.5kPa/Deflection 5mm

Span mm	Steel	Aluminium	FRP
600	C205MP	A253AP	G256
900	C205MP	A253AP	G386
1200	C205MP	A255AP	G386
1500	A255MP	A403AP	
1800	A325MP	A503AP	
2100	A405MP		

Light occasional use. No public access - **AS/NZS1657**

Load 5kPa/Deflection 5mm

Span mm	Steel	Aluminium	FRP
600	C205MP	A253AP	G256
900	C205MP	A253AP	G386
1200	C255MP	A325AP	
1500	A325MP	A503AP	
1800	A405MP	A503AP	
2100	A505MP		

Heavy use. Occasional placement of heavy tools - **AS/NZS1170**

Load 3kPa/Deflection 5mm

Span mm	Steel	Aluminium	FRP
600	C205MP	A253AP	G256
900	C205MP	A253AP	G386
1200	C205MP	A255AP	
1500	A255MP	A405AP	
1800	A325MP	A505AP	
2100	A405MP		

Light occasional use. No public access - **AS/NZS1170**

Load 5kPa/Deflection 10mm

Span mm	Steel	Aluminium	FRP
600	C205MP	A253AP	G256
900	C205MP	A253AP	G386
1200	C205MP	A255AP	G386
1500	A255MP	A403AP	
1800	A325MP	A503AP	
2100	C405MP		

Heavy use - Occasional placement of heavy tools - **AS/NZS1170**

Load 4kPa/Deflection 5mm

Span mm	Steel	Aluminium	FRP
600	C205MP	A253AP	G256
900	C205MP	A255AP	G386
1200	F255MP	A325AP	
1500	F325MP	A405AP	
1800	C405MP	A505AP	
2100	C505MP		

Heavy frequent use. No public access - **AS/NZS1170**

Load 7.5kPa/Deflection 10mm

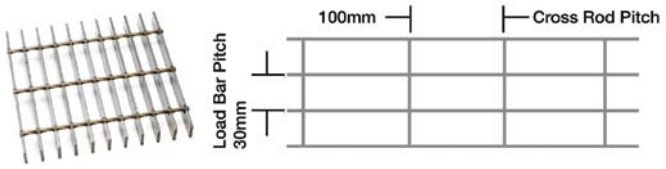
Span mm	Steel	Aluminium	FRP
600	A205MP	A253AP	G256
900	A205MP	A255AP	G386
1200	A205MP	A325AP	
1500	C325MP	A405AP	
1800	A405MP	A505AP	
2100	C505MP		

Heavy use. Frequent placement of heavy tools - **AS/NZS1170**

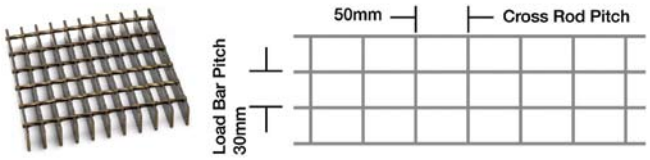
Note kPA: (Kilopascals): Expression of Uniformly Distributed Load.
Other combinations of pattern and load bar are available beyond those listed above. See load tables on page 6/7 for more detail.

Grating Patterns

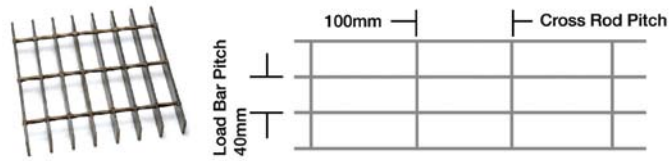
STEEL



PATTERN A.



PATTERN B.



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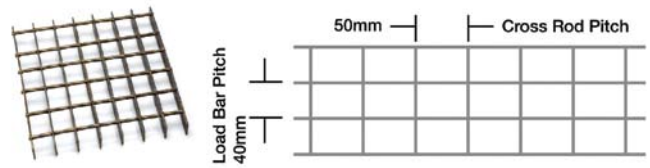
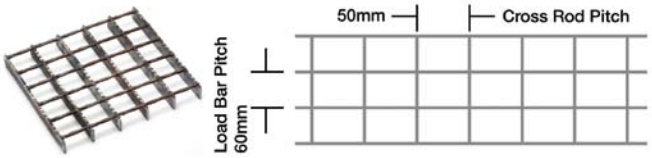
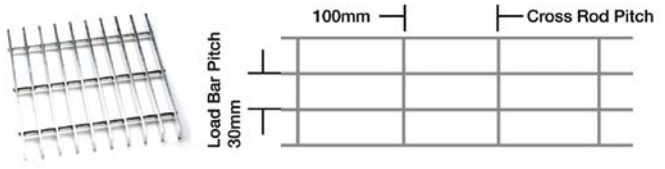


PATTERN D.

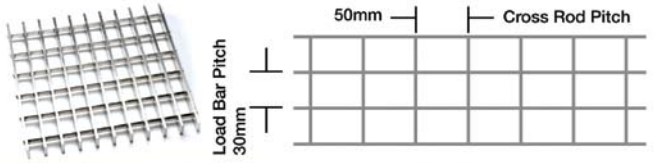


PATTERN F.

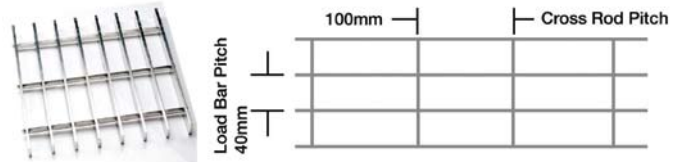
ALUMINIUM



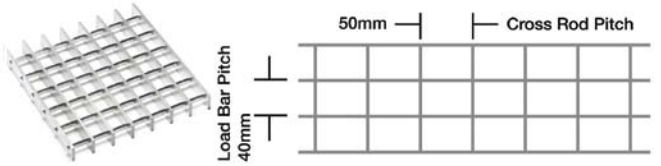
PATTERN A.



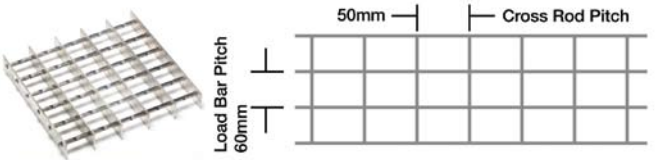
PATTERN B.



PATTERN C.



PATTERN D.



PATTERN F.

** Stainless Steel Patterns are the same as above. Images show Mild Steel.*
Pattern F: Shown in serrated profile.
** For confirmation of stock panel widths and load bar multiples, refer to the Webforge website.*

Grating

Materials:

Mild Steel (M):
Recommended for high impact, high load applications where economy and strength are paramount.
Grating is manufactured from a minimum of Grade 250 Mild Steel (or equivalent).

Aluminium (A):
Recommended where light weight is important and where quality of appearance is paramount. Material 6063-T6

Stainless Steel (S):
Recommended where rust resistance or hygienic environment is required. ASTM A240 GR316.

Top Surface:
Standard grating comprises Plain (P) square edge flat bars. To increase the slip resistance, Serrated (S) grating can be specified. Stainless Steel, 6mm bars, and any load bars 20mm deep will not be serrated.

In addition, both steel and aluminium grating can improve their slip resistance by setting the load bars parallel to the walking direction over the floor. In steel grating better slip resistance is available in patterns with 100mm cross rod centres, ie Patterns A & C.

As mandated by AS/NZS1657, the use of 10 x 10mm square bar cleats must be used for additional security on slopes >10.
ISO14122.1 recommends cleats between 10° and 20°.

Treatment/Colour: (Conditions apply)

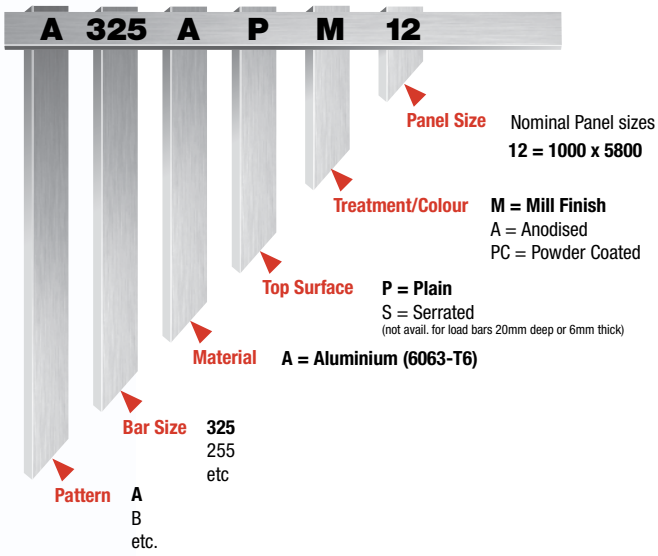
Mild Steel Grating
- Galvanised (G) (AS/NZS 4680)
- Untreated (U)

Stainless Steel Grating
- Mill Finish (M)
- Electropolished (E)
- Passivated (P)

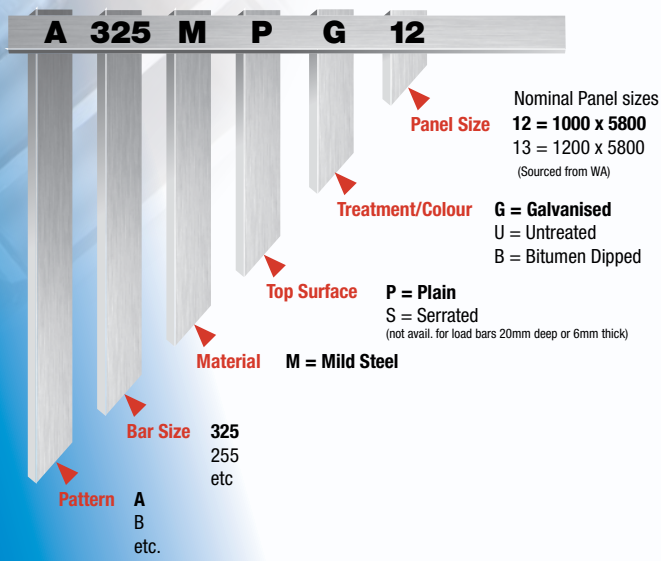
Aluminium Grating
- Anodised (A)
- Powder Coated (PC)
- Painted (P)
- Mill finish (M)

* For FRP Grating info refer to p8.

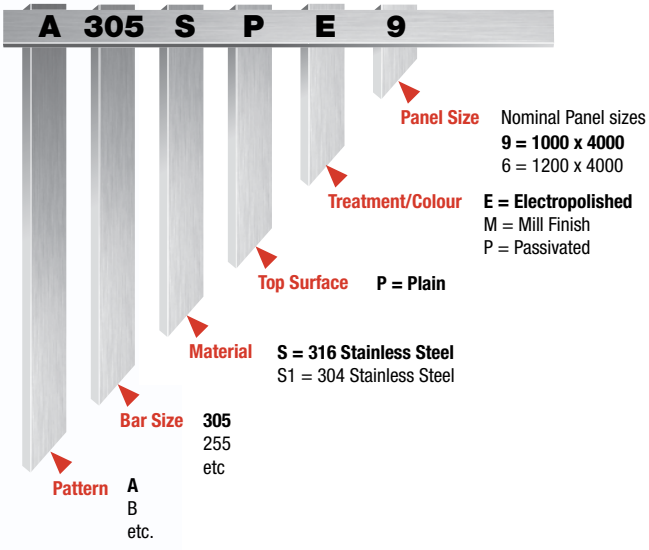
Aluminum Grating Code Example



Steel Grating Code Example



Stainless Steel Grating Code Example



Standard Panel Sizes:

Mild Steel Grating

The standard range of panel sizes are;

Code	Panel Sizes nominal
12	1000 x 5800 span
13	1200 x 5800 span *sourced from WA

Panels can be cut and fabricated to order.

Aluminium Grating

The standard range of Aluminium panel size:

Code	Panel Sizes nominal
12	1000 x 5800 span

6m panels available on request.

Custom panels can be manufactured in load bar multiples up to 1200mm wide.

Stainless Steel Grating

As dictated by the availability of raw material flat bar, usually 4000mm span. Please enquire at branch.

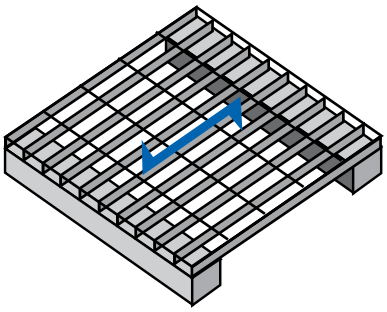
Panel sizes are nominal. Dimensions will vary slightly according to load bar thickness and the pattern.

Span Direction

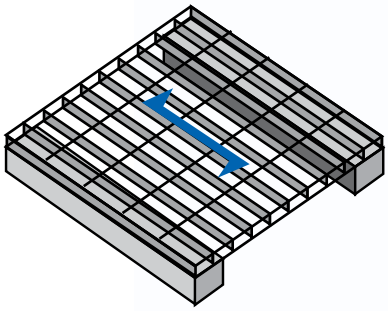
- The direction that the load bars run, is known as the Span, and is important when considering supporting the grating.
- Span is always the last dimension given when referencing a panel size
- Grating has to be supported 90° to the span direction and does not require support on the other sides.

Load Bar Direction

The load bar is the flat bar from which the grating is made and the support of the support of the grating has to be perpendicular to this direction. The direction of the load bar defines the span of the grating.



CORRECT



INCORRECT

Considerations when choosing Stock Panels

- Utilise the Quick Flooring Guide to choose the most appropriate combination of Pattern and Load Bar, for your application.
- Add codes for options; Material, Top Surface, Treatment/Colour
- Select a standard panel size or provide details of custom sizes (see below)

Considerations when choosing Custom Panels

- Utilise the Quick Flooring Guide to choose the most appropriate combination of Pattern and Load Bar, for your application.
- Add codes for options; Material, Top Surface, Treatment/Colour
- Do you need panels to be 'Banded' or 'Cut to Size' only. See website for terminology
- Panel sizes are specified in Width & Span (Span is always the last dimension)
- Webforge will supply panels optimised to the maximum length unless notified otherwise.
- As standard, Webforge wont match cross rods.

*NB. Panel widths should be in load bar multiples.
See p15 for details

Considerations for large projects or floor areas

- Webforge can provide a detailed quotation for large areas, based on detailed drawings of the area, including;
  - Dimensions
  - Span
  - Section size, location of and toe direction of the support steel
  - Location and size of cut outs and removable areas
  - Location of kick plate and nosings
  - Indicate if penetrations are required to be split

Steel Load Table

Product	Load Bar Size mm	Loadbar Spacing mm	Mass kg/m²	4kPa 5mm Defl Span		SPAN mm														
						450	600	750	900	1050	1200	1350	1500	1800	2100	2400	2700	3000	3300	3600
F205MPU	20 x 5	60	19.8	1000	U (kPa)	38.4	21.6	13.8	9.6	7.1	5.4	4.3	3.5	2.4						
					D (mm)	1.7	3.1	4.8	6.9	9.4	12.3	15.5	19.2	27.6						
C205MPU	20 x 5	40	23.3	1120	U (kPa)	56.5	31.8	20.3	14.1	10.4	7.9	6.3	5.1	3.5	2.6					
					D (mm)	1.7	3.1	4.8	6.9	9.4	12.3	15.5	19.2	27.6	37.5					
C253MPU	25 x 3	40	18.3	1170	U (kPa)	53.0	29.8	19.1	13.2	9.7	7.4	5.9	4.8	3.3	2.4					
D253MPU	25 x 3	40	21.3		D (mm)	1.4	2.5	3.8	5.5	7.5	9.8	12.4	15.3	22.1	30.0					
F255MPU	25 x 5	60	23.2	1180	U (kPa)	60.0	33.8	21.6	15.0	11.0	8.4	6.7	5.4	3.8	2.8					
					D (mm)	1.4	2.5	3.8	5.5	7.5	9.8	12.4	15.3	22.1	30.0					
A205MPU	20 x 5	30	29.7	1190	U (kPa)	76.8	43.2	27.7	19.2	14.1	10.8	8.5	6.9	4.8	3.5	2.7				
					D (mm)	1.7	3.1	4.8	6.9	9.4	12.3	15.5	19.2	27.6	37.5	49.0				
C255MSU	25 x 5	40	27.4	1250	U (kPa)	69.7	39.2	25.1	17.4	12.8	9.8	7.7	6.3	4.4	3.2	2.5				
					D (mm)	1.2	2.2	3.4	4.9	6.6	8.7	11.0	13.6	19.5	26.6	34.7				
A253MPU	25 x 3	30	23.1	1250	U (kPa)	72.0	40.5	25.9	18.0	13.2	10.1	8.0	6.5	4.5	3.3	2.5				
B253MPU	25 x 3	30	26.1		D (mm)	1.4	2.5	3.8	5.5	7.5	9.8	12.4	15.3	22.1	30.0	39.2				
C255MPU	25 x 5	40	28.3	1320	U (kPa)	88.3	49.7	31.8	22.1	16.2	12.4	9.8	7.9	5.5	4.1	3.1	2.5			
D255MPU	25 x 5	40	31.3	1320	D (mm)	1.4	2.5	3.8	5.5	7.5	9.8	12.4	15.3	22.1	30.0	39.2	49.6			
A255MSU	25 x 5	30	35.1	1330	U (kPa)	94.8	53.3	34.1	23.7	17.4	13.3	10.5	8.5	5.9	4.4	3.3	2.6			
					D (mm)	1.2	2.2	3.4	4.9	6.6	8.7	11.0	13.6	19.5	26.6	34.7	43.9			
F325MSU	32 x 5	60	27.3	1360	U (kPa)	81.6	45.9	29.4	20.4	15.0	11.5	9.1	7.3	5.1	3.7	2.9	2.3			
					D (mm)	1.0	1.7	2.7	3.9	5.3	6.9	8.8	10.8	15.6	21.2	27.7	35.1			
C323MPU	32 x 3	40	22.5	1400	U (kPa)	86.8	48.8	31.2	21.7	15.9	12.2	9.6	7.8	5.4	4.0	3.1	2.4			
					D (mm)	1.1	1.9	3.0	4.3	5.9	7.7	9.7	12.0	17.2	23.5	30.6	38.8			
A255MPU	25 x 5	30	36.5	1410	U (kPa)	120.0	67.5	43.2	30.0	22.0	16.9	13.3	10.8	7.5	5.5	4.2	3.3			
B255MPU	25 x 5	30	39.5	1410	D (mm)	1.4	2.5	3.8	5.5	7.5	9.8	12.4	15.3	22.1	30.0	39.2	49.6			
F325MPU	32 x 5	60	28.1	1420	U (kPa)	98.3	55.3	35.4	24.6	18.1	13.8	10.9	8.9	6.1	4.5	3.5	2.7	2.2		
					D (mm)	1.1	1.9	3.0	4.3	5.9	7.7	9.7	12.0	17.2	23.5	30.6	38.8	47.9		
A323MPU	32 x 3	30	28.8	1500	U (kPa)	118.0	66.4	42.5	29.5	21.7	16.6	13.1	10.6	7.4	5.4	4.1	3.3	2.7		
					D (mm)	1.1	1.9	3.0	4.3	5.9	7.7	9.7	12.0	17.2	23.5	30.6	38.8	47.9		
C325MSU	32 x 5	40	34.4	1540	U (kPa)	120.0	67.5	43.2	30.0	22.0	16.9	13.3	10.8	7.5	5.5	4.2	3.3	2.7		
					D (mm)	1.0	1.7	2.7	3.9	5.3	6.9	8.8	10.8	15.6	21.2	27.7	35.1	43.3		
C325MPU	32 x 5	40	35.4	1580	U (kPa)	144.6	81.4	52.1	36.2	26.6	20.3	16.1	13.0	9.0	6.6	5.1	4.0	3.3		
D325MPU	32 x 5	40	38.4	1580	D (mm)	1.1	1.9	3.0	4.3	5.9	7.7	9.7	12.0	17.2	23.5	30.6	38.8	47.9		
A325MSU	32 x 5	30	44.5	1620	U (kPa)	163.3	91.8	58.8	40.8	30.0	23.0	18.1	14.7	10.2	7.5	5.7	4.5	3.7		
					D (mm)	1.0	1.7	2.7	3.9	5.3	6.9	8.8	10.8	15.6	21.2	27.7	35.1	43.3		
C403MPU	40 x 3	40	27.4	1650	U (kPa)	135.6	76.3	48.8	33.9	24.9	19.1	15.1	12.2	8.5	6.2	4.8	3.8	3.1		
					D (mm)	0.9	1.5	2.4	3.4	4.7	6.1	7.8	9.6	13.8	18.8	24.5	31.0	38.3		
F405MPU	40 x 5	60	33.6	1670	U (kPa)	153.7	86.4	55.3	38.4	28.2	21.6	17.1	13.8	9.6	7.1	5.4	4.3	3.5		
					D (mm)	0.9	1.5	2.4	3.4	4.7	6.1	7.8	9.6	13.8	18.8	24.5	31.0	38.3		
A325MPU	32 x 5	30	45.8	1680	U (kPa)	196.7	110.6	70.8	49.2	36.1	27.7	21.9	17.7	12.3	9.0	6.9	5.5	4.4		
B325MPU	32 x 5	30	48.9	1680	D (mm)	1.1	1.9	3.0	4.3	5.9	7.7	9.7	12.0	17.2	23.5	30.6	38.8	47.9		
A403MPU	40 x 3	30	35.2	1760	U (kPa)	184.4	103.7	66.4	46.1	33.9	25.9	20.5	16.6	11.5	8.5	6.5	5.1	4.1		
					D (mm)	0.9	1.5	2.4	3.4	4.7	6.1	7.8	9.6	13.8	18.8	24.5	31.0	38.3		
C405MPU	40 x 5	40	43.6	1860	U (kPa)	226.0	127.1	81.4	56.5	41.5	31.8	25.1	20.3	14.1	10.4	7.9	6.3	5.1	4.2	3.5
					D (mm)	0.9	1.5	2.4	3.4	4.7	6.1	7.8	9.6	13.8	18.8	24.5	31.0	38.3	46.3	55.2
A405MPU	40 x 5	30	56.6	1980	U (kPa)	307.3	172.9	110.6	76.8	56.4	43.2	34.1	27.7	19.2	14.1	10.8	8.5	6.9	5.7	4.8
B405MPU	40 x 5	30	59.6	1980	D (mm)	0.9	1.5	2.4	3.4	4.7	6.1	7.8	9.6	13.8	18.8	24.5	31.0	38.3	46.3	55.2
C455MPU	45 x 5	40	48.7	2030	U (kPa)	286.0	160.9	103.0	71.5	52.5	40.2	31.8	25.7	17.9	13.1	10.1	7.9	6.4	5.3	4.5
					D (mm)	0.8	1.4	2.1	3.1	4.2	5.4	6.9	8.5	12.3	16.7	21.8	27.6	34.0	41.2	49.0
A455MPU	45 x 5	30	63.3	2160	U (kPa)	389.0	218.8	140.0	97.2	71.4	54.7	43.2	35.0	24.3	17.9	13.7	10.8	8.8	7.2	6.1
					D (mm)	0.8	1.4	2.1	3.1	4.2	5.4	6.9	8.5	12.3	16.7	21.8	27.6	34.0	41.2	49.0
C505MPU	50 x 5	40	53.7	2190	U (kPa)	353.1	198.6	127.1	88.3	64.9	49.7	39.2	31.8	22.1	16.2	12.4	9.8	7.9	6.6	5.5
					D (mm)	0.7	1.2	1.9	2.8	3.8	4.9	6.2	7.7	11.0	15.0	19.6	24.8	30.6	37.1	44.1
A505MPU	50 x 5	30	70	2330	U (kPa)	480.2	270.1	172.9	120.0	88.2	67.5	53.4	43.2	30.0	22.0	16.9	13.3	10.8	8.9	7.5
					D (mm)	0.7	1.2	1.9	2.8	3.8	4.9	6.2	7.7	11.0	15.0	19.6	24.8	30.6	37.1	44.1
A655MPU	65 x 5	30	90.2	2800	U (kPa)	811.5	456.5	292.2	202.9	149.1	114.1	90.2	73.0	50.7	37.3	28.5	22.5	18.3	15.1	12.7
					D (mm)	0.5	0.9	1.5	2.1	2.9	3.8	4.8	5.9	8.5	11.6	15.1	19.1	23.6	28.5	33.9
A756MPU	75 x 6	30	123.6	3200	U (kPa)	1296.5	729.3	466.8	324.1	238.1	182.3	144.1	116.7	81.0	59.5	45.6	36.0	29.2	24.1	20.3
					D (mm)	0.5	0.8	1.3	1.8	2.5	3.3	4.1	5.1	7.4	10.0	13.1	16.5	20.4	24.7	29.4

Spans in the darker shading (to the left of the heavy line) have a deflection of less than 5mm for a 4kPa uniformly distributed load. Mass shown is untreated and unbanded. Galvanising and banding will increase the mass as follows; A/B Pattern 12% nominal C/D Pattern 14% nominal F Pattern 16% nominal Load deflection tables are arranged in rising strength order. See the 4kPa, 5mm deflection column. U = Superimposed uniformly distributed load in kPa (100kg/m2 = 0.98kPa) D = deflection in mm for the load U Assumptions for load capacity is on single spans Based on allowable stress of 171 mPa for steel. Recommended minimum landing is equal to grating depth (minimum 25mm).

Aluminium Load Table

Product	Load Bar Size mm	Loadbar Spacing mm	Mass kg/m²	4kPa 5mm Defl Span		SPAN mm												
						450	600	750	900	1050	1200	1350	1500	1800	2100	2400	2700	3000
F253APM	25 x 3	60	7	750	U (kPa)	24.1	13.6	8.7	6.0	4.4	3.4	2.7	2.2	1.5	1.1	0.8	0.7	0.5
					D (mm)	2.8	5.0	7.8	11.2	15.2	19.9	25.2	31.1	44.8	61.0	79.7	100.8	124.5
C253APM	25 x 3	40	7	890	U (kPa)	35.5	20.0	12.8	8.9	6.5	5.0	3.9	3.2	2.2	1.6	1.2	1.0	0.8
					D (mm)	2.8	5.0	7.8	11.2	15.2	19.9	25.2	31.1	44.8	61.0	79.7	100.8	124.5
A253ASM	25 x 3	30	8.4	900	U (kPa)	38.1	21.5	13.7	9.5	7.0	5.4	4.2	3.4	2.4	1.8	1.3	1.1	0.9
					D (mm)	2.5	4.4	6.9	9.9	13.5	17.6	22.3	27.5	39.6	54.0	70.5	89.2	110.1
A253APM	25 x 3	30	8.7	950	U (kPa)	48.3	27.2	17.4	12.1	8.9	6.8	5.4	4.3	3.0	2.2	1.7	1.3	1.1
					D (mm)	2.8	5.0	7.8	11.2	15.2	19.9	25.2	31.1	44.8	61.0	79.7	100.8	124.5
C255APM	25 x 5	40	10.5	1010	U (kPa)	59.2	33.3	21.3	14.8	10.9	8.3	6.6	5.3	3.7	2.7	2.1	1.6	1.3
					D (mm)	2.8	5.0	7.8	11.2	15.2	19.9	25.2	31.1	44.8	61.0	79.7	100.8	124.5
A255ASM	25 x 5	30	12.8	1020	U (kPa)	63.6	35.8	22.9	15.9	11.7	8.9	7.1	5.7	4.0	2.9	2.2	1.8	1.4
					D (mm)	2.5	4.4	6.9	9.9	13.5	17.6	22.3	27.5	39.6	54.0	70.5	89.2	110.1
C323APM	32 x 3	40	8.4	1070	U (kPa)	58.2	32.7	20.9	14.5	10.7	8.2	6.5	5.2	3.6	2.7	2.0	1.6	1.3
					D (mm)	2.2	3.9	6.1	8.8	11.9	15.6	19.7	24.3	35.0	47.6	62.2	78.8	97.2
A255APM	25 x 5	30	13.3	1080	U (kPa)	80.5	45.3	29.0	20.1	14.8	11.3	8.9	7.2	5.0	3.7	2.8	2.2	1.8
					D (mm)	2.8	5.0	7.8	11.2	15.2	19.9	25.2	31.1	44.8	61.0	79.7	100.8	124.5
F403APM	40 x 3	60	9.2	1130	U (kPa)	61.8	34.8	22.2	15.4	11.3	8.7	6.9	5.6	3.9	2.8	2.2	1.7	1.4
					D (mm)	1.8	3.1	4.9	7.0	9.5	12.4	15.8	19.4	28.0	38.1	49.8	63.0	77.8
A323APM	32 x 3	30	10.6	1140	U (kPa)	79.1	44.5	28.5	19.8	14.5	11.1	8.8	7.1	4.9	3.6	2.8	2.2	1.8
					D (mm)	2.2	3.9	6.1	8.8	11.9	15.6	19.7	24.3	35.0	47.6	62.2	78.8	97.2
C325APM	32 x 5	40	12.9	1210	U (kPa)	96.9	54.5	34.9	24.2	17.8	13.6	10.8	8.7	6.1	4.5	3.4	2.7	2.2
					D (mm)	2.2	3.9	6.1	8.8	11.9	15.6	19.7	24.3	35.0	47.6	62.2	78.8	97.2
A325ASM	32 x 5	30	16	1240	U (kPa)	109.4	61.5	39.4	27.4	20.1	15.4	12.2	9.8	6.8	5.0	3.8	3.0	2.5
					D (mm)	2.0	3.5	5.5	7.9	10.8	14.1	17.8	22.0	31.7	43.1	56.3	71.3	88.0
C403APM	40 x 3	40	10.1	1260	U (kPa)	90.9	51.1	32.7	22.7	16.7	12.8	10.1	8.2	5.7	4.2	3.2	2.5	2.0
					D (mm)	1.8	3.1	4.9	7.0	9.5	12.4	15.8	19.4	28.0	38.1	49.8	63.0	77.8
A325APM	32 x 5	30	16.5	1300	U (kPa)	131.8	74.1	47.5	33.0	24.2	18.5	14.6	11.9	8.2	6.1	4.6	3.7	3.0
					D (mm)	2.2	3.9	6.1	8.8	11.9	15.6	19.7	24.3	35.0	47.6	62.2	78.8	97.2
A403APM	40 x 3	30	12.8	1350	U (kPa)	123.6	69.5	44.5	30.9	22.7	17.4	13.7	11.1	7.7	5.7	4.3	3.4	2.8
					D (mm)	1.8	3.1	4.9	7.0	9.5	12.4	15.8	19.4	28.0	38.1	49.8	63.0	77.8
C405APM	40 x 5	40	15.7	1430	U (kPa)	151.4	85.2	54.5	37.9	27.8	21.3	16.8	13.6	9.5	7.0	5.3	4.2	3.4
					D (mm)	1.8	3.1	4.9	7.0	9.5	12.4	15.8	19.4	28.0	38.1	49.8	63.0	77.8
A405ASM	40 x 5	30	19.8	1480	U (kPa)	179.2	100.8	64.5	44.8	32.9	25.2	19.9	16.1	11.2	8.2	6.3	5.0	4.0
					D (mm)	1.6	2.9	4.5	6.5	8.9	11.6	14.7	18.1	26.1	35.5	46.3	58.7	72.4
C503APM	50 x 3	40	12.2	1490	U (kPa)	142.0	79.9	51.1	35.5	26.1	20.0	15.8	12.8	8.9	6.5	5.0	3.9	3.2
					D (mm)	1.4	2.5	3.9	5.6	7.6	10.0	12.6	15.6	22.4	30.5	39.8	50.4	62.2
A405APM	40 x 5	30	20.2	1530	U (kPa)	206.0	115.9	74.1	51.5	37.8	29.0	22.9	18.5	12.9	9.5	7.2	5.7	4.6
					D (mm)	1.8	3.1	4.9	7.0	9.5	12.4	15.8	19.4	28.0	38.1	49.8	63.0	77.8
C455APM	45 x 5	40	17.5	1560	U (kPa)	191.7	107.8	69.0	47.9	35.2	27.0	21.3	17.3	12.0	8.8	6.7	5.3	4.3
					D (mm)	1.6	2.8	4.3	6.2	8.5	11.1	14.0	17.3	24.9	33.9	44.3	56.0	69.1
A503APM	50 x 3	30	15.6	1600	U (kPa)	193.1	108.6	69.5	48.3	35.5	27.2	21.5	17.4	12.1	8.9	6.8	5.4	4.3
					D (mm)	1.4	2.5	3.9	5.6	7.6	10.0	12.6	15.6	22.4	30.5	39.8	50.4	62.2
A455APM	45 x 5	30	22.6	1670	U (kPa)	260.7	146.6	93.8	65.2	47.9	36.7	29.0	23.5	16.3	12.0	9.2	7.2	5.9
					D (mm)	1.6	2.8	4.3	6.2	8.5	11.1	14.0	17.3	24.9	33.9	44.3	56.0	69.1
C505APM	50 x 5	40	19.2	1690	U (kPa)	236.6	133.1	85.2	59.2	43.5	33.3	26.3	21.3	14.8	10.9	8.3	6.6	5.3
					D (mm)	1.4	2.5	3.9	5.6	7.6	10.0	12.6	15.6	22.4	30.5	39.8	50.4	62.2
A505APM	50 x 5	30	24.9	1810	U (kPa)	321.8	181.0	115.9	80.5	59.1	45.3	35.8	29.0	20.1	14.8	11.3	8.9	7.2
					D (mm)	1.4	2.5	3.9	5.6	7.6	10.0	12.6	15.6	22.4	30.5	39.8	50.4	62.2
C655APM	65 x 5	40	24.5	2050	U (kPa)	399.9	224.9	144.0	100.0	73.5	56.2	44.4	36.0	25.0	18.4	14.1	11.1	9.0
					D (mm)	1.1	1.9	3.0	4.3	5.9	7.7	9.7	12.0	17.2	23.5	30.6	38.8	47.9

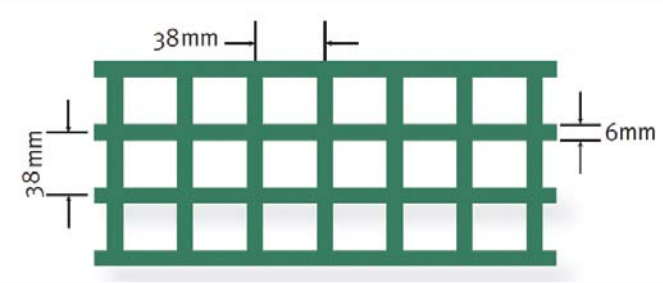
Spans in the darker shading (to the left of the heavy line) have a deflection of less than 5mm for a 4kPa uniformly distributed load. Mass shown is untreated and unbanded. Banding will increase the mass as follows; A/B Pattern 10% nominal C/D Pattern 12% nominal F Pattern 14% nominal Load deflection tables are arranged in rising strength order. See the 4kPa, 5mm deflection column. U = Superimposed uniformly distributed load in kPa (100kg/m2 = 0.98kPa) D = deflection in mm for the load U Assumptions for load capacity is on single spans. Recommended minimum landing is equal to grating depth (minimum 25mm).

• Stainless Steel Load Table available from the website.

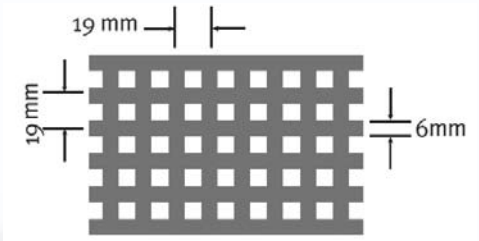
FRP Grating

Patterns:

Standard Mesh



Mini Mesh



*NB. Mini Mesh is only available in 38mm deep bars

* Aperture is 12x 12mm

Features / Benefits

- Integral, one piece construction increases load-bearing capabilities
- Load applied to Webforge FRP bar is transferred to adjoining bearing bars, assisting in load distribution on the grating as well as on the support structure.
- Smooth resin-rich vertical surfaces and tapered bars allow all debris to fall through
- Continuous glass fibre strand in alternating layers thoroughly wetted with the appropriate resin for excellent corrosion resistance.

Material:

- Isopthalic Polyester Resin (I) ASTM E-84 Fire Rating Class A, 25 or less
- Vinyl Ester Rein (V) ASTM E-84 Fire Rating Class A, 25 or less

Top Surface:

FRP grating is provided with an antiskid Grit (G) surface as standard. This is a coarse grit that is embedded into the top surface of the grating. A plain top surface is available on request.

Treatment/Colour:

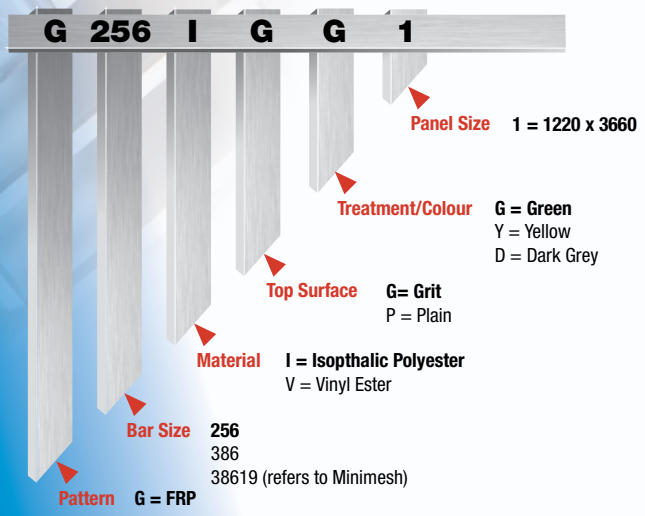
- Green (G) – Isopthalic Polyester Resin or
- Yellow (Y) – Vinyl Ester Resin
- Dark Grey (D) – Mini Mesh only
- Others colours available on request

Panel Size:

The standard range of panel size is shown below:

Code	Panel Size
1	1220 x 3660

FRP Grating



FRP Load Table

Product	Load Bar Size mm	Loadbar Spacing mm	Mass kg/m²	4kPa 5mm Defl Span	U (kPa) D (mm)	SPAN mm 450	600	750	900	1200
G256	6 x 25	38	12.1	785	U	15	10	4	2.5	2.5
					D	1.6	4.1	4.1	5.1	15.3
G386	6 x 38	38	18.6	990	U	15	15	10	5	2.5
					D	1.0	2.4	3.7	3.8	5.9
G38619	6 x 38	19	23.1	1035	U	15	15	10	7.5	2.5
					D	1.0	2.4	3.6	4.7	4.8

U = Uniformly Distributed Load in kPa
D = Deflection in mm

Webforge FRP Grating - Chemical Resistance Table

CHEMICAL ENVIRONMENT	% Concentration	°C TEMP	Vinyl Ester	Isophthalic
Acetic Acid	25	MAX	C	C
Acetic Acid	50	MAX	C	C
Aluminum Hydroxide	ALL	MAX	C	C
Ammonium Chloride	ALL	48.8	C	C
Ammonium Bicarbonate	15	48.8	C	C
Ammonium Bicarbonate	50	48.8	C	C
Almmonium Hydroxide	20	26.6	S	N
Ammonium Sulfate	ALL	488	C	C
Benzene	100	65.5	I	I
Benzoic Acid (SAT)	SAT	MAX	C	C
Borax (SAT)	SAT	MAX	C	C
Calcium Carbonate	ALL	MAX	C	C
Calcium Nitrate	ALL	MAX	C	C
Carbon Tetrachloride	100	26.6	I	N
Chlorine, Dry Gas *	ALL	MAX	C	C
Chlorine Water (SAT)	SAT	48.8	C	I
Chromic Acid	50	65.5	I	N
Citric Acid	ALL	MAX	C	C
Copper Chloride	ALL	MAX	C	C
Copper Cyanide	ALL	60	C	S
Copper Nitrate	ALL	MAX	C	C
Ethanol	10	488	C	S
Ethanol	50	488	C	I
Ethylene Glycol	ALL	65.5	C	C
Ferric Chloride	100	MAX	C	C
Ferrous Chloride	ALL	MAX	C	C
Formaldehyde 0-50%	50	48.8	S	I
Gasoline	ALL	48.8	C	C
Glucose	ALL	48.8	C	C
Glycerin	100	MAX	C	C
Hydrobromic Acid	50	MAX	S	S
Hydrochloric Acid	10	MAX	C	S
Hydrochloric Acid	37	MAX	I	S
Hydrogen Peroxide	30	26.6	C	N

CHEMICAL ENVIRONMENT	% Concentration	°C TEMP	Vinyl Ester	Isophthalic
Lactic Acid	100	MAX	C	C
Lithium Chloride (SAT)	SAT	MAX	N	N
Magnesium Chloride	ALL	MAX	C	C
Magnesium Nitrate	ALL	MAX	C	C
Magnesium Sulfate	ALL	MAX	C	C
Mercuric Chloride	ALL	MAX	C	C
Mercurous Chloride	ALL	MAX	C	C
Nickel Chloride	ALL	MAX	C	C
Nickel Sulfate	ALL	MAX	C	C
Nitric Acid	20	48.8	S	S
Oxalic Acid	ALL	65.5	C	C
Perchloric Acid	30	32.2	S	I
Phosphoric Acid	80	MAX	C	C
Potassium Chloride	ALL	MAX	C	C
Potassium Dichromate	ALL	MAX	C	C
Potassium Nitrate	ALL	MAX	C	C
Potassium Sulfate	ALL	MAX	C	C
Propylene Glycol	ALL	MAX	C	C
Sodium Acetate	ALL	MAX	C	C
Sodium Bisulfate	ALL	26.6	S	S
Sodium Bromide	ALL	26.6	C	C
Sodium Cyanide	ALL	26.6	C	I
Sodium Hydroxide	10	MAX	C	I
Sodium Hydroxide	50	MAX	S	N
Sodium Nitrate	ALL	MAX	C	C
Sodium Sulfate	ALL	MAX	C	C
Sulfuric Acid	10	MAX	C	S
Sulfuric Acid	25	MAX	C	S
Sulfuric Acid	75	37.7	C	I
Tartaric Acid	ALL	MAX	C	C
Vinegar	ALL	MAX	C	C
Water, Distilled	ALL	MAX	C	C
Zinc Nitrite	100	MAX	C	C
Zinc Sulfate	100	MAX	C	C

C = Continuous exposure of the grating to the Chemical Environment listed at the temperature listed

S = Frequent exposure of the grating to splashes and spills the Chemical Environment listed with that environment at the temperature listed

I = Infrequent Exposure of the grating to splashes and spills from the Chemical Environment listed with that environment at the temperature listed and the spill immediately cleaned up or washed from the grating .

N = Not recommended for the concentrations and temperatures listed

T =Test

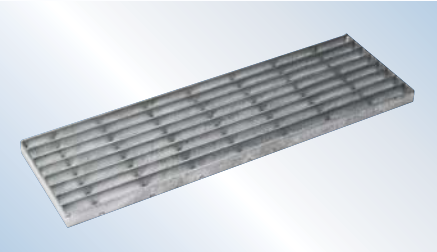
MAX = indicates temperature of 85ºC for molded Vinyl Ester . 71ºC for moulded Isopthalic grating.

ALL = All concentrations

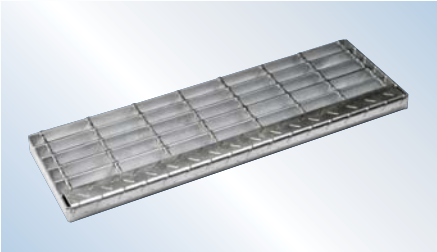
SAT = Saturated solution

Stair Treads

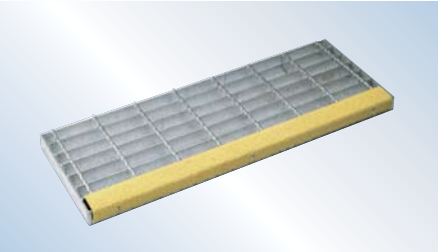
Steel



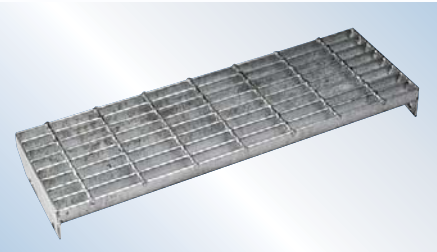
T1 – Welded Fixing, No Nosing



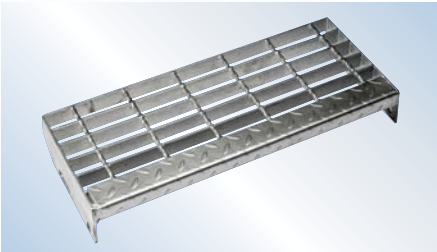
T3 – Welded Fixing, Floor plate Nosing



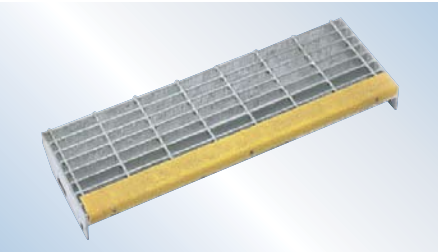
T5 – Welded Fixing, Abrasive Nosing



T2 – Bolted Fixing, No Nosing

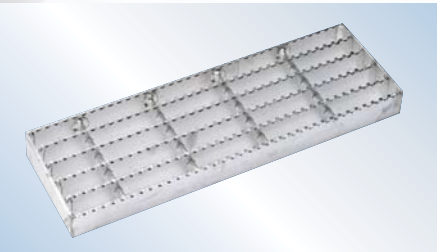


T4 – Bolted Fixing, Floor plate Nosing

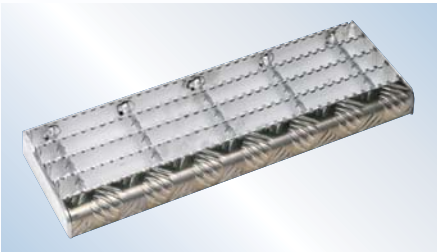


T6 – Bolted Fixing, Abrasive Nosing

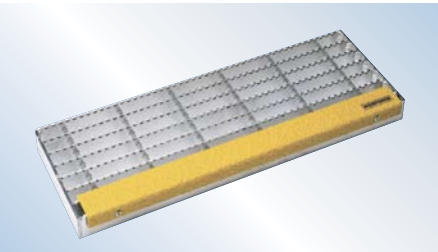
Aluminium



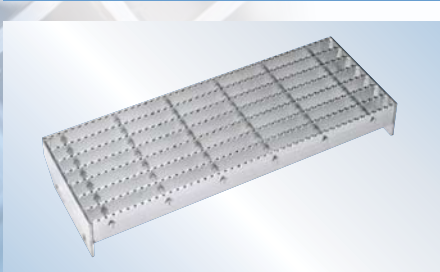
T1 – Welded Fixing, No Nosing



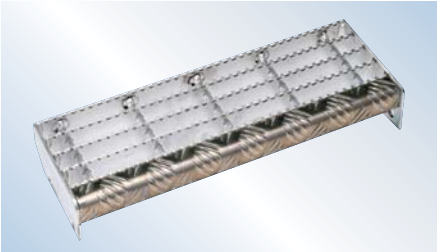
T3 – Welded Fixing, Floor plate Nosing



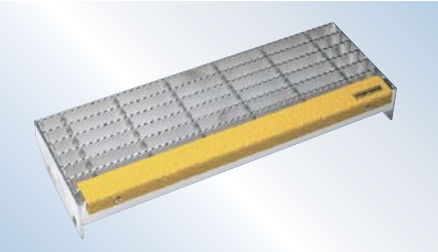
T5 – Welded Fixing, Abrasive Nosing



T2 – Bolted Fixing, No Nosing



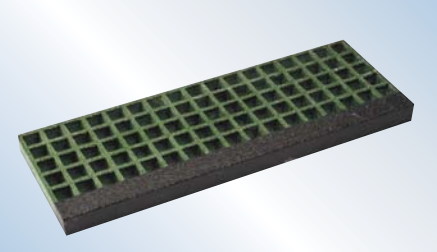
T4 – Bolted Fixing, Floor plate Nosing



T6 – Bolted Fixing, Abrasive Nosing

AS1657 requires that the nosing of the tread is clearly visible against the background.

FRP



Bolted Fixing, Abrasive Nosing

Also available in Mini Mesh.

Stair Treads

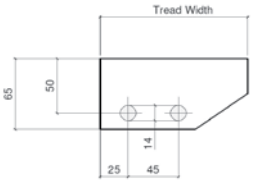
The tables below indicate the maximum width and length for stair treads, depending on the combination of material, pattern and load bar selected. Standard stair treads are available ex-stock from Webforge locations; these standard profiles are complimented by a custom manufacturing service.

Recommended Maximum Lengths for Grating Patterns								
	Steel			Aluminium			FRP	
Load Bar Size	25 x 5	32 x 5	40 x 5	25 x 5	32 x 5	40 x 5	25 x 6	38 x 6
A & B Pattern	900	1300	1600	550	900	1275	-	-
C & D Pattern	750	1200	1500	-	675	1050	-	-
F Pattern	550	850	1350	-	450	700	-	-
G Pattern	-	-	-	-	-	-	600	875

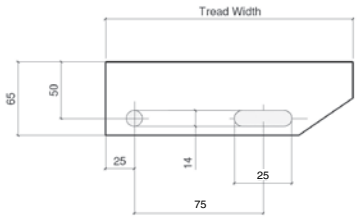
Recommended Maximum Tread Widths for Grating Patterns							
A & B Pattern	125	155	185	215	245	275	305
C & D Pattern	125	165	-	205	245	285	325
F Pattern	125	-	185	-	245	-	305
G Pattern	-	-	-	-	234	272	310

End Plates

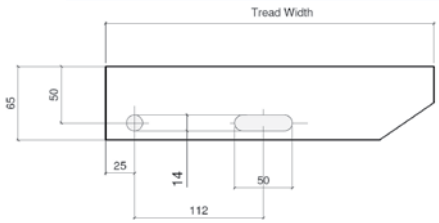
The standard tread end plates for the different width stair treads are shown below. Tread end plates are manufactured from 65 x 5 flat bar. For load bars > 40mm depth, special end plates are required.



125mm Tread Widths

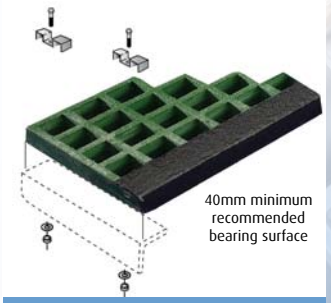


155, 165, 185mm Tread Widths



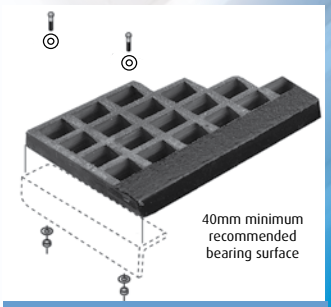
205, 215, 245, 275, 285, 305 & 325mm Tread Widths

Note: All end plates sniped at 34° unless requested otherwise



Standard FRP Treads

Attach with:
Top Saddle: C129SM
Screw: C301SM
4 clips per tread (angle not supplied)



Minimesh Treads

Predrill angle with 7.4 Hole
Attach with: Disc C140SM
Top Saddle: C129SM
Thread Rolling Screw: C309SM
4 clips per tread (angle not supplied)

Drilling Stringers:

Please find below a table of recommended stair stringer hole centres.

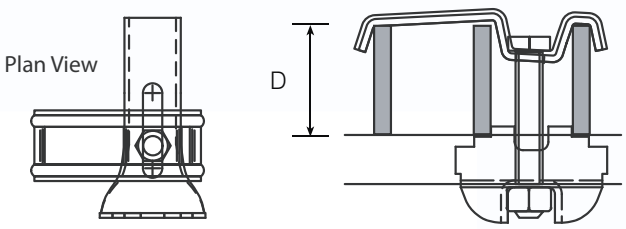
Table of recommended stair stringers drilling for M12 bolts		
Tread width mm	**Recommended stringer hole centres mm**	**Hole size mm**
125	45	14 dia
155, 165, 185	75	14 dia
205, 215	100	14 dia
245, 275, 285, 305, 325	125	14 dia

Fixing Clips

	CLIP SET CODE	PATTERN	DESCRIPTION	COMPRISES	USAGE
Mild Steel	C001MG	A - F	Clip Set Mild steel Galvanised Top, Bottom & Bolt	Top clip C100MG Bottom C200MG M8 x 65mm Bolt C304MG	Mild Steel Grating Depth = <50mm Flange present
Aluminium	C001SM	A - F	Clip Set Stainless Steel Top, Bottom & Bolt	Top Clip C100SM Bottom C200SM M8 Bolt C301SM	Stainless Steel & Aluminium Grating Depth = <50mm Flange Present
FRP	C030SM	G	Clip Set Stainless Steel Top & Bolt	Top Clip C129SM M8 Bolt C301SM	FRP Grating Depth = 25mm & 38mm
	C033SM	Mini Mesh	Clip Set Mini Mesh Stainess Steel Top & Bolt	Top Disc C140SM M8 x 65mm Bolt C309SM	FRP Grating Depth = 38mm

Fixing Clips

CLIP ASSEMBLIES

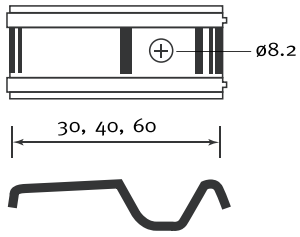


The Webforge Clip (product code C001MG) is a galvanised clip that consists of a pre-assembled 'clip top', M8Bolt and nut and a bottom bracket that captivates the nut, allowing fixing from the top of the grating. It enables rapid and secure connection of grating to steel support sections.

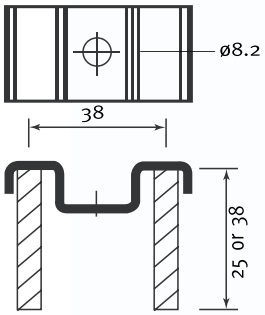
Product	Screw	To suit flange	To suit Webforge	Grating Bar
Code	Size	thickness (mm)	Grating type	depth* D (mm)
C001MG	M8x65	5-16	A,B,C,D,E,F	Min 20 Max 50

* longer screws available for greater bar depth. Max Bar Depth = 65mm

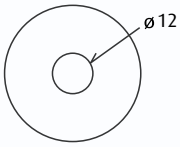
TOPS



C100MU C100MG
C100MB C100SM



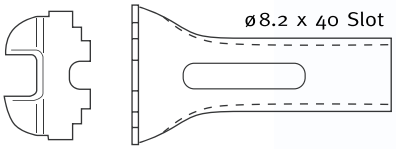
C129SM



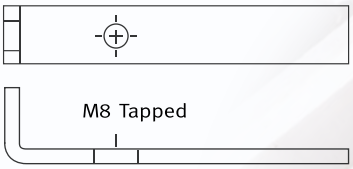
C140SM
Discwasher

BOTTOMS

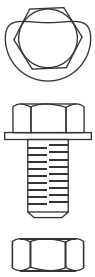
C200MG
C200SM



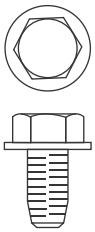
C210MG
C210SM



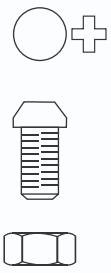
SCREWS/RIVETS



C304MG (65 x 8)
C301SM (65 x 8)



C302MG (50 x 8)
(Pilot Hole 7.4mm)
Thread Rolling



C310SM (20 x 6)
C311SM (30 x 6)
C312SM (50 x 6)
C313SM (35 x 4)

C400MG (Grip Range 9-16mm)
C401MG (Grip Range 6-20mm)

C309SM (65 x 8)
C308MG (50 x 8)
(Pilot Hole 7.4mm)
Thread Rolling.
Web Plate

WELDING

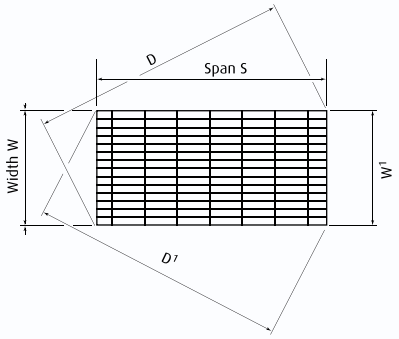
Webforge believe that welding to the support structure is a suitable process. Minimum number of welds is four per panel.
Grating: Weld 5mm fillet 25mm long at 1000mm centres.

CLIP FREQUENCY

Nominal 4 panel, or 4 per m^2, whichever is greater.
(Approximately 3 per M^2 where span is >1500mm.
Fixing clips are generally not recommended in areas of vibration or where lateral or cantilever loads are applied to the grating.

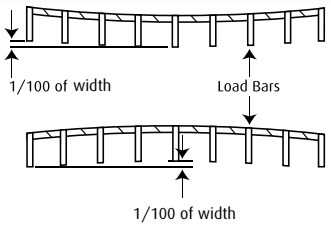
Manufacturing Tolerances

Mild Stainless Steel



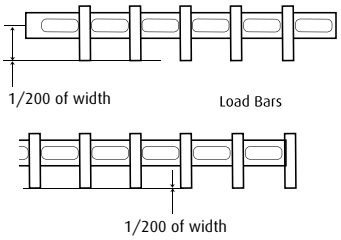
Panel Size mm	S mm	W1 mm	D1 mm
S ⩽ 3000	± 3	W ± 3	D ± 5.5
S ⩾ 3000 S ⩽ 6000	± S/1000	W ± 3	D ± S/500

Transverse Bow

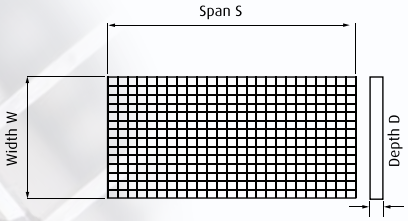


Aluminium

Panel Size mm	S mm	W1 mm	D1 mm
S ⩽ 3000	± 3	W ± 3	D ± 3.5
S ⩾ 3000 S ⩽ 6000	± S/1000	W ± 3	D ± S/500



FRP



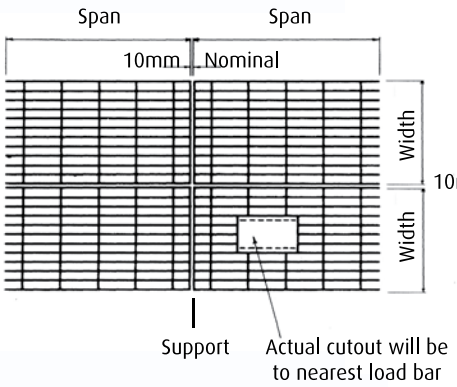
S mm	W1 mm	D mm
2.5/1000	2.5/1000	±1.5

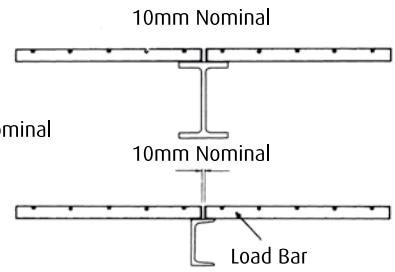
Installation Note:

Minimum support dimension:-
A minimum of 25mm for loadbars up to 50mm deep and a minimum of 50mm for loadbars > 50mm deep. Webforge recommends that the land on the support should be equal to the height of the load bar.

Grating Cantilevers:-
Grating cantilevers up to 250m in the loadbar direction are acceptable as long as the grating is securely anchored to the supports (not clips.) Cantilevers in the crossrod direction are not acceptable.

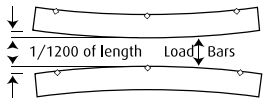
See website for terminoligy explanation.

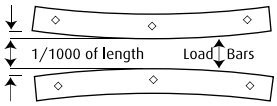




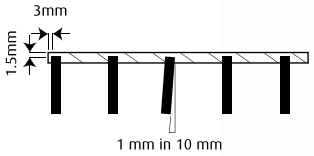
WEBFORGE
A valmont COMPANY

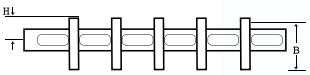
Longitudinal Bow





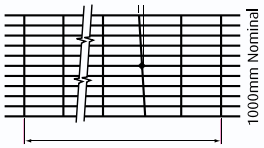
Cross Rod Load Bar Lean





Bmm	Hmm
25	12
>25	15

Cross Rod and Spacing



± 6 mm centre to centre of crossrods measured randomly across 1500mm in length

Fabrication Welding

Banding bars and attachments are welded with minimum 3mm fillet to one side of:

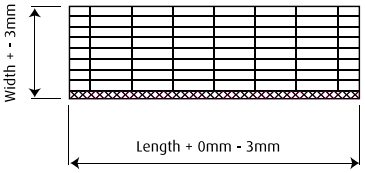
every 5th loadbar on A & B Pattern grating

every 4th loadbar on C & D Pattern grating

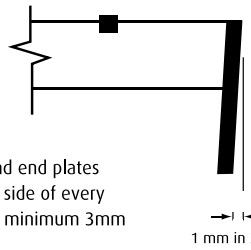
every 3rd loadbar on F pattern grating

Other welding is applied to cut-outs, splays or circles as appropriate or as requested

Stair Treads

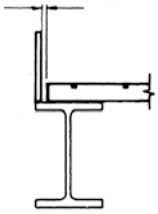


End Flat Lean

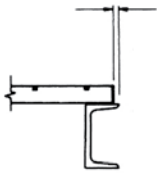


Welding:-
Banding Bars and end plates are welded one side of every load bar with a minimum 3mm fillet weld.

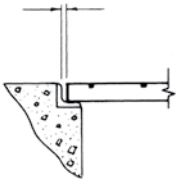
10mm nom.



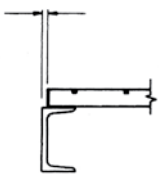
10mm nom.



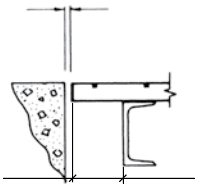
Min. clearance equal to rebate angle thickness



10mm nom.



15mm nom.



250mm max. Cantilever

Load Bar Chart

No. of bars	AB	CD	F	G
41	1205			1530
40	1175			1492
39	1145			1454
38	1115			1416
37	1085			1378
36	1055			1339
35	1025			1301
34	995			1263
33	965			1225
32	935			1187
31	905	1205		1149
30	875	1165		1111
29	845	1125		1073
28	815	1085		1035
27	785	1045		997
26	755	1005		958
25	725	965		920
24	695	925		882
23	665	885		844
22	635	845		806
21	605	805	1205	768
20	575	765	1145	730
19	545	725	1085	692
18	515	685	1025	654
17	485	645	965	616
16	455	605	905	577
15	425	565	845	539
14	395	525	785	501
13	365	485	725	463
12	335	445	665	425
11	305	405	605	387
10	275	365	545	349
9	245	325	485	311
8	215	285	425	273
7	185	245	365	235
6	155	205	305	196
5	125	165	245	158
4	95	125	185	120
3	65	85	125	82
2	35	45	65	44

WA	1205	1205	1205
Other	995	1005	1025

Note:
Sizes are overall outside to outside of bars
Calculations based on 5mm bars for A to F pattern.
G pattern is FRP only. Bar centres are 38.1mm

Accessories

Webplate

Webplate is a flooring product that comprises floorplate welded to the top of the grating.

Any steel or aluminium grating pattern can be combined with any floorplate thickness. However Webforge recommends the use of Pattern F grating. Other combinations can be supplied on request.

Webplate is available in the following steel or aluminium combinations

Material	Product	Floor Treadplate Thickness	Grating	Weight Untreated Kg/sqm	Span at 4kPa UDL 5mm Deflection
STEEL	WP3 F255MP*	3mm	F255MP*	44.49	1390mm
	WP5 F325MP*	5mm	F325MP*	64.78	1625mm
ALUMINIUM	WP3 F255AP*	3mm	F255AP*	16.21	1100mm
	WP5 F325AP*	5mm	F325AP*	23.21	1350mm

Where *indicates treatment, refer to the website for a detailed description of part number protocols under steel and aluminium grating sections.

WebGrip™ Anti-Slip

Available in:

- WebGrip™ Anti-Slip Stair Nosing
- WebGrip™ Metal Plating
- WebGrip™ Metal Strips
- WebGrip™ Conveyor Channel

Features:

- High Impact Resistance
- Anti-Slip Properties which overcome wet & oily surfaces
- Chermical & UV Resistance
- Durable Galvabond, Stainless Steel or Aluminium backing
- AS/NZ Certified

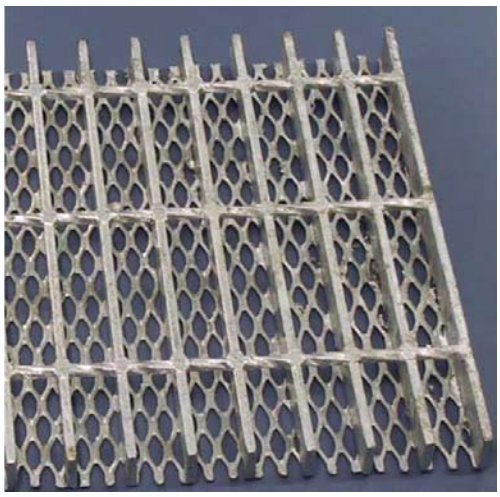
Stock sizes & Custom Manufactured sizes available

Webmesh

Webmesh comprises grating with a flattened, light gauge, expanded mesh welded to the underside to prevent tools and small objects from falling through the grating.

Meets the requirements of **AS/NZS1657 Clause 4.5** with mesh 1216F for steel grating or 1216AF for aluminium grating, welded to the underside of the grating.

* See website for more details.



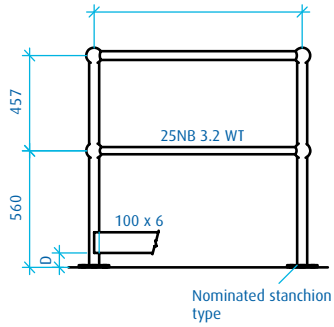
Safety Barrier

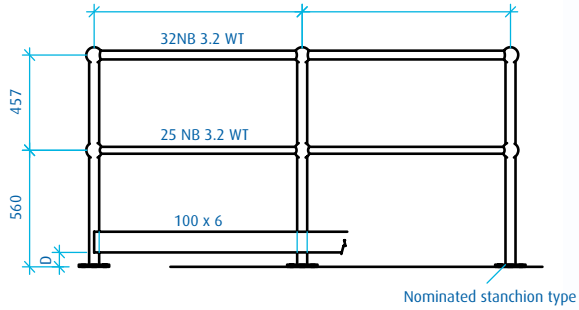
Stanchion spacing dimensions must be nominated on the drawings.
Stanchion type must be nominated.
For stairways the stair angle and Hypotinuse (H) must be nominated.
As per 'typical' drawings below.
Safety barrier stanchions are seal welded to the rails.

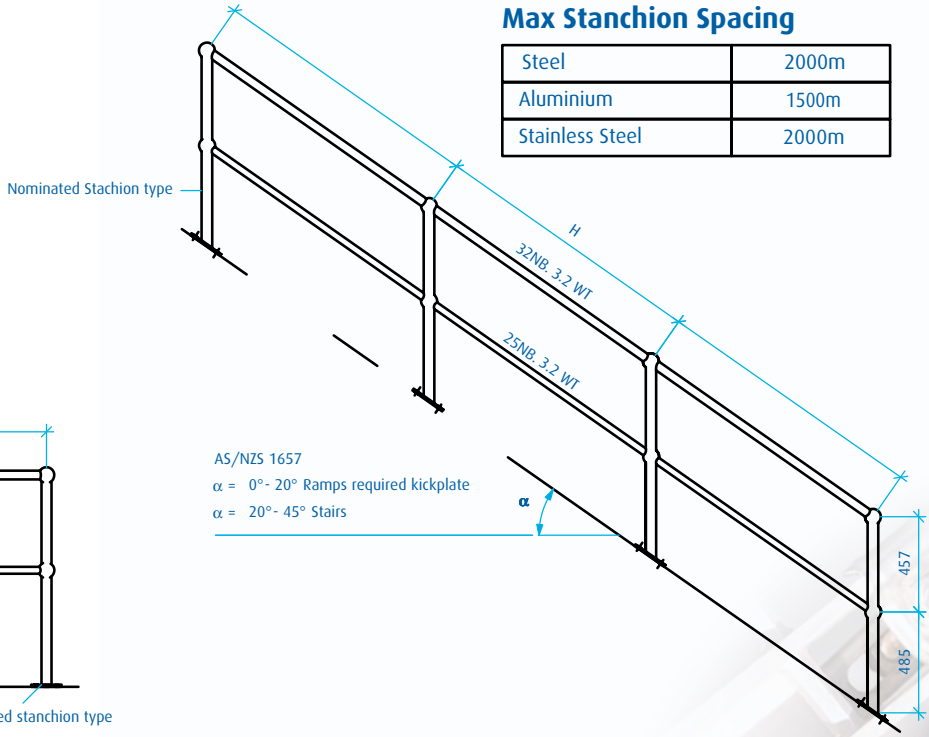
	HANDRAIL	KNEERAIL
Steel	32NB	25NB
Aluminium	46 O.D. x 3.5mm	46 O.D x 3.5mm
Stainless Steel	32Sch10 2.8WT	32Sch10 2.8WT

Max Stanchion Spacing

Steel	2000m
Aluminium	1500m
Stainless Steel	2000m







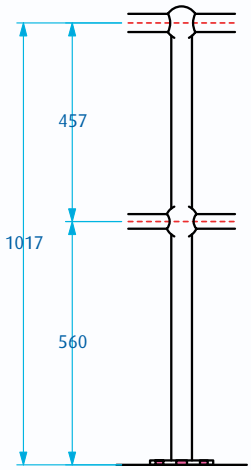
Steel Stanchions

STEEL	S/S
32 NB med	32 Sch10

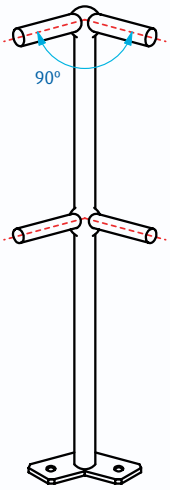
STEEL	S/S
25 NB med	25 Sch10

STEEL	S/S
40 NB med	40 Sch10

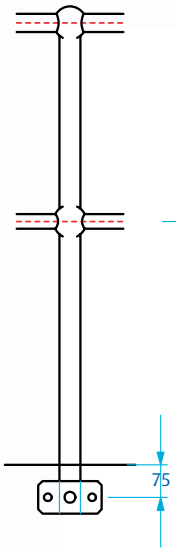
P
Platform



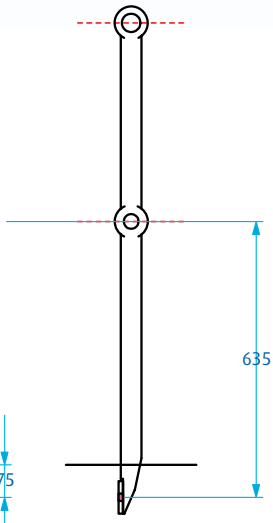
PC
Platform Corner



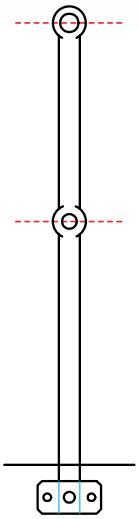
S
Side



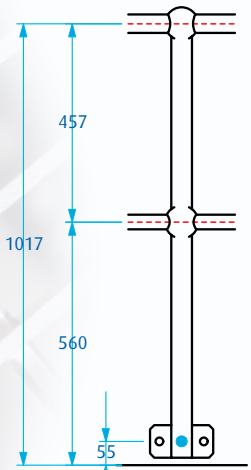
S
Side



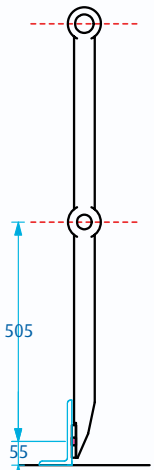
S90
Side90



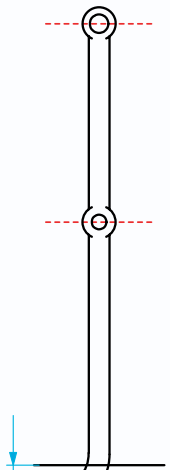
SC
Side Conveyor



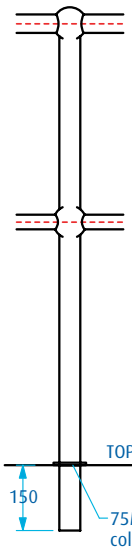
SC
Side Conveyor



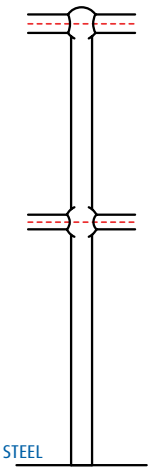
SO
Side Offset



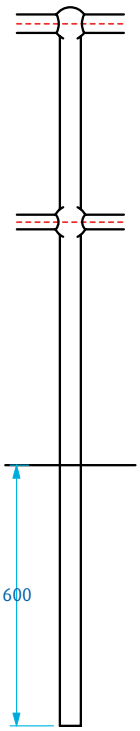
C
Cored



W
Welded

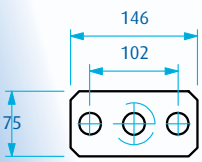


IG
In Ground

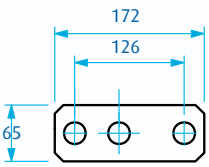


BASE PLATES

STANDARD & ANGLE MOUNTED From 0° - 13°

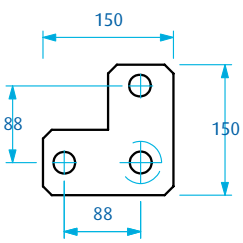


ANGLE MOUNTED ONLY From 14° - 45°



Hole size 17.5mm typical
All steel & s/s base plates
are 10mm thick
Ctr hole 25mm

CORNER



WEBFORGE
A valmont COMPANY

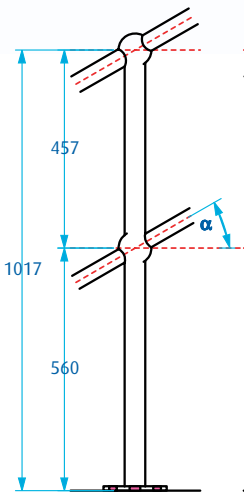
Steel Stanchions

PA Platform Angle

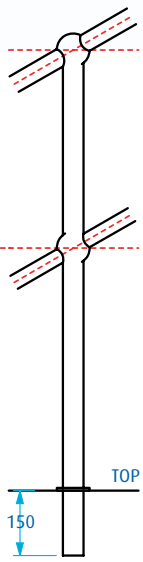
STEEL	S/S
32 NB med	32 Sch10

STEEL	S/S
25 NB med	25 Sch10

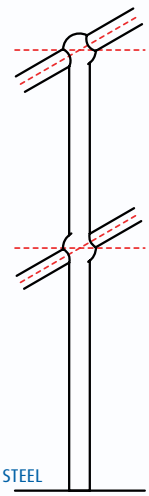
STEEL	S/S
40 NB med	40 Sch10



CA Cored Angle

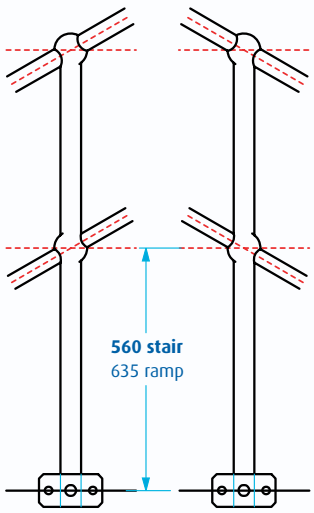


WA Welded Angle



SAL Side Angle Left

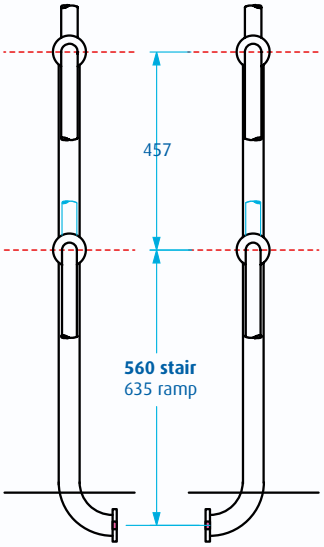
SAR Side Angle Right



Left and Right hand side going up the stairs / Ramp →

SOAL Side Offset Angle Left

SOAR Side Offset Angle Right



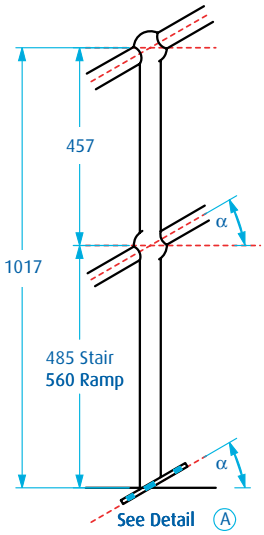
α = Angle Drillings
Angle drilled stanchions can be made to order with any angle designated between 1° - 45°

AM Angle Mounted

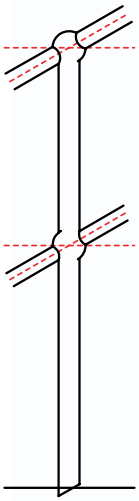
STEEL	S/S
32 NB med	32 Sch10

STEEL	S/S
25 NB med	25 Sch10

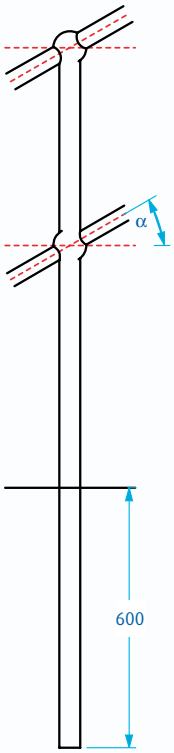
STEEL	S/S
40 NB med	40 Sch10

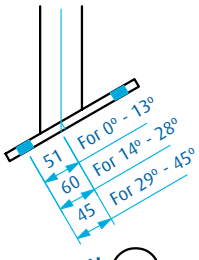


AMW Angle Mounted Welded



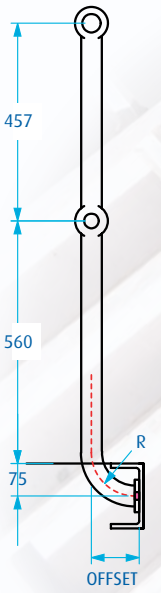
IGA In Ground Angle





Detail (A)

α = stair/ramp angle



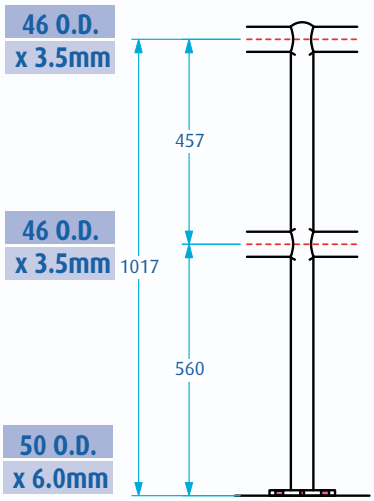
'SO' TYPE OFFSETS

CHANNELS		UNIVERSAL BEAMS	
SIZE	STEEL OFFSET	SECTION	STEEL OFFSET
150 x 75	110	200UB	110
180 x 75	110	250UB	110
200 x 75	110	310UB	130
230 x 75	110	360UB	130
250 x 90	130	410UB	130
300 x 90	130	460UB	130
380 x 100	130	530UB	140

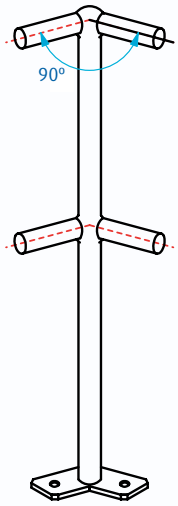
RADIUS R
Steel 100mm - Stainless Steel 100mm

Aluminium Stanchions

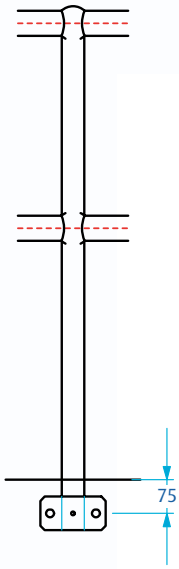
P
Platform



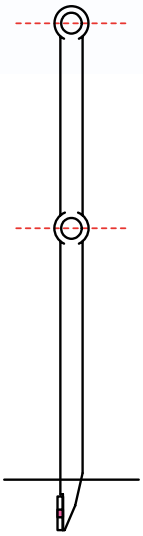
PC
Platform Corner



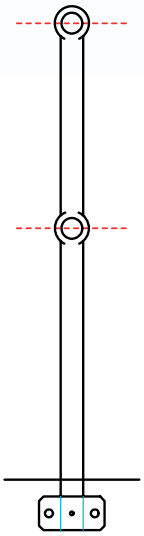
S
Side



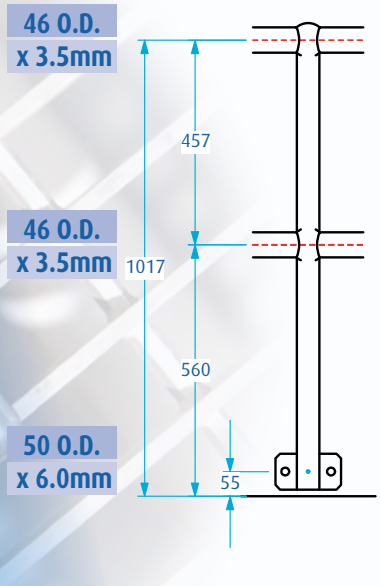
S
Side



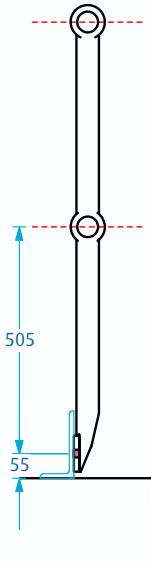
S90
Side90



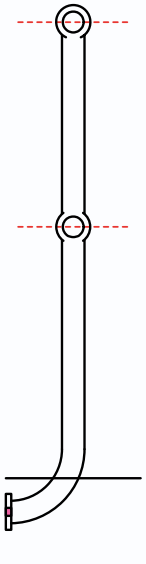
SC
Side Conveyor



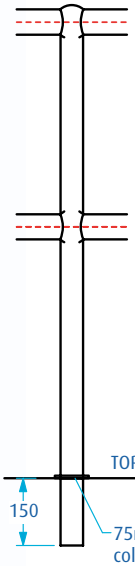
SC
Side Conveyor



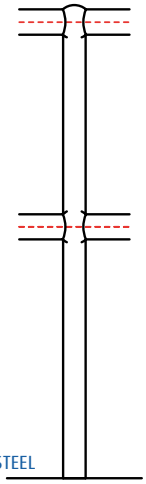
SO
Side Offset



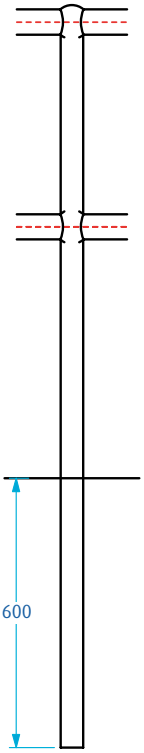
C
Cored



W
Welded

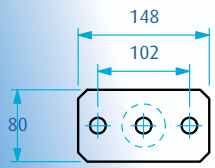


IG
In Ground

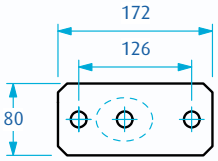


BASE PLATES

STANDARD & ANGLE MOUNTED From 0° - 13°

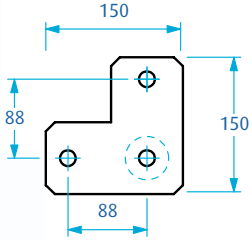


ANGLE MOUNTED ONLY From 14° - 45°



Hole size 17.5 mm typical.
All Alumunium base plates
are 12 mm thick.

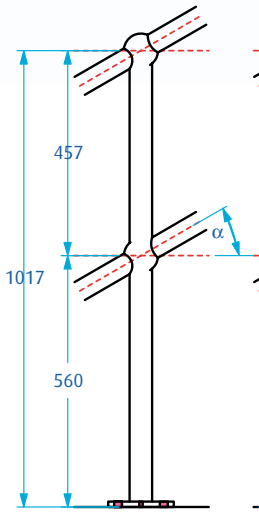
CORNER



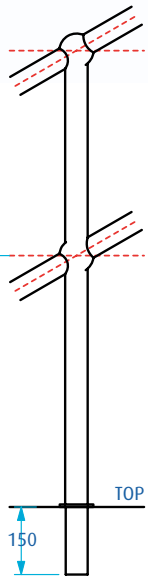
WEBFORGE
A valmont COMPANY

Aluminium Stanchions

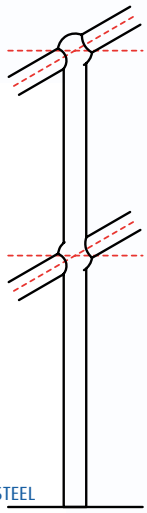
PA
Platform Angle



CA
Cored Angle

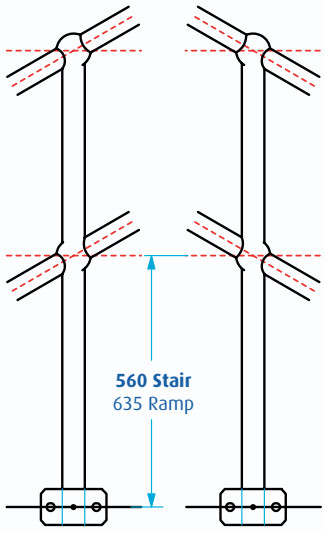


WA
Welded Angle



SAL
Side Angle Left

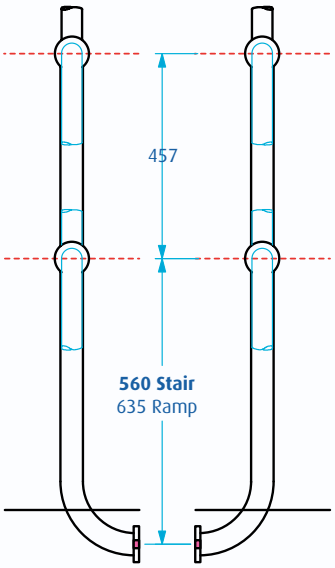
SA*
Side Angle Right



Left and Right hand side, going up the Stairs / Ramp →

SOAL
Side Offset Angle Left

SOAR
Side Offset Angle Right

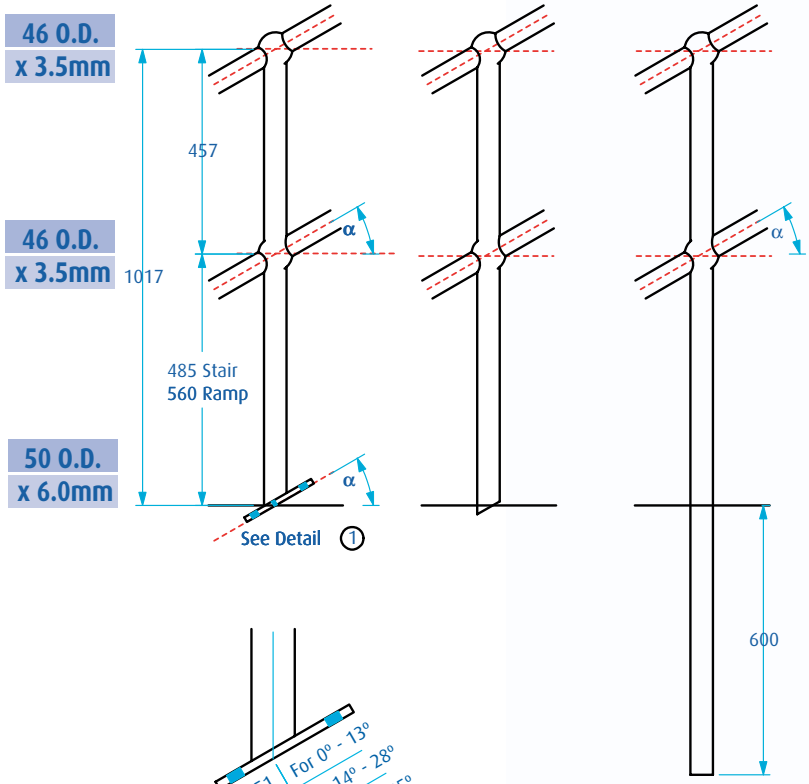


α = Angle Drillings
Angle drilled stanchions can be made to order with any angle designated between 1° - 45°

AM
Angle Mounted

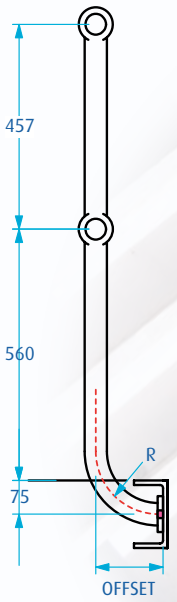
AMW
Angle Mounted Welded

IGA
In Ground Angle



Detail ①

α = stair/ramp angle



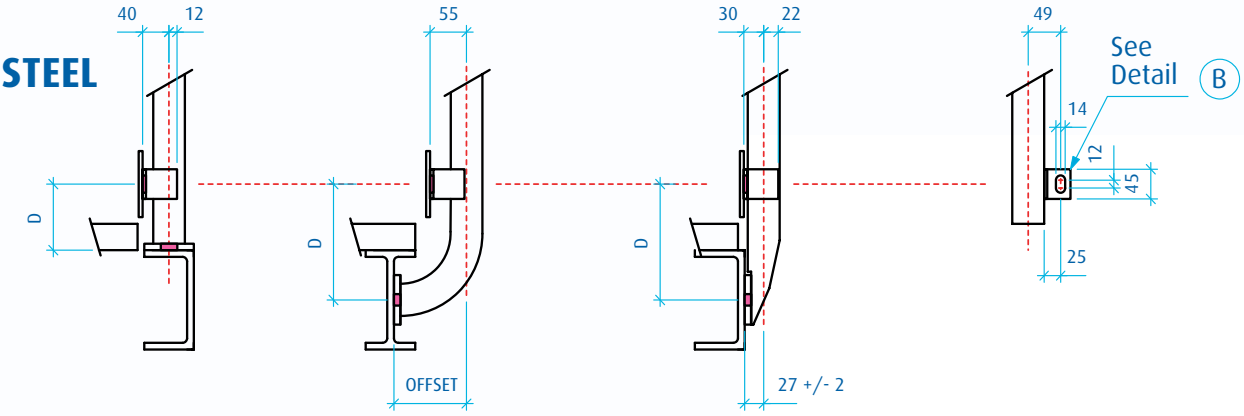
'SO' TYPE OFFSETS

CHANNELS		UNIVERSAL BEAMS	
SIZE	ALUM. OFFSET	SECTION	ALUM. OFFSET
150 x 75	150	200UB	150
180 x 75	150	250UB	150
200 x 75	150	310UB	150
230 x 75	150	360UB	150
250 x 90	150	410UB	150
300 x 90	150	460UB	165
380 x 100	165	530UB	165

RADIUS R
Aluminium 140 mm

Kickplate Mounting Brackets

STEEL



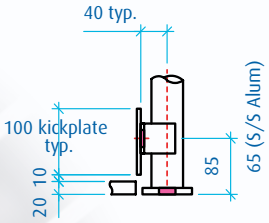
Steel

DIMENSION 'D' FOR VARIOUS STANCHION TYPES				
Grating Height mm	NIL	20,25,32	40,45,50	60, 65
P, W, C	D = 60	D = 85	D = 100	D = 120
S & SO	D = 135	D = 160	D = 180	D = 195

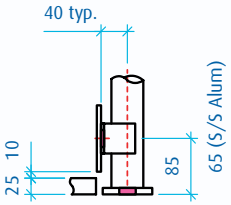
Stainless Steel & Aluminium

DIMENSION 'D' FOR VARIOUS STANCHION TYPES				
Grating Height mm	NIL	20,25,32	40,45,50	60, 65
P, W, C	D = 40	D = 65	D = 80	D = 100
S & SO	D = 115	D = 140	D = 160	D = 175

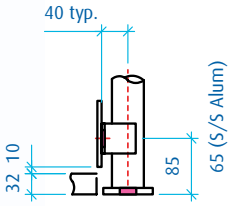
20mm GRATING



25mm GRATING



32mm GRATING



TYPICAL KICKPLATE POSITIONS

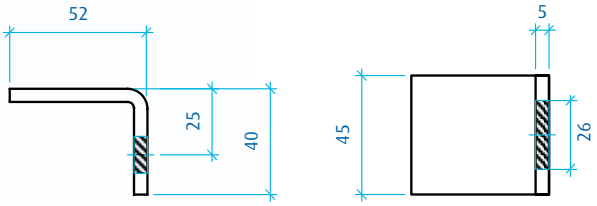
Detail B

KICKPLATE MOUNTING BRACKET

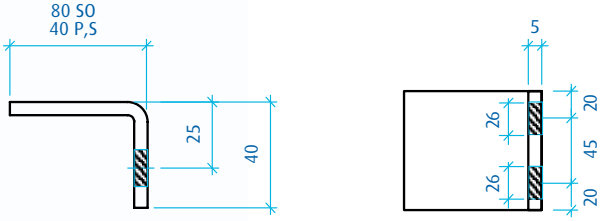
KICKPLATE MOUNTING BRACKET NOTES

1. Kickplate mounting brackets are optional and must be specified when ordering.
2. Kickplate mounting brackets are mounted on the right hand side of the stanchion when viewed from the walking surface, unless DLSO.
3. The slot in the bracket allows for 7mm up/down adjusment of the kickplate.
4. Standard kickplate is 100 x 6 flat but other sizes are available.

Steel



Stainless Steel & Aluminium

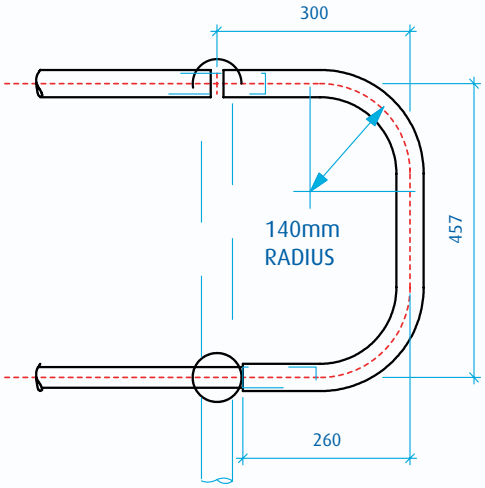


P, S Stanchion
SO Stanchion

CLOSURES & BENDS

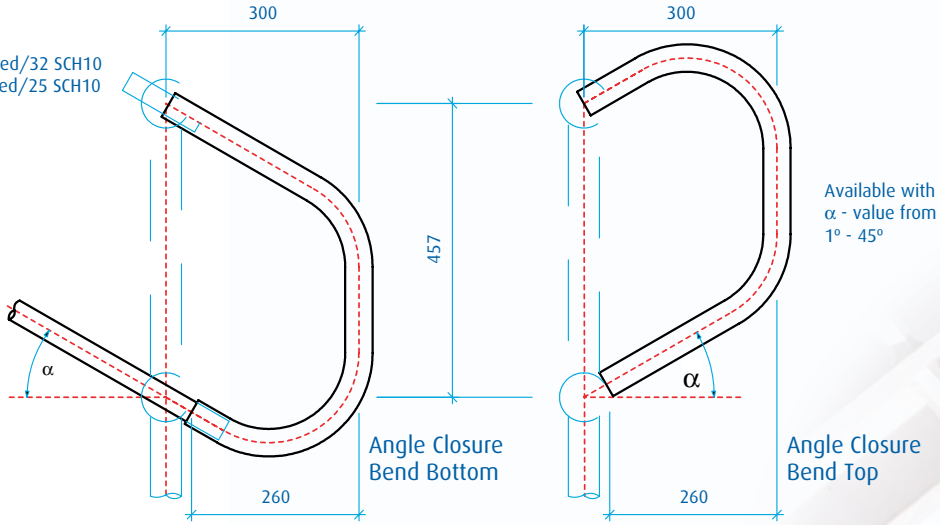
Horizontal Closure Bends (HCB)

Standard pipe :
Steel Handrail : 32NB med/32 SCH10
Steel Kneerail : 25NB med/25 SCH10
Standard radius 140mm Centre line
Alum: 46 O.D. x 3.5mm



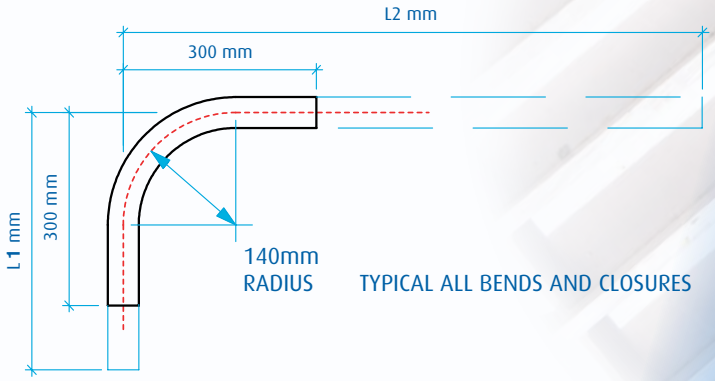
Angle Closure Bends (ACB)

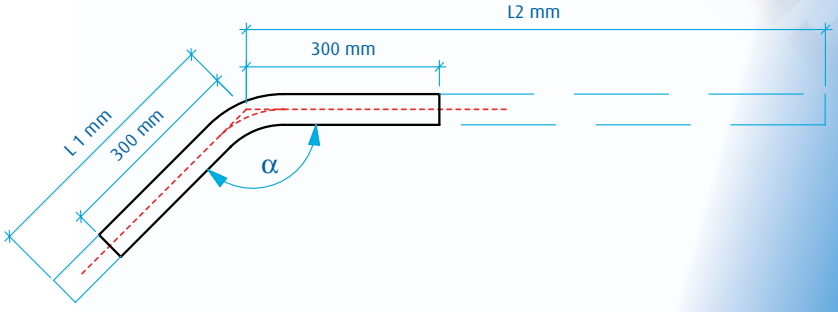
Standard pipe :
Steel Handrail : 32NB med/32 SCH10
Steel Kneerail : 25NB med/25 SCH10
Standard radius 140mm
Centre line
Alum: 46 O.D. x 3.5mm



Rail Bends (RB)

Standard pipe :
Steel Toprail : 32NB med/32 SCH10
Steel Kneerail : 25NB med/25 SCH10
Standard radius 140mm Centre line
Angle a value from 90° - 180°
Aluminium Top Rail : 46 O.D x 3.5mm
Aluminium Knee Rail : 38 O.D x 2.0mm
Standard Leg :
300mm x 300mm
Non Standard Leg :
L1 + L2 = 2000





Gates

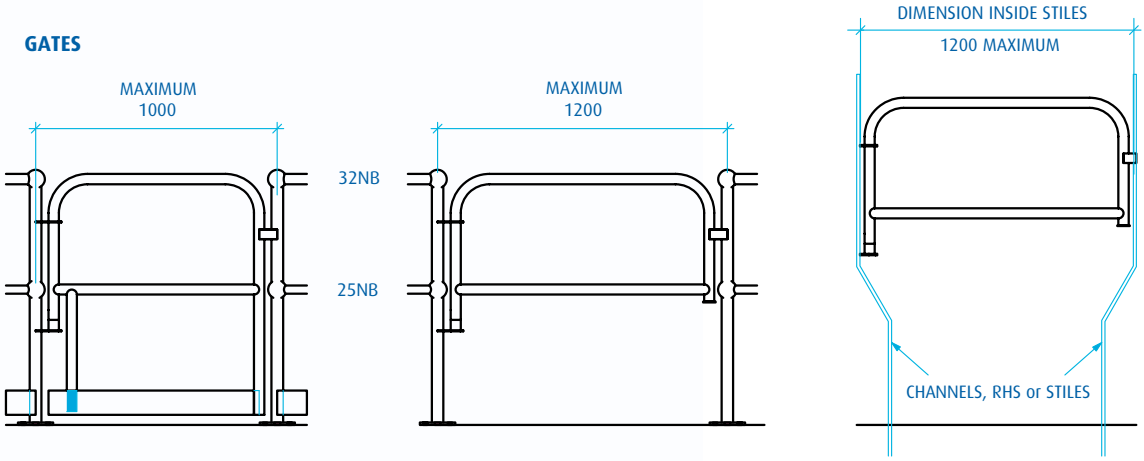
GATES - STEEL

Webforge Monowills gates are self - closing and are designed to be attached to Monowills stanchions.
The direction or swing is critical to obtain a correctly functioning gate.
Webforge gates can be supplied with kickplate if required, or to suit the flatbar or structural styles at the top of a ladder.
Single gates should not exceed 1200 mm; the most popular size is 800 mm.
Gates with kickplate should not exceed 1000mm maximum per gate.

Gate Types

- Spring Loaded
- Self Closing
- Padlock Option
- Combine with any stanchion
- Bracket variations for welding to columns
- Double Gate
- Kickplate Optional

GATES

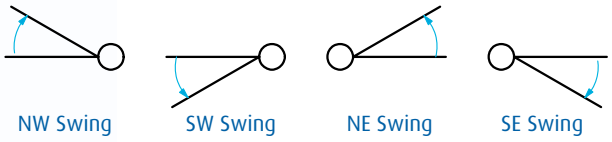


Note : Compliance with AS1657 requires minimum width of 600 mm.

Important

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

*viewed from walking surface



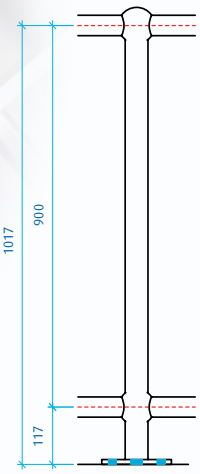
BALUSTRADE STANCHIONS

STEEL	S/S
32NB med	32 Sch10
	2.8wt

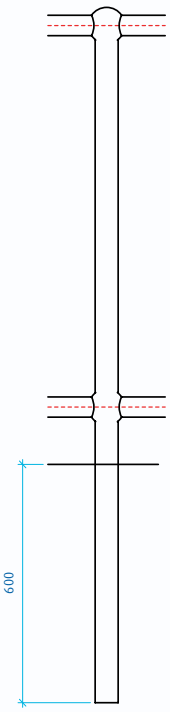
STEEL	S/S
32 NB med	32 Sch10
	2.8wt

STEEL	S/S
40 NB med	40 Sch10

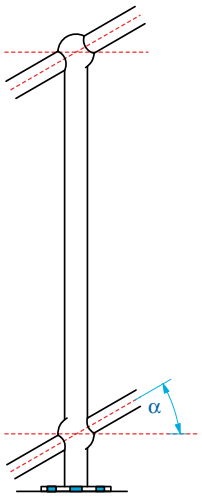
P Ball
Platform



IG Ball
In Ground



PA Ball
Platform Angle



* Not available in Aluminium

α : Angle Drillings
Angle drilled stanchions can be made to order with any angle designated between 1° - 45°.

Balustrade Barrier

Balustrades do not meet the dimensional requirements of AS/NZS1657

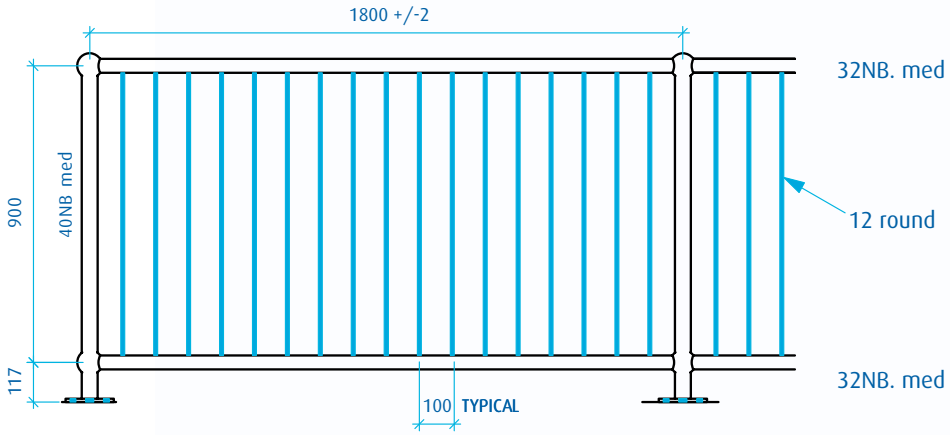
Notes:
To meet the requirements of AS/NZS1170 Table 3.3 C3 the stanchion spacing should not exceed 1.80m for the P units and 1.6m for S units.
To meet the requirements of AS/NZS1428 a disability rail balustrade must be used with the attached handrail as shown.
Balustrade barrier should not be more than 6.5m in length per panel.
Avoid large right angle panels where the leg length exceed 2.5m for shipping and packing reasons. All balustrade must have fully sealed welded joints.
* Not available in Aluminium

BAL-1

Standard

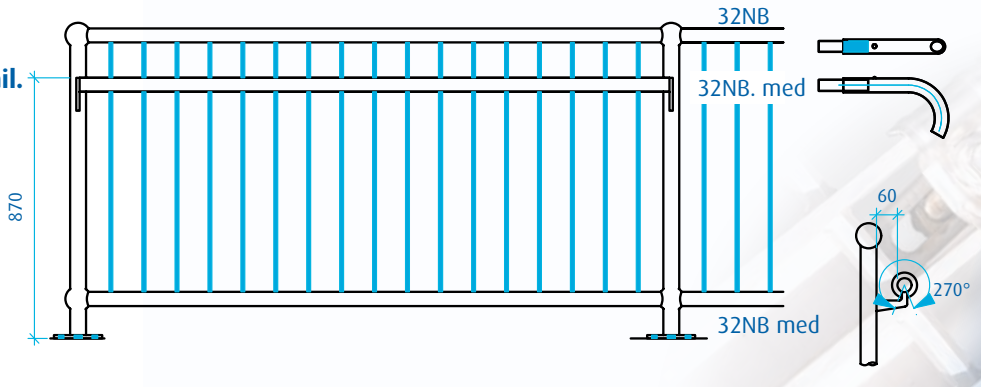
32NB top / bottom rails
12mm diameter rods.

s/s 32Sch10
top/bottom rail



AS1428 disability Balustrade with handrail.

BAL-1D
Disability barrier.
As for BAL-1, with the addition of extra railling to comply with requirements of AS1428.1 for disability access.
Additional rail may be applied to other balustrade types by suffix "D"

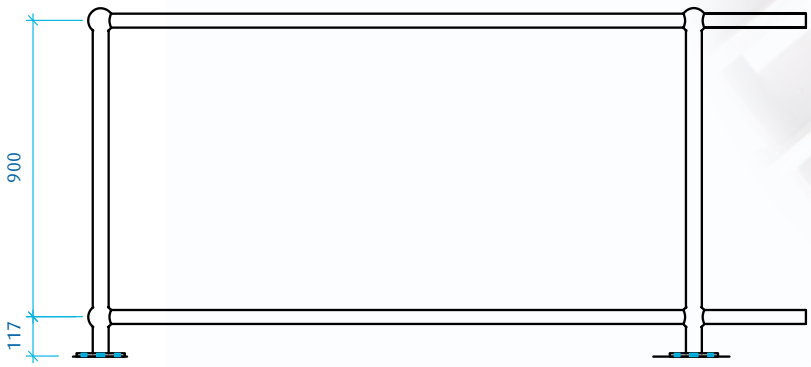


Special balustrade

Balustrade can be manufactured with different infill, eg. Expanded Metal, Woven Wire, Perforated Metal etc.

BAL-SP

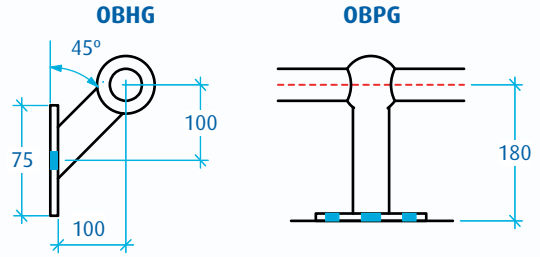
. Your choice of infill
. Your choice of stanchion type

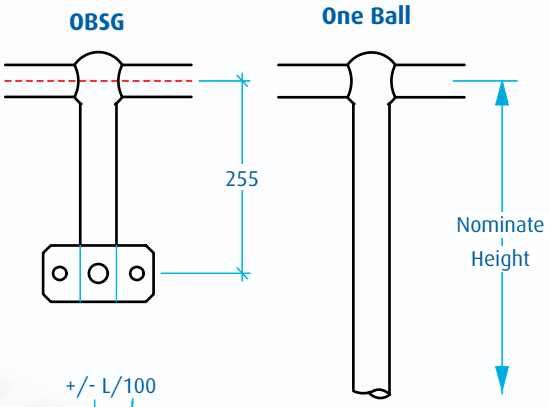


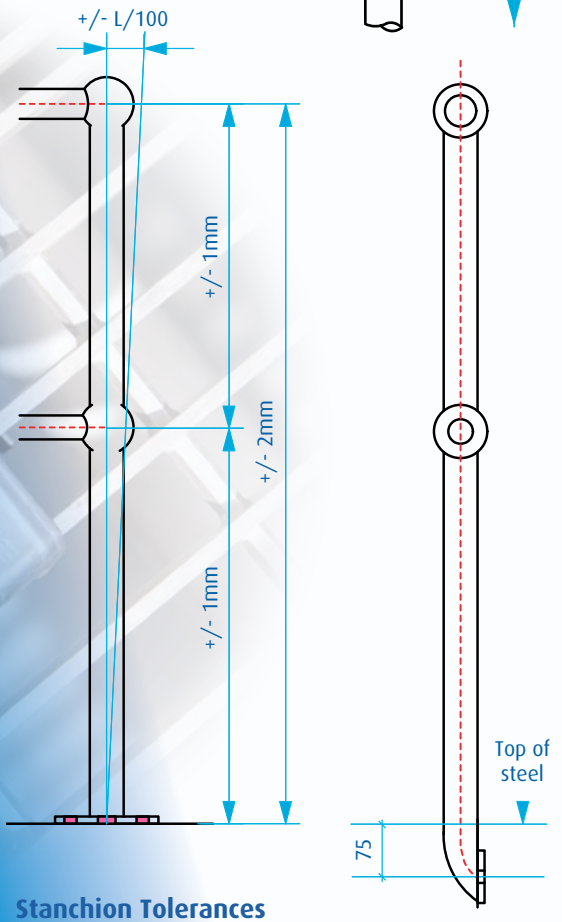
STEEL	S/S
32 NB med	32 Sch10

STEEL	S/S
32 NB med	32 Sch10

Tolerances / Oneball Stanchions / Multi-ball







Stanchion Tolerances

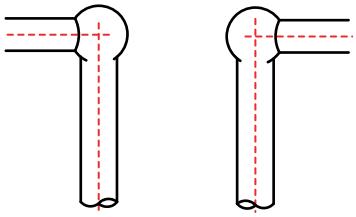
Height	+/- 2.0 mm in 1 metre
Angle Drilling	+/- 1 degrees
Base plate alignment:	+/- 2mm
Vertical alignment	+/- L/100
Sphere drilling	2 - 4 oversize

One Ball Stanchions

(Note these do not meet AS/NZS1428 or AS/NZS1657 requirements.)
One ball stanchions are available with all the various stanchions configurations. These spheres are drilled for 32NB pipe UON.
The type of stanchion and the overall height have to be nominated.
There are three handrail stanchion configurations as shown below:
(Note these do not meet AS/NZS1428 handrail requirements due to the sphere.)

Drilled one side only

All stanchions can be provided in the drilled one side only; (DOSO) configuration. The conventions used are as shown and are nominated when viewed from the walking surface.

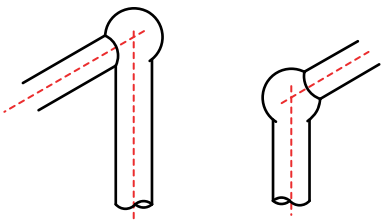


DLSO
Drilled Left Side Only

DRSO
Drilled Right Side Only

Multi Ball Stanchions

(Note these do not meet AS/NZS1657 requirements.)
Multi ball stanchions are available with all the various stanchions configurations. The drilling size to suit required rail pipe sizes and the spacing between spheres have to be nominated. Minimum sphere centres is 250mm. The type of stanchion and the overall height have to be nominated.



DBSO
Drilled Bottom Side Only

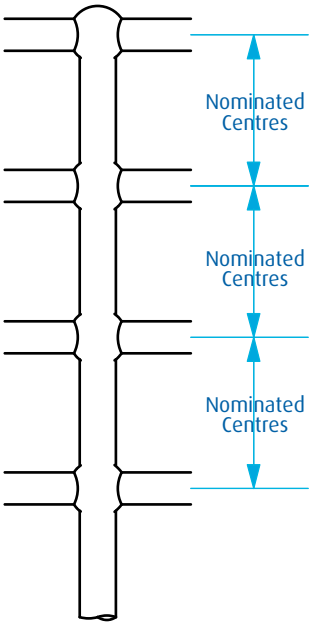
DTSO
Drilled Top Side Only

Preferred Drilling Dimensions

	Steel & Stainless steel	Aluminium
Toprail sphere	45mm	48mm
Kneerail sphere	36mm	48mm
Balustrade lower sphere	45mm	N/A

S Special Stanchion

The S special stanchion is available in the S, SAL, SAR and SC configurations. Please contact your Webforge branch.



Multi Ball

Installation Details

Technical Details

Base Plate Fixings

Base plates for Standard monowills stanchions require 2-M-16 bolts. (17.5 holes.)
Base plates for Jumbo stanchions require 4-M-16 bolts. (20 holes.)
When fixing into concrete, chemical anchors are required rather than expansion anchors.
Shims placed below the baseplate are acceptable for levelling the stanchion.

Rail fixings

All rails should preferably be jointed within the stanchion sphere. Where this is done then the slip joint can be omitted if the pipe is welded to the sphere. Where that is not possible the joint should occur in the outer quarters of the span between stanchions with a slip joint.
Slip joints can be kept in position for steel stanchions with

- Welding
- Taper pins
- Screws

Sphere fixings

Rails should be fixed to spheres at least every 3m. by welding.

Closure bend fixings

Closure bends are welded to the top sphere and to the knee rail. The kneerail connection is either welded, pinned or screwed as the closure fits over the kneerail.

Expansion joints

In long runs of railings expansion joints are required. Expansion joints should be in the outside quarters of the span . Expansion joints are made by fixing one side of a slip joint and allowing the other side to be free.

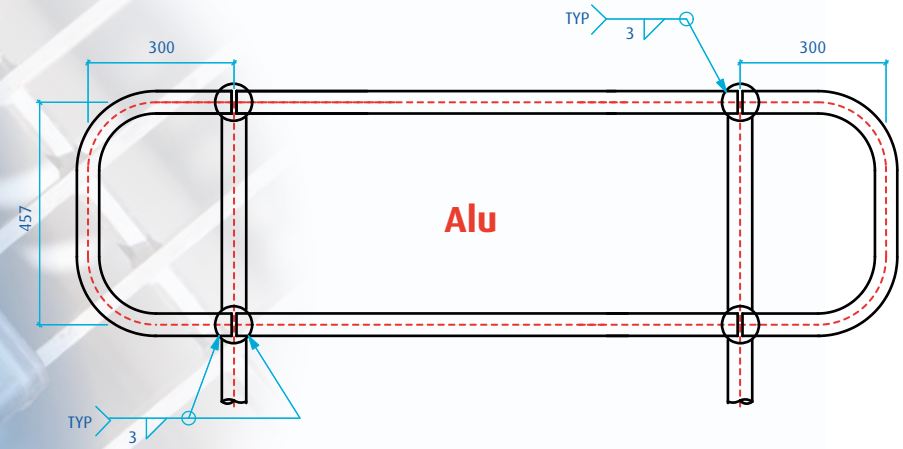
Kickplate

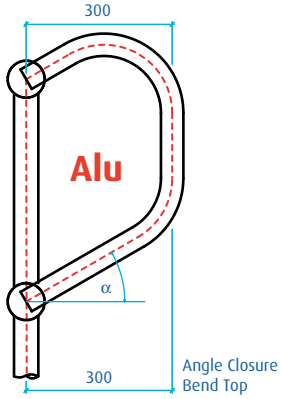
Kickplate can be welded or bolted to the kickplate mounting bracket.

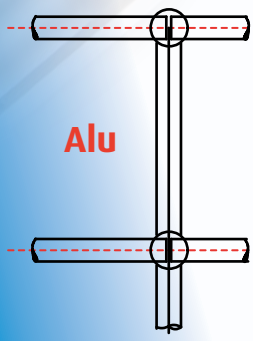
Stanchion spacings

Stanchions are spaced at nominally 2000mm maximum.
Aluminium Stanchions are spaced at 1500mm maximum.

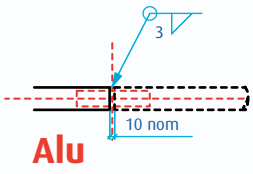
Aluminium



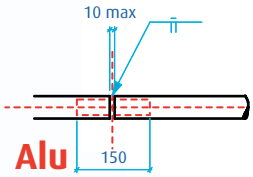




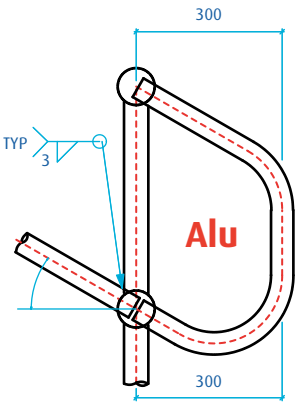
Typical joins in rails at Spheres



Expansion Joint detail
using a 150mm slip joint
typ for top and knee rails



Weld joint detail for a pipe join
using a slip joint as a backing bar.
Typ for top and knee rails



Installation Details

End caps
Monowills can be terminated with end caps This method is sometimes used when the handrail terminates at a wall or solid object. This is instead of an end closure. End caps are pressed onto the open pipe and must be placed once the pipe is through the stanchion spheres.

DOSO Stanchion
DOSO stands for drilled one side only and these stanchions are usually used against a wall or solid object or at a gate or ladder access point, replacing an end closure. Handrail should be installed working away from the DOSO stanchion.

Corner posts (PC)
A corner post stanchion can be used at 90 degree changes of direction instead of a 90 degree bend. Handrail should be installed working away from the corner stanchion. The handrail connection to the Corner post stanchion must be welded

Kickplate
Kickplate can be attached to the stanchions or be part of the flooring material. If a kickplate is required then the stanchions usually come with kickplate mounting brackets which are predrilled angles welded to the stanchion. Kickplate can be attached using M12 bolts in which case it needs to be drilled or it can be welded on site . The weld can be done on three sides of the angle or within the holes of the angle bracket.

In Ground Stanchions (IG, IGA)
In ground stanchions are supplied with an extra length leg to allow for casting into a footing. Footing sizes are as specified by the civil engineer.

Curved rails
Curved handrails are rolled to the radius specified. Curved rails should be erected as for straight runs but in some instances the stanchions will need to be placed loose on the rail before it is placed in position.

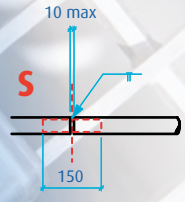
Balustrades
Balustrades are supplied in sections approximately 2m long. The end of one section fits into the stanchion on the next section. It is suggested that two sections are first erected as per Section 1 after which each section can be fitted.

The baseplates of balustrades need to be lifted over the fixing bolts. It is important the fixings are correctly spaced and extend sufficiently to protrude through the baseplate once fitted. Balustrades are joined as for rails.

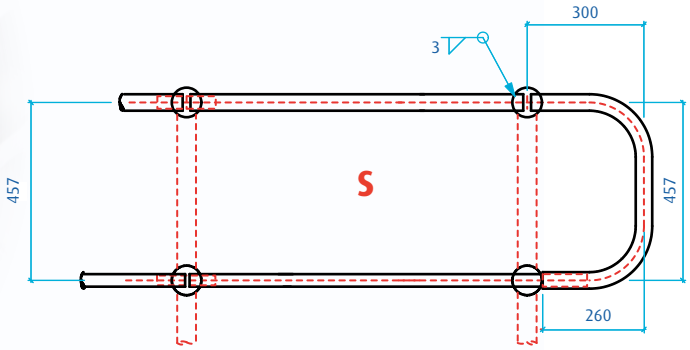
Gates
Gates are manufactured with a swing direction. The gate stanchions are DOSO. Gate springs can be tensioned by turning the spring in the coil direction. Usually 2 to 3 turns are required.

More information can be found at www.webforge.com.au

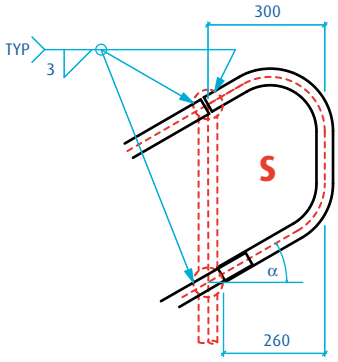
Steel

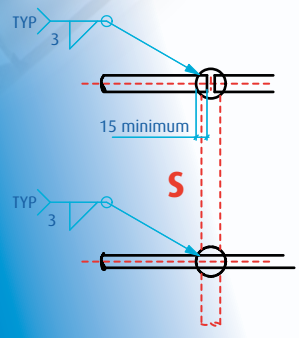


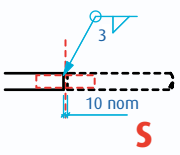
Weld joint detail for a pipe join
using a slip joint as a backing bar
Typ for top and knee rails



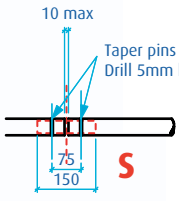
Steel - If tack welding apply a 25mm long tack, with slip joints
Steel - If full seal welding, slip joints are not required
Aluminium - All connections must be full seal welded.



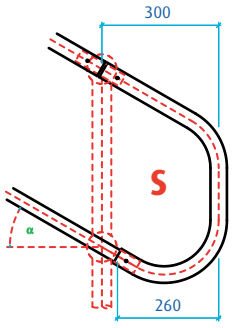




Expansion Joint detail
using a 150mm slip joint
typ for top and knee rails



Slip joint detail for a pipe join
using a slip joint
Typ for top and knee rails



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