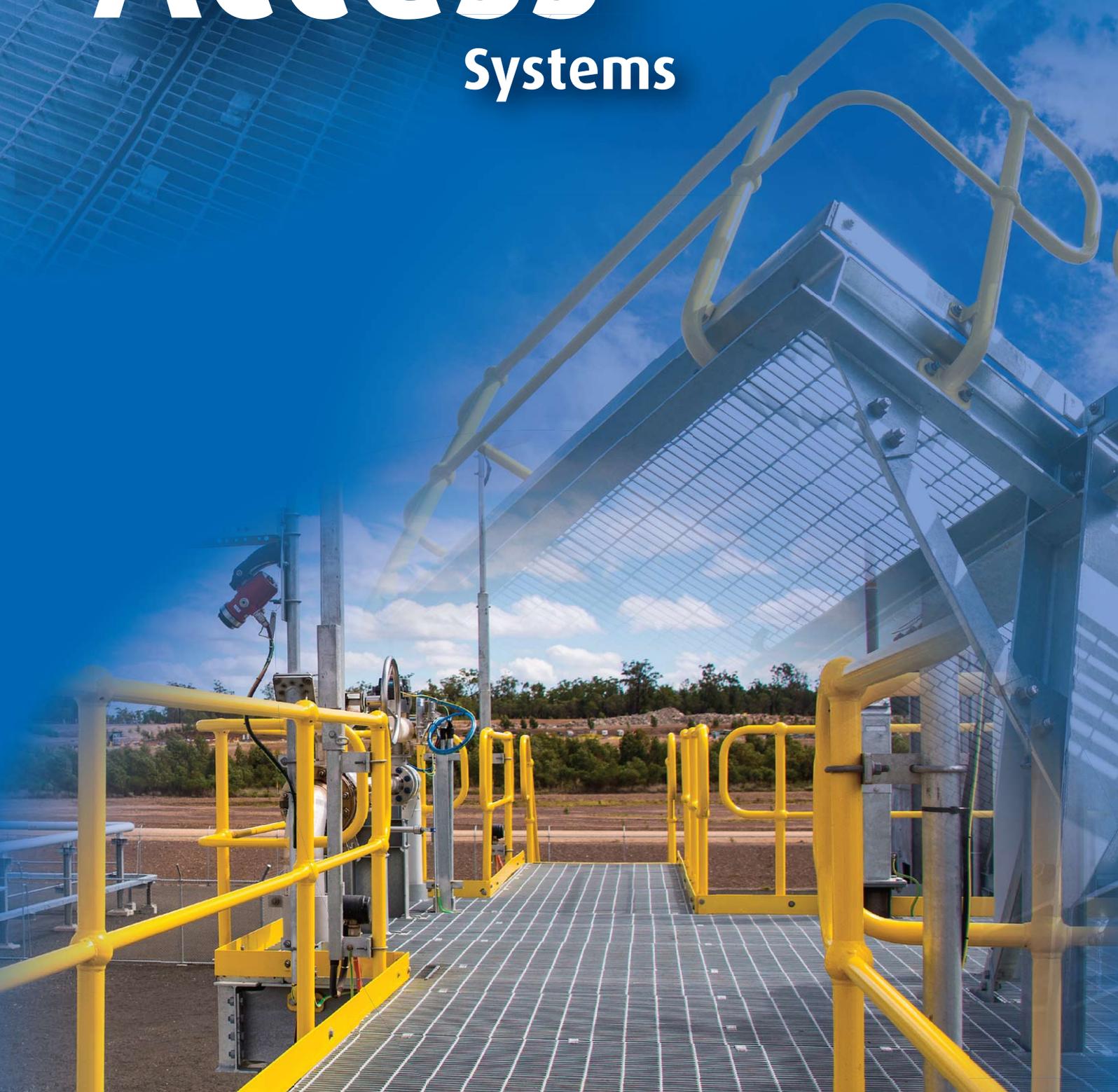


# Access Systems



**WEBFORGE**

A **valmont**  COMPANY

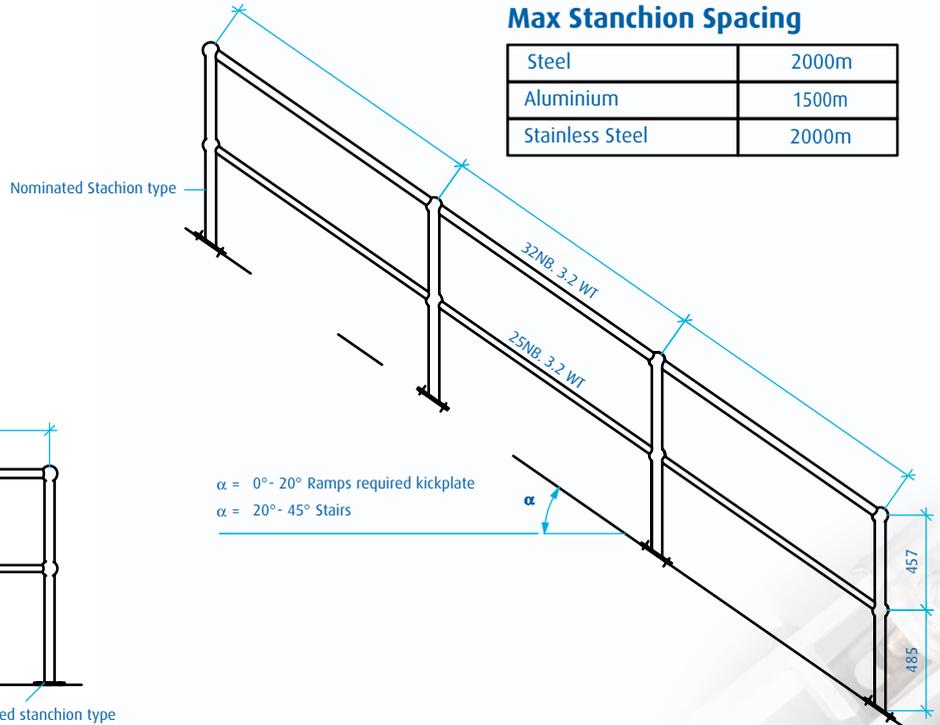
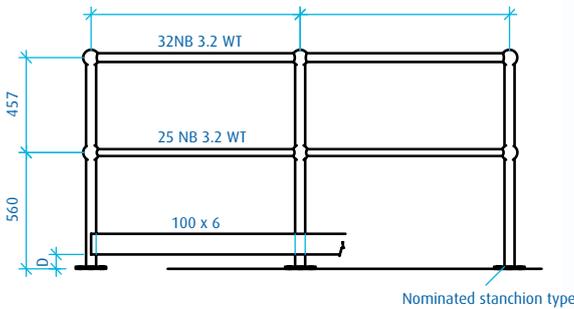
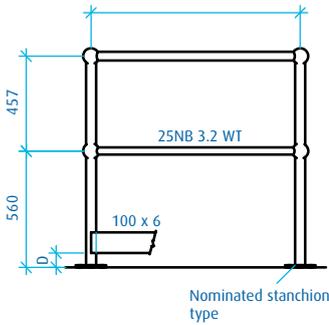
# Safety Barrier

Stanchion spacing dimensions must be nominated on the drawings.  
 Stanchion type must be nominated.  
 For stairways the stair angle 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

**P**  
Platform

**PC**  
Platform Corner

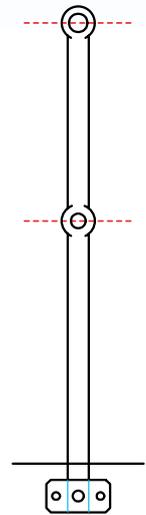
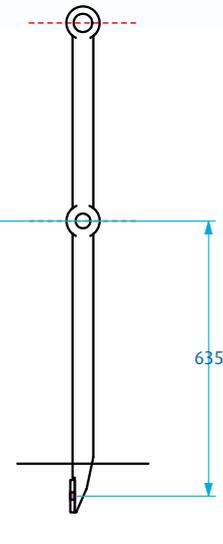
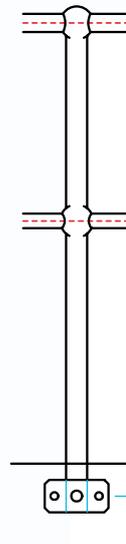
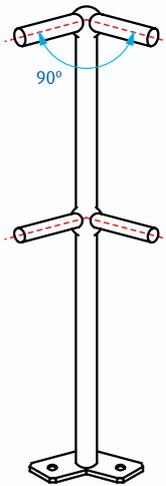
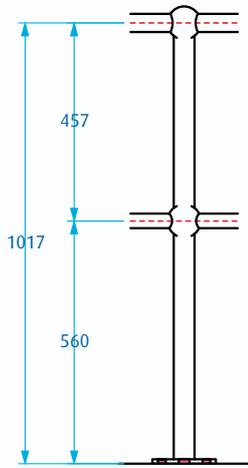
**S**  
Side

**S**  
Side

**S90**  
Side90

STEEL	S/S
32 NB med	32 Sch10

STEEL	S/S
25 NB med	25 Sch10



**SC**  
Side Conveyor

**SC**  
Side Conveyor

**SO**  
Side Offset

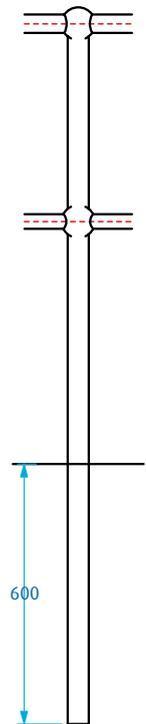
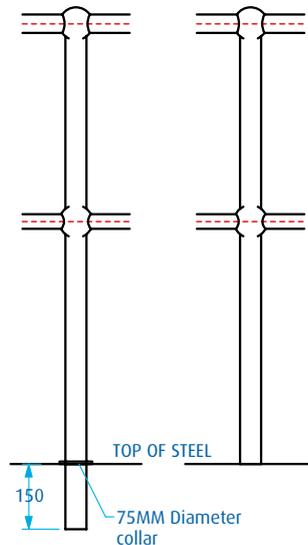
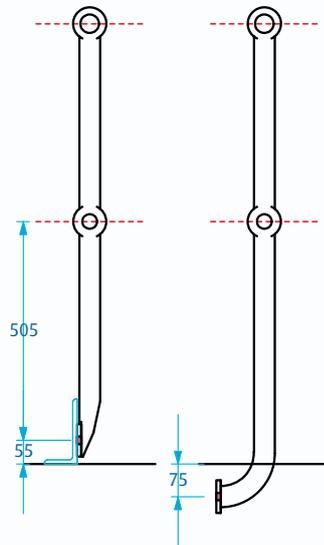
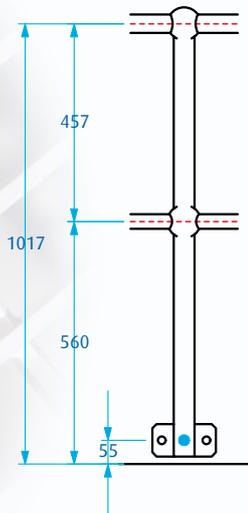
**C**  
Cored

**W**  
Welded

**IG**  
In Ground

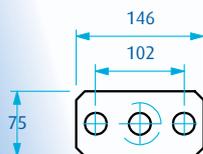
STEEL	S/S
32 NB med	32 Sch10

STEEL	S/S
25 NB med	25 Sch10

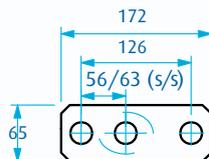


## BASE PLATES

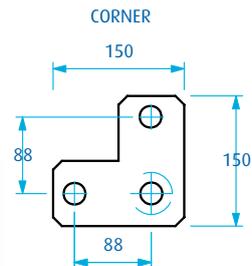
STANDARD & ANGLE MOUNTED From 0° - 14°



ANGLE MOUNTED ONLY From 15° - 45°

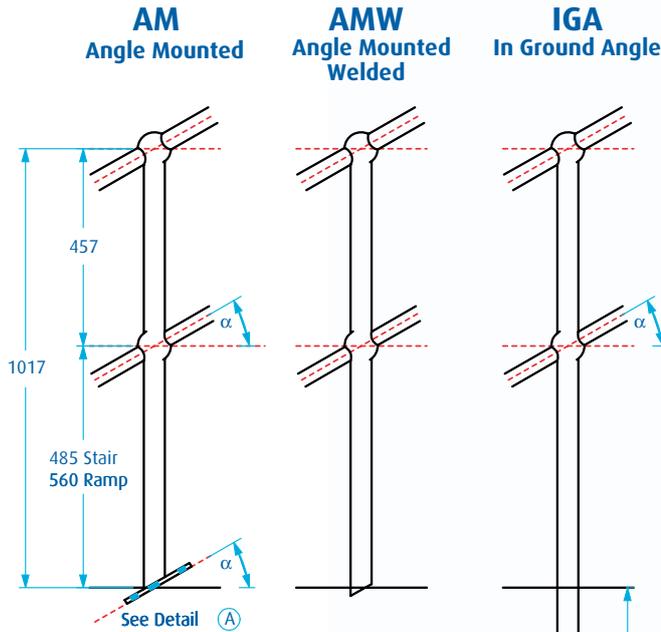
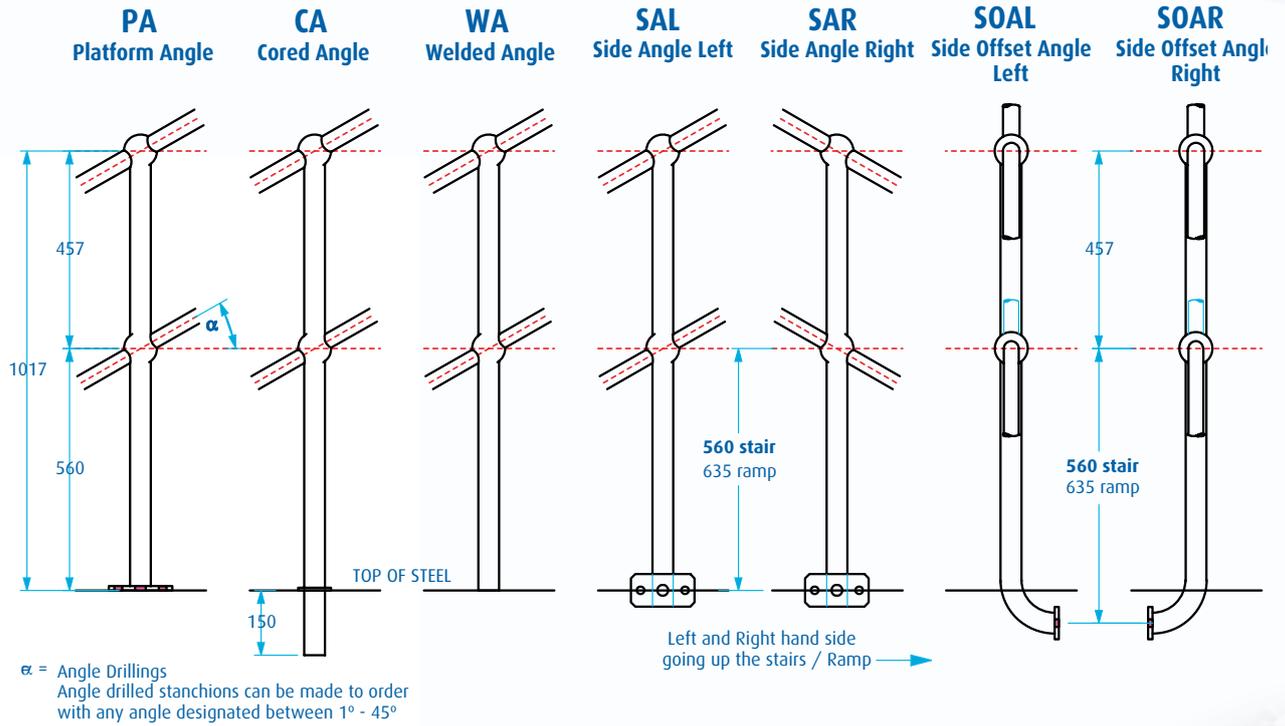


Hole size 17.5mm typical  
All steel & s/s base plates  
are 10mm thick  
Ctr hole 25mm



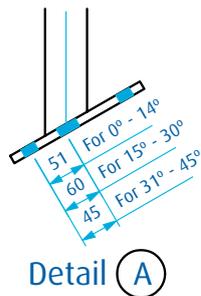
A valmont COMPANY

# Steel Stanchions

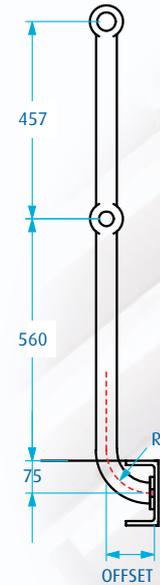


STEEL	S/S
32 NB med	32 Sch10

STEEL	S/S
25 NB med	25 Sch10



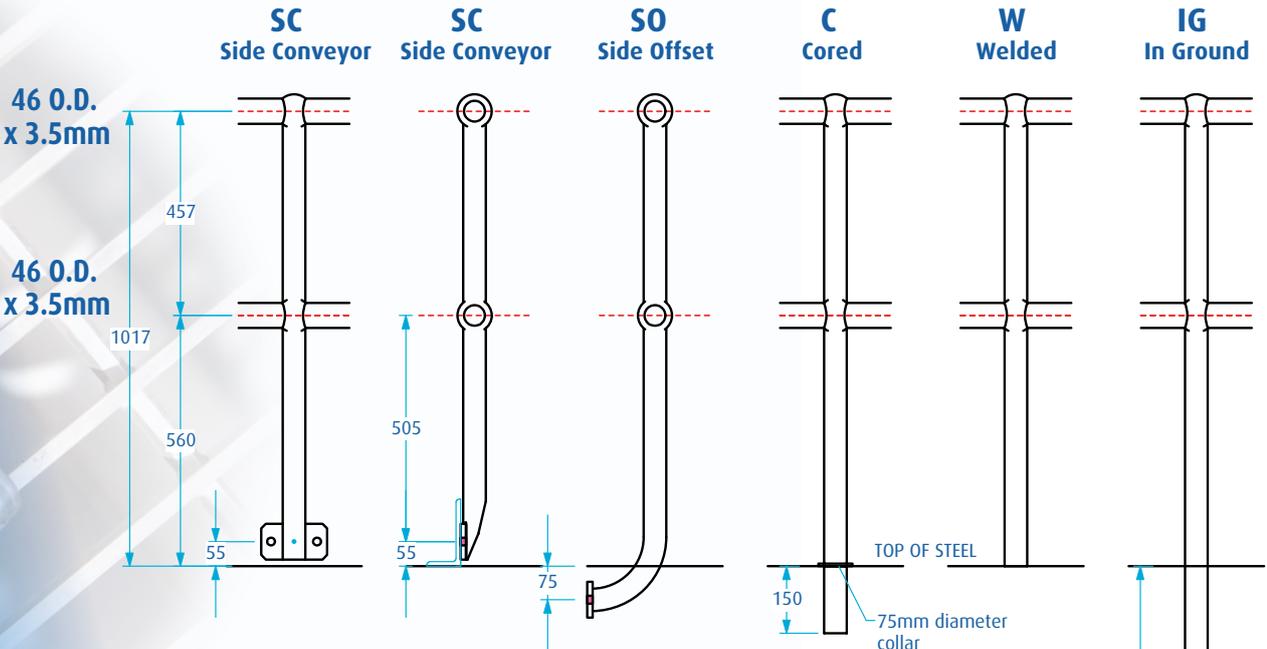
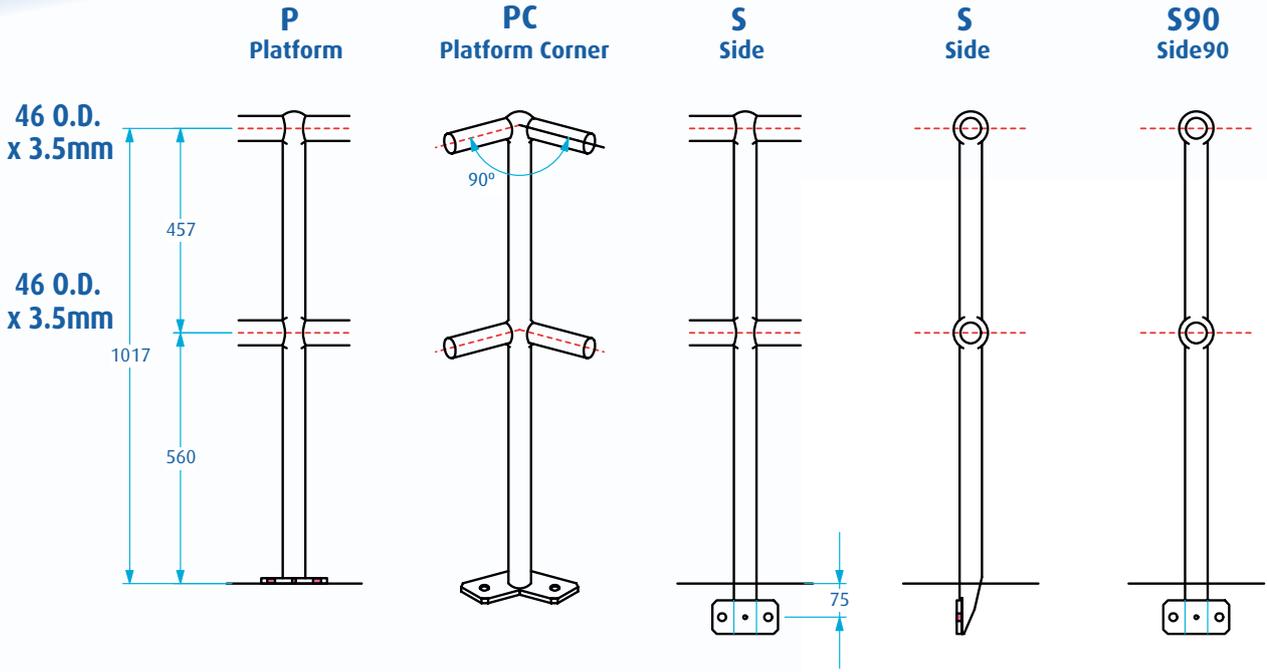
$\alpha$  = stair/ramp angle



'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

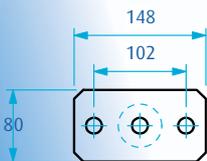
RADIUS R  
 Steel 100mm - Stainless Steel 100mm

# Aluminium Stanchions

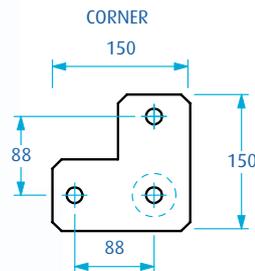
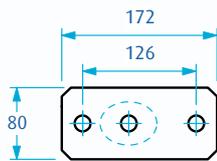


## BASE PLATES

STANDARD & ANGLE MOUNTED From 0° - 14°

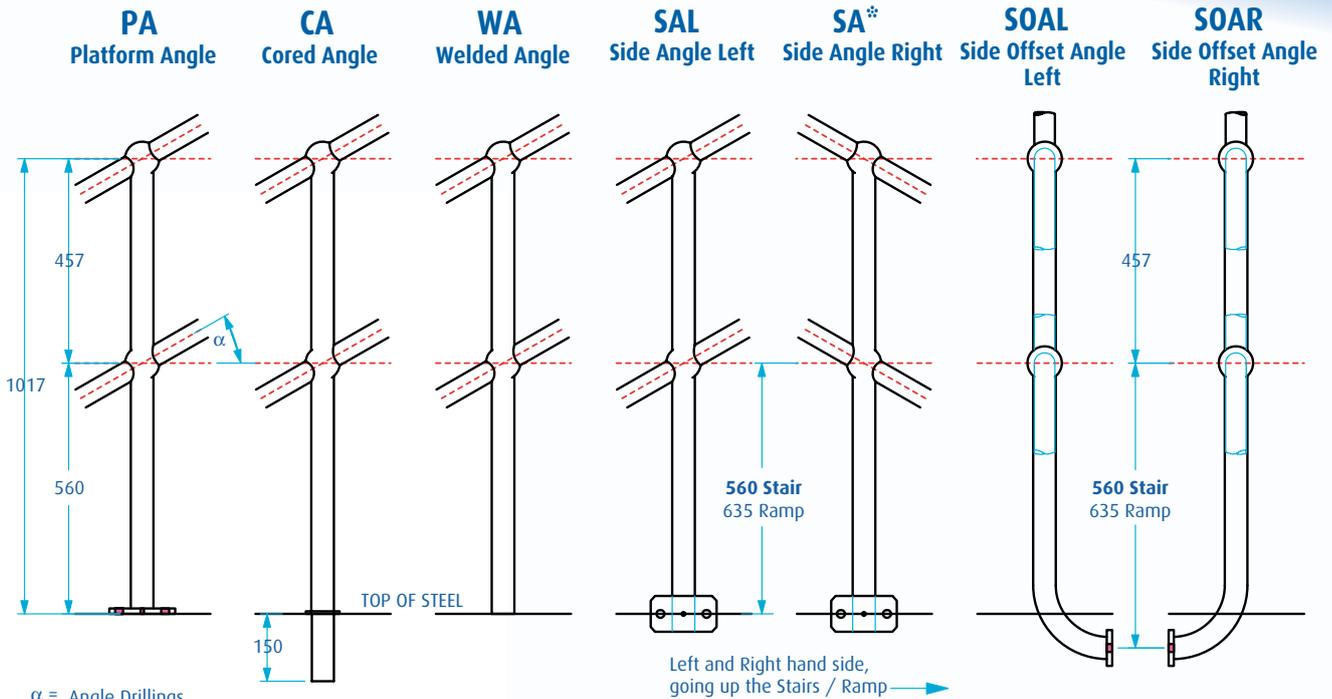


ANGLE MOUNTED ONLY From 15° - 45°

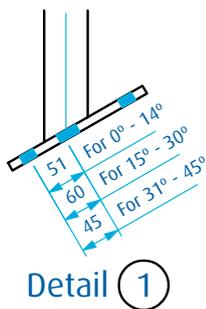
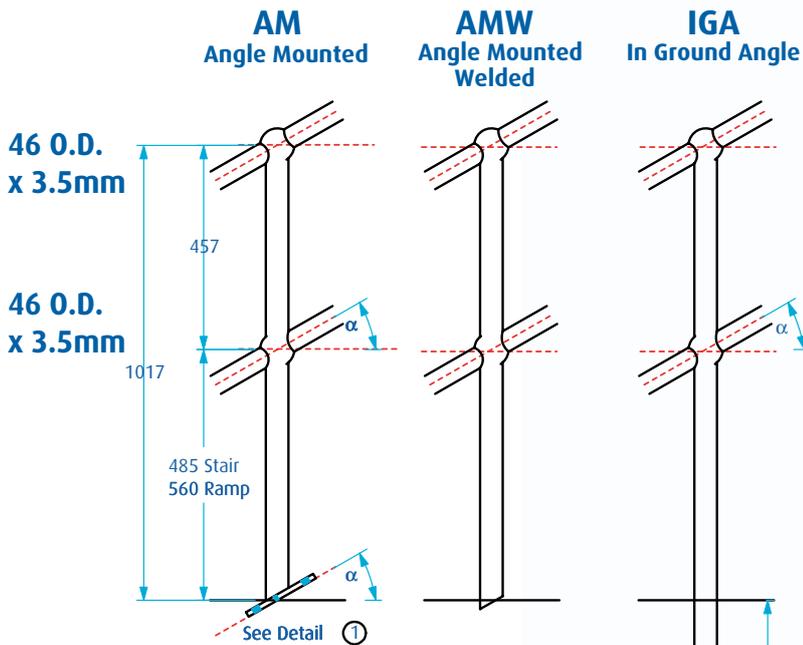


Hole size 17.5 mm typical.  
All Aluminium base plates are 12 mm thick.

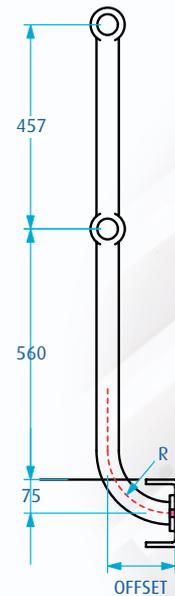
# Aluminium Stanchions



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



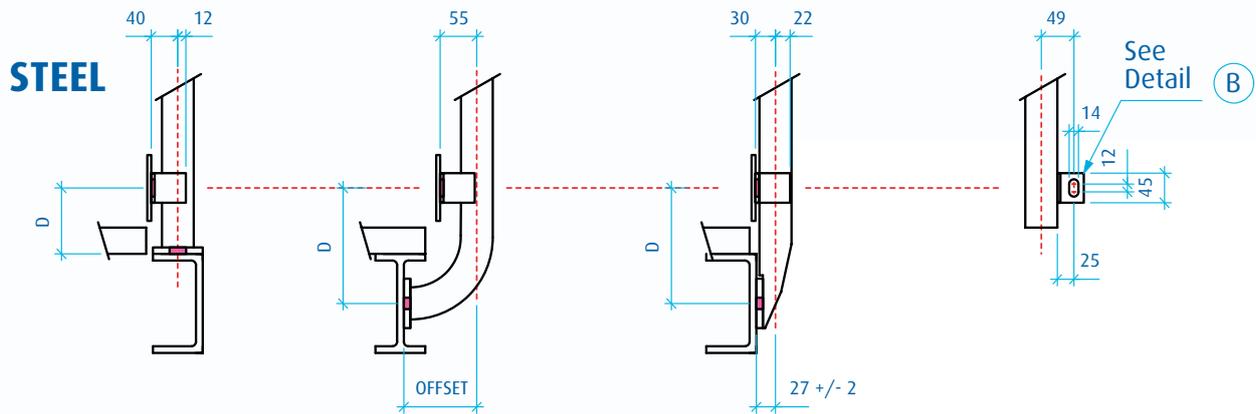
$\alpha$  = stair/ramp angle



'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

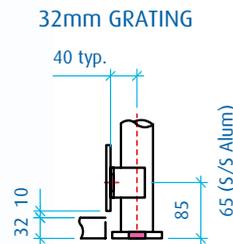
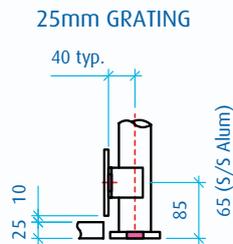
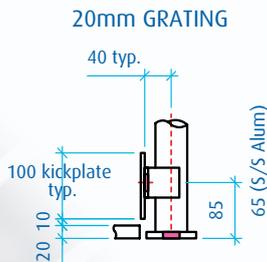


## Steel

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



TYPICAL KICKPLATE POSITIONS

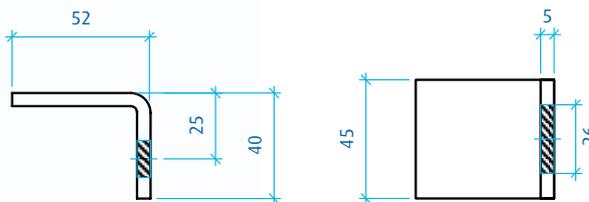
## Detail B

### KICKPLATE MOUNTING BRACKET

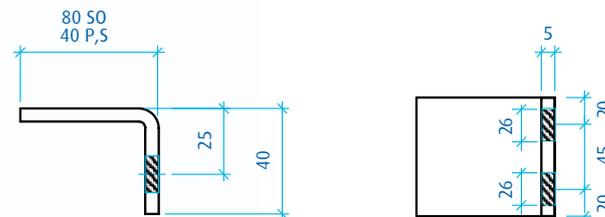
#### KICKPLATE MOUNTING BRACKET NOTES

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 adjustment of the kickplate.
4. Standard kickplate is 100 x 6 flat but other sizes are available.

## Steel



## S. Steel & Aluminium



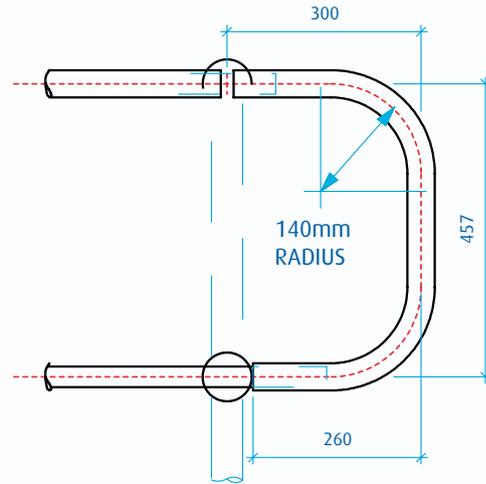
P, S Stanchion  
SO Stanchion

# Closures Bends & Slip Joints

## CLOSURES & BENDS

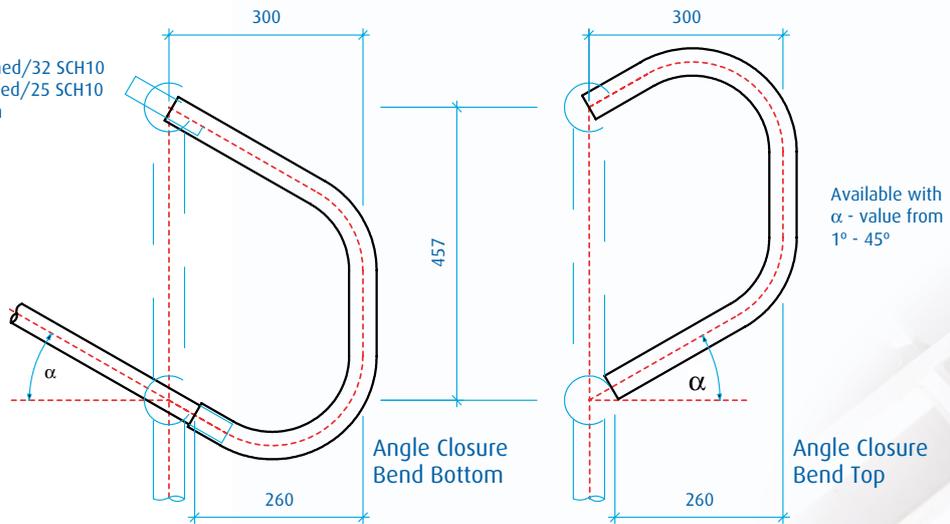
### Horizontal Closure Bends (HCB)

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)

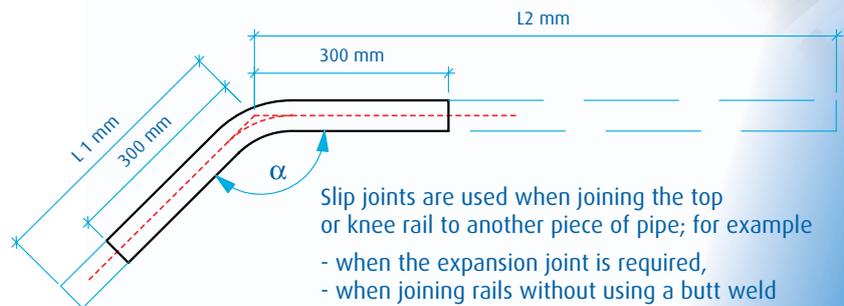
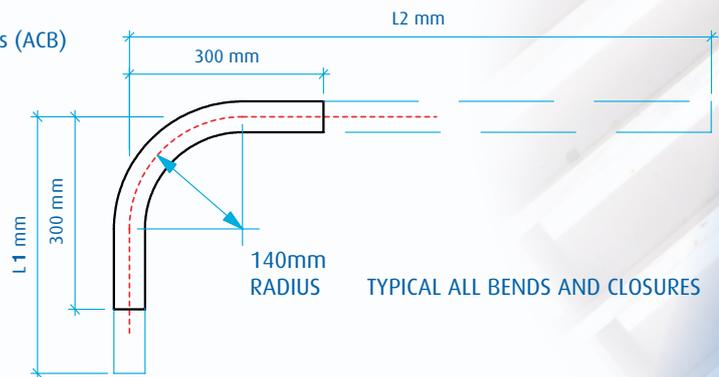
Standard pipe :  
 Steel Handrail : 32NB med/32 SCH10  
 Steel Kneerail : 25NB med/25 SCH10  
 Standard radius 140mm  
 Centre line  
 Alum: 46 O.D. x 3.5mm



### 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 x L2 = < 6500

### Rail Bends (ACB)



Slip joints are used when joining the top or knee rail to another piece of pipe; for example  
 - when the expansion joint is required,  
 - when joining rails without using a butt weld

The slip joint can be fixed by welding or using pins

SLIP JOINTS	
SJ20G - suits	20NB Rail
SJ25J - suits	25NB Rail
SJ32G - suits	32NB Rail
SJ40G - suits	40NB Rail
ST46A - suits	46OD Rail

# 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.

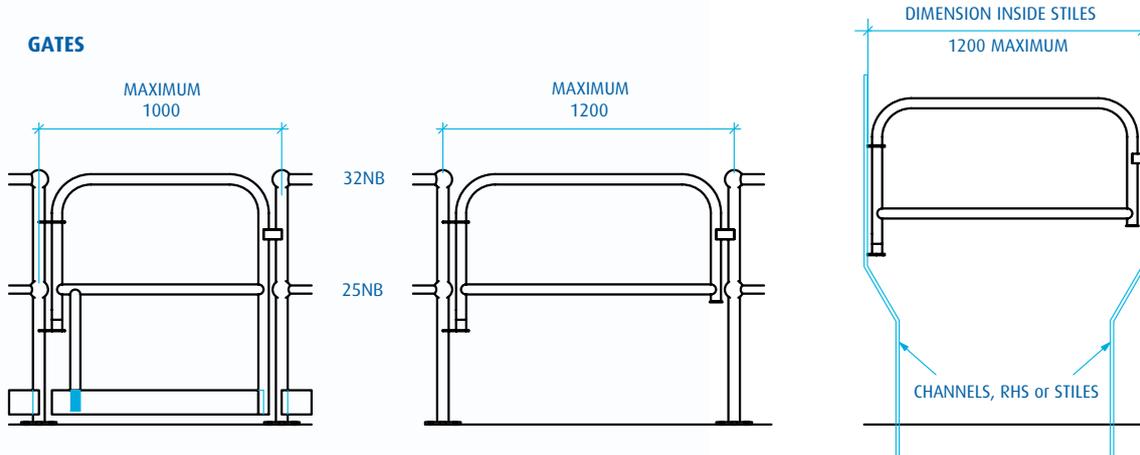
Single gates should not exceed 1200 mm; the most popular size is 800 mm.

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

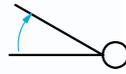


Note : Compliance with AS1657 requires minimum width of 600 mm.

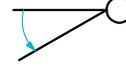
### Important

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

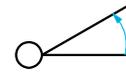
\*viewed from walking surface



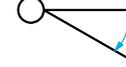
NW Swing



SW Swing



NE Swing

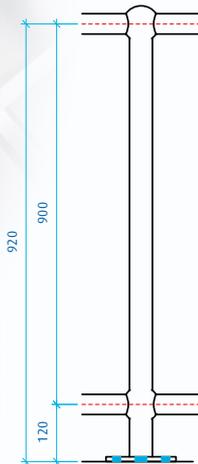


SE Swing

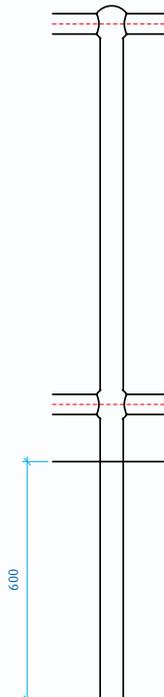
## BALUSTRADE STANCHIONS

P Ball Platform

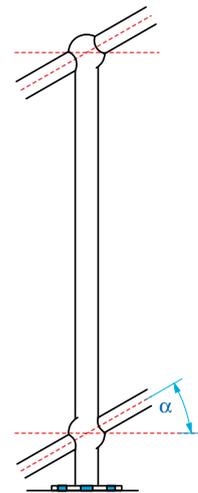
STEEL	S/S
32 NB med	32 Sch10
	2.8wt



IG Ball In Ground



PA Ball Platform Angle



STEEL	S/S
32 NB med	32 Sch10
	2.8wt

\* 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 AS1657 requirements

### Notes:

To meet the requirements of AS1170 Table 3.3 C3 the stanchion spacing should not exceed 1.75m for the P units and 1.6m for S units.

To meet the requirements of AS1428 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.

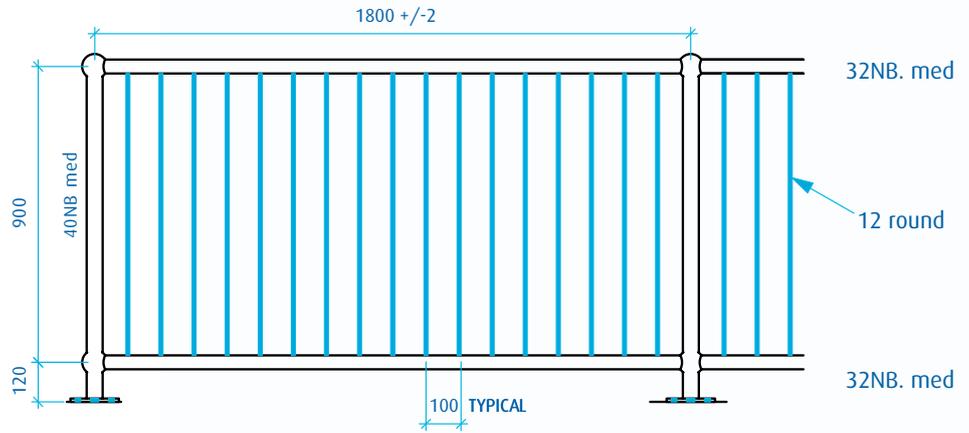
\* Not available in Aluminium

### BAL-1

#### Standard

32NB top / bottom rails  
12mm diameter rods.

s/s 32Sch10  
top/bottom rail



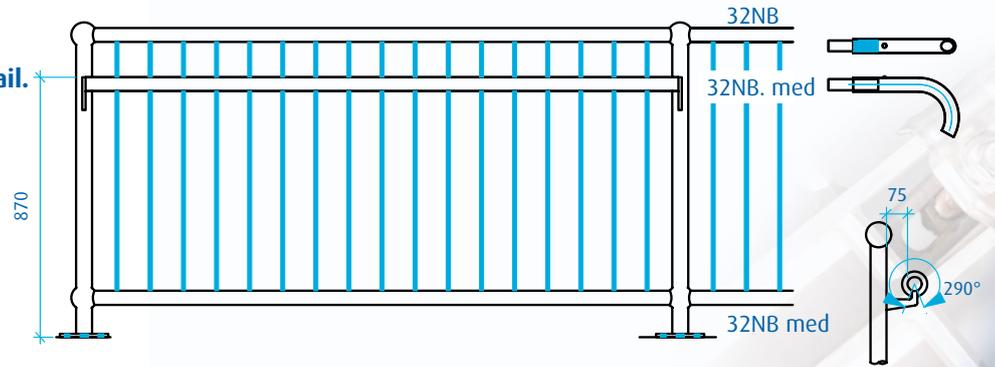
### AS1428 disability Balustrade with handrail.

#### BAL-1D

Disability barrier.

As for BAL-1, with the addition of extra raiiling to comply with requirements of AS1428.1 for disability access.

Additional rail may be applied to other balustrade types by suffix "D"

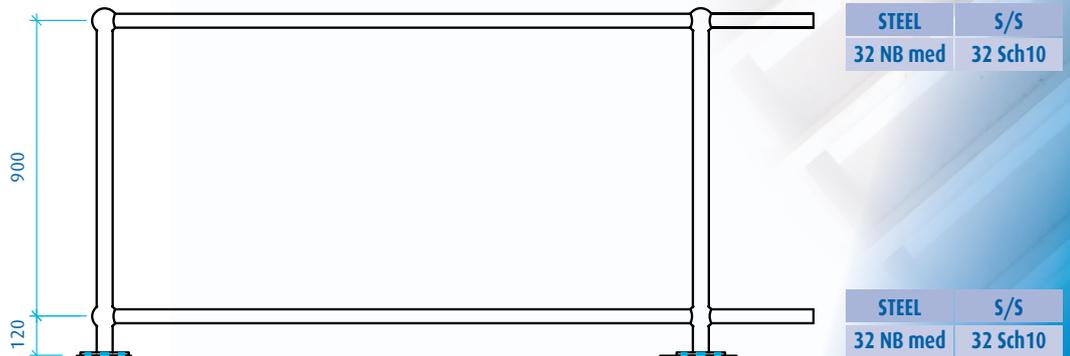


### Special balustrade

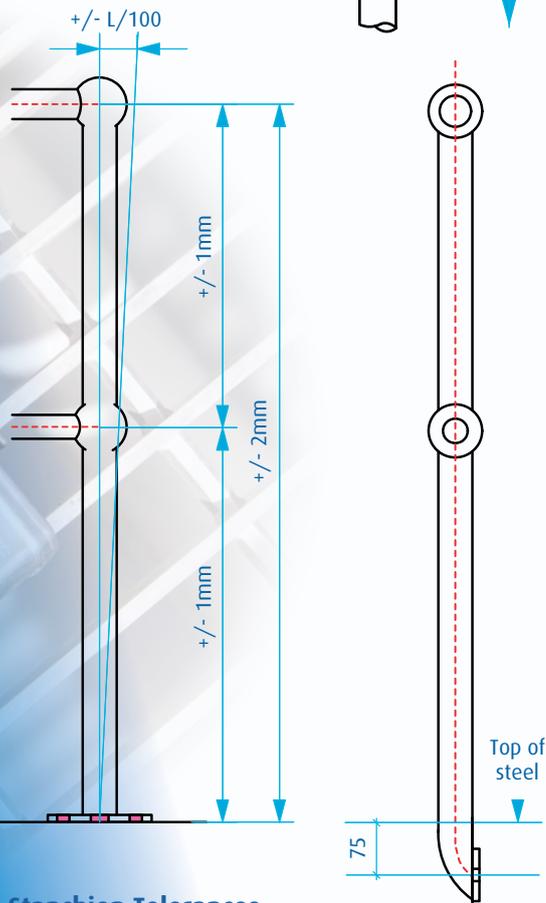
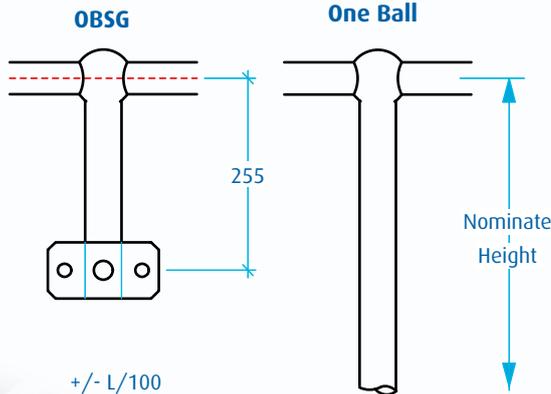
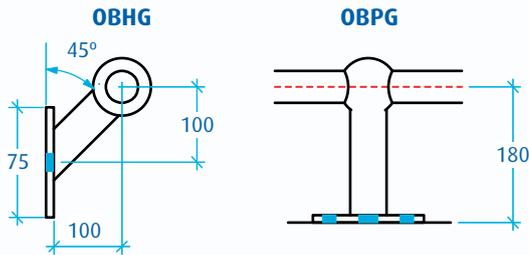
Balustrade can be manufactured with different infill, eg. Expanded Metal, Woven Wire, Perforated Metal etc.

### BAL-SP

- . Your choice of infill
- . Your choice of stanchion type



# Tolerances / Oneball Stanchions / Multi-ball



## Stanchion Tolerances

Height	+/- 2.0 mm in 1 metre
Angle Drilling	+/- 1.5 degrees
Base plate alignment:	+/- 2mm
Vertical alignment	+/- L/100
Sphere drilling	2 - 4 oversize

## One Ball Stanchions

(Note these do not meet AS1428 or A1657 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.

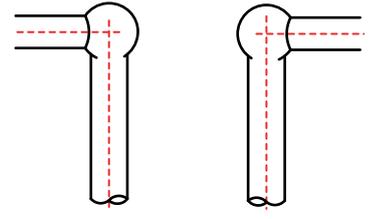
There are three handrail stanchion configurations as shown below:

(Note these do not meet AS1428 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.

The conventions used are as shown and are nominated when viewed from the walking surface.



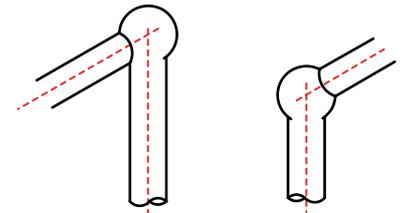
**DLSO**  
Drilled Left Side Only

**DRSO**  
Drilled Right Side Only

## Multi Ball Stanchions

(Note these do not meet A1657 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

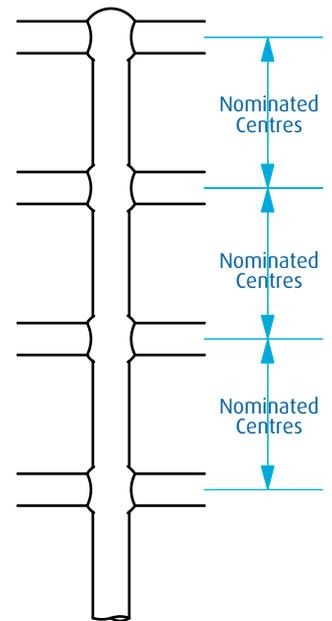
**DTSO**  
Drilled Top Side Only

## Preferred Drilling Dimensions

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

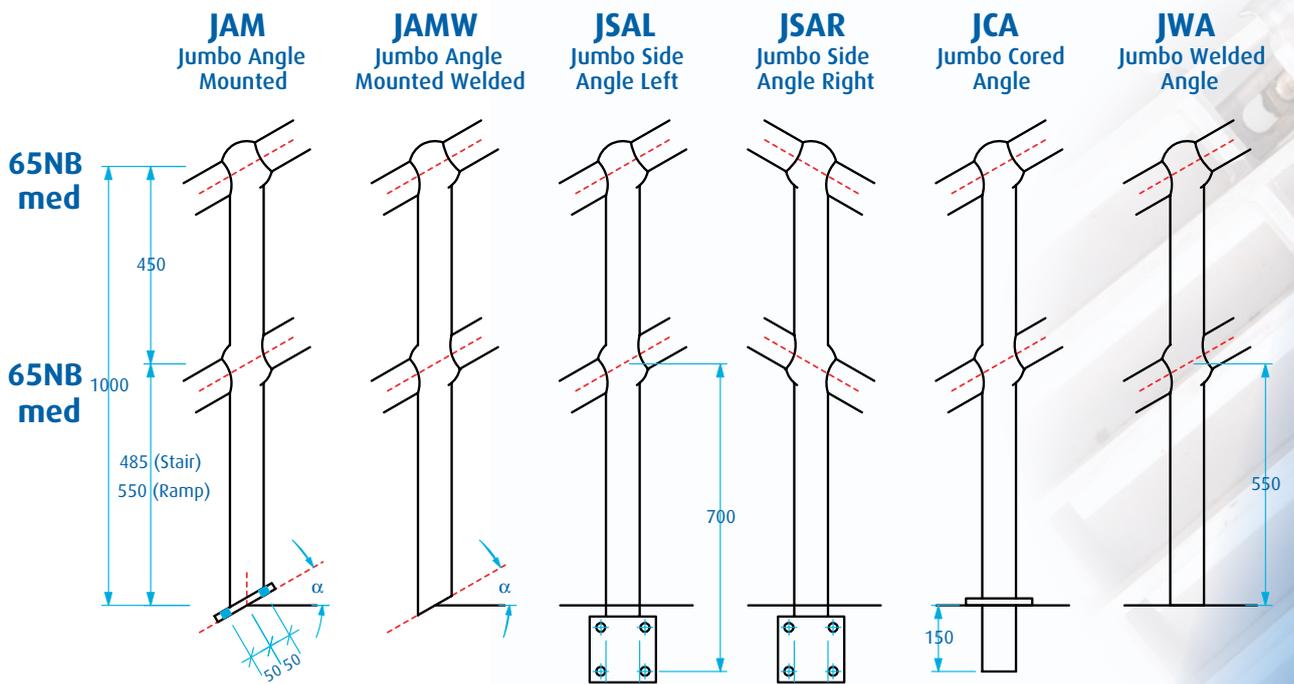
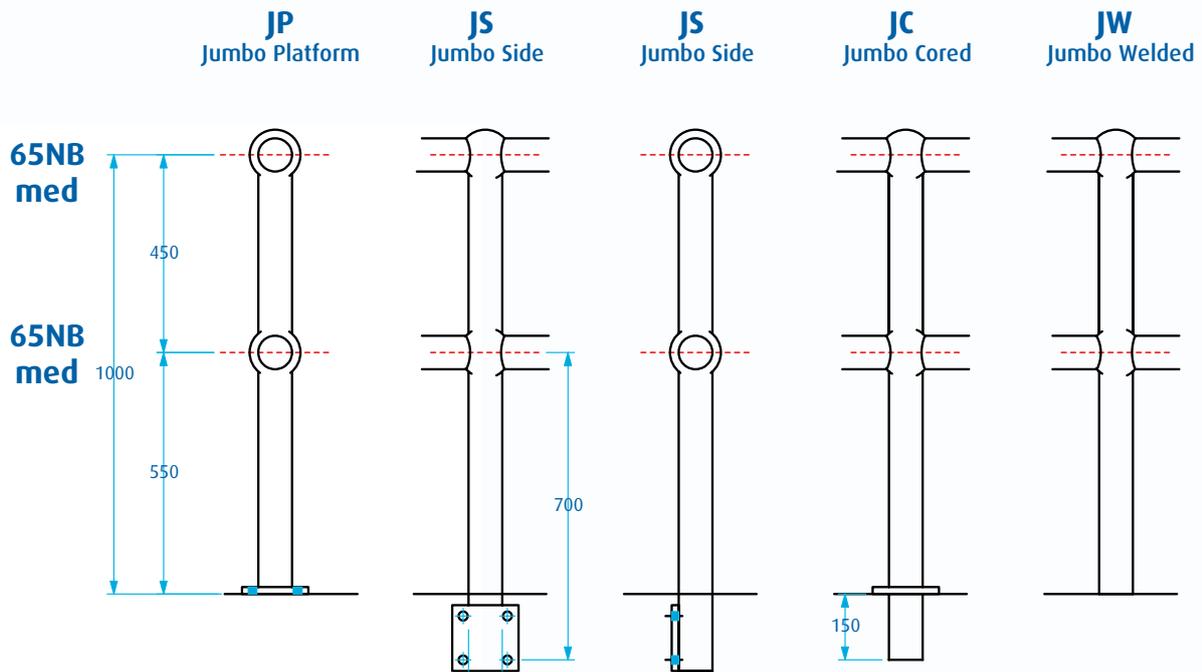
## Special Stanchion

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

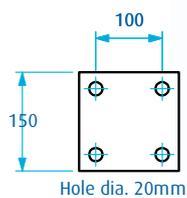


**Multi Ball**

# Jumbo Steel



## BASE PLATE



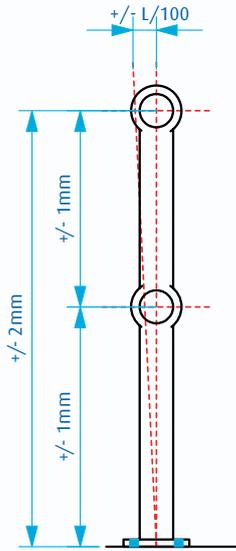
16mm Thick



A valmont COMPANY

# Jumbo Steel

## TOLERANCES



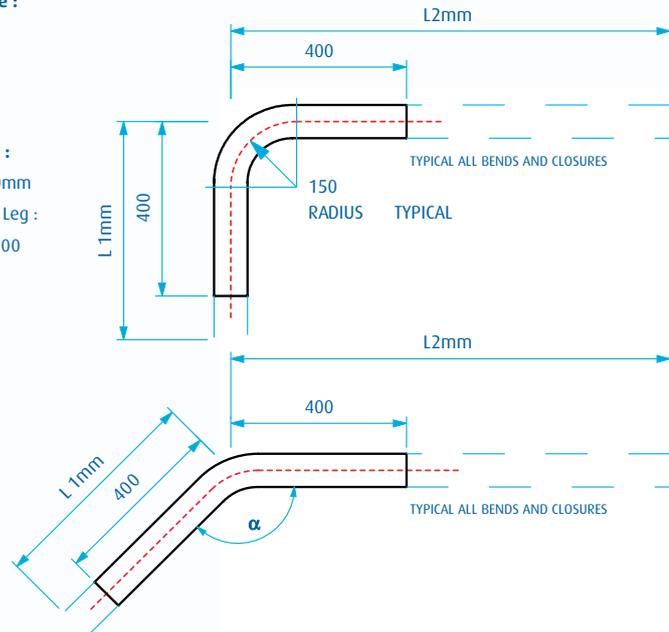
### Stanchions tolerances

Height	: +/- 2.0 mm in 1 metre
Angle drilling	: +/- 1.5 degrees
Base plate alignment	: +/- 1 mm
Vertical alignment	: +/- L / 100
Sphere drilling	: 2 - 4 oversize

## JUMBO RAIL BENDS (RB)

**Standard pipe :**  
65NB. 3.6 WT

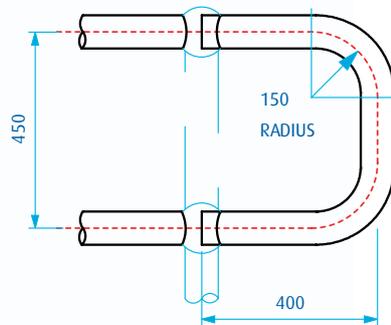
**Standard Leg :**  
400mm x 400mm  
**Non-standard Leg :**  
 $L1 + L2 < 6500$



## CLOSURES & BENDS

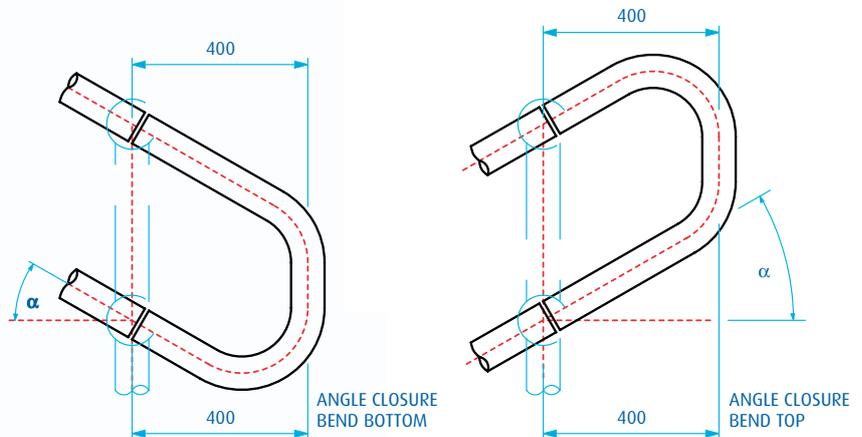
### Horizontal Closure Bends

Standard Pipe  
65NB. med.

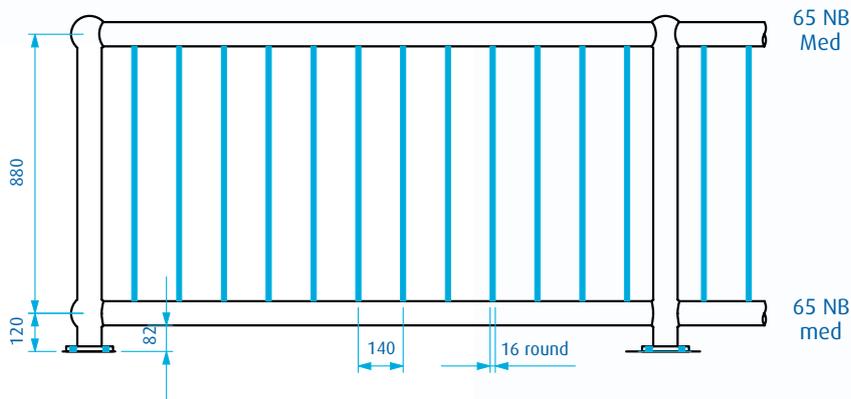


### Angle Closure Bends (ACB)

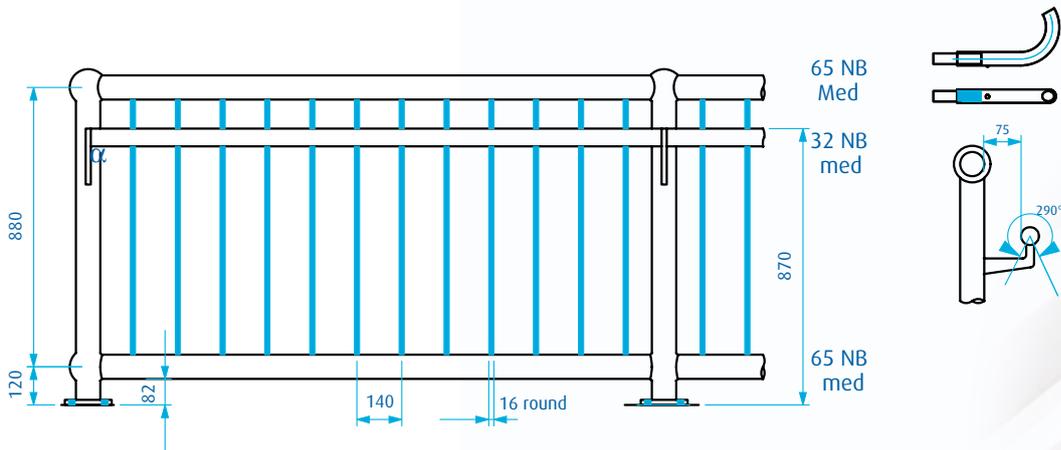
Standard Pipe  
65NB. med  
Available with  $\alpha$  value from 1° - 45°



## JUMBO BALUSTRADE



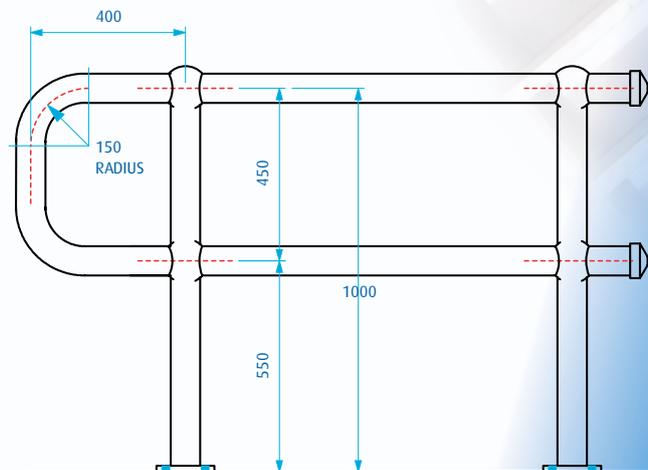
## JUMBO BALUSTRADE WITH DISABILITY HANDRAIL



## JUMBO PANEL

Showing Horizontal Closure Bend and End Caps

Jumbo stanchions Type JP.  
Handrail and kneerail 76.1mm O.D.



# 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.

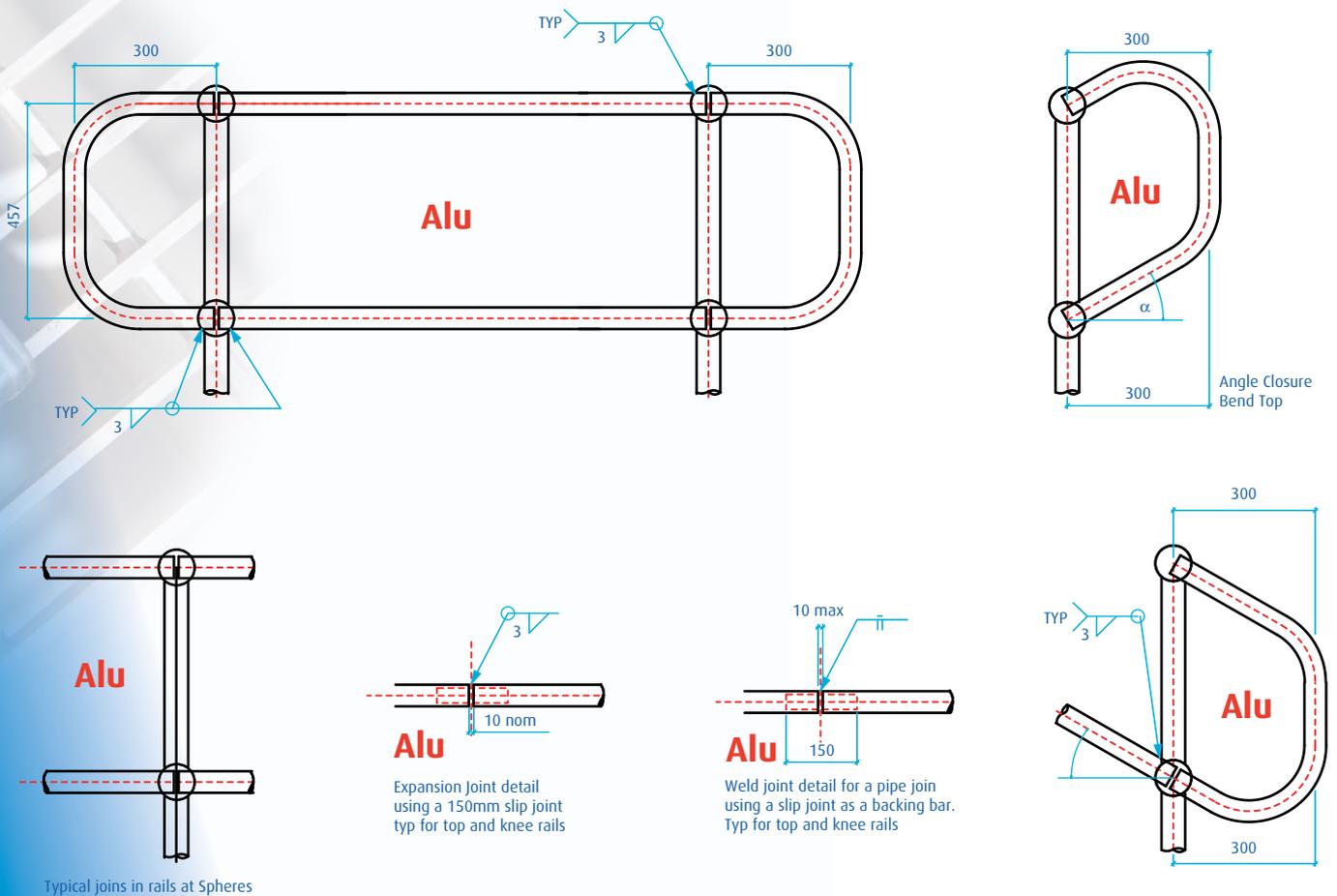
### Kickplate

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 joints in rails at Spheres

# 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

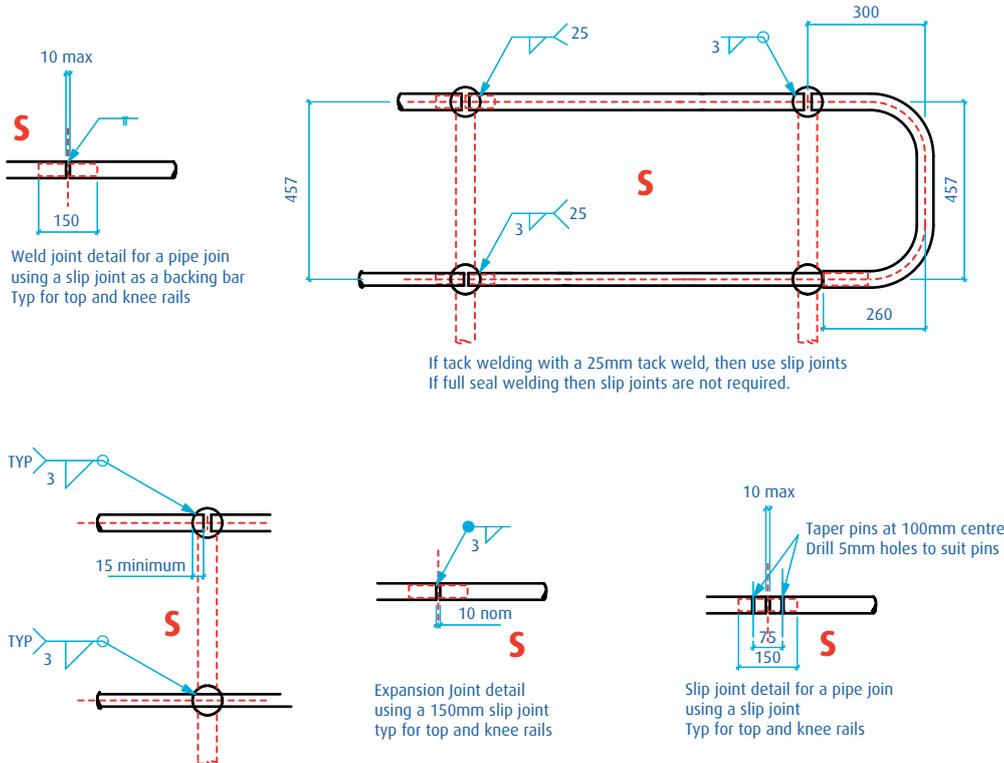
Balustrades are supplied in sections approximately 2m long. The end of one section fits into the stanchion on the next section. It is suggested that two sections are first erected as per Section 1 after which each section can be fitted.

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.

## Steel





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