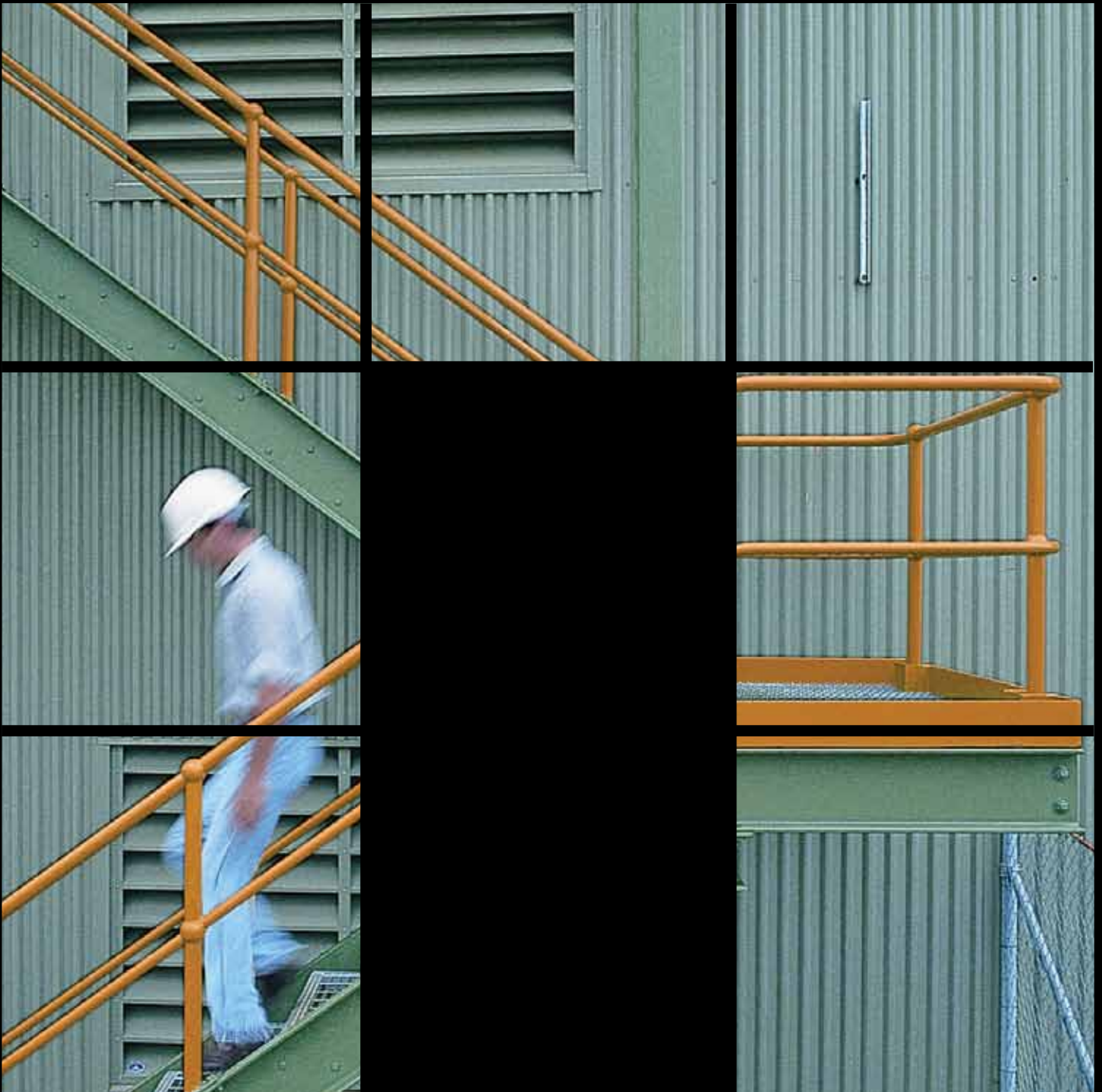


NEPEAN
Building &
Infrastructure

TM

Weldlok Balltube® Handrail



NEPEAN™ Building & Infrastructure

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

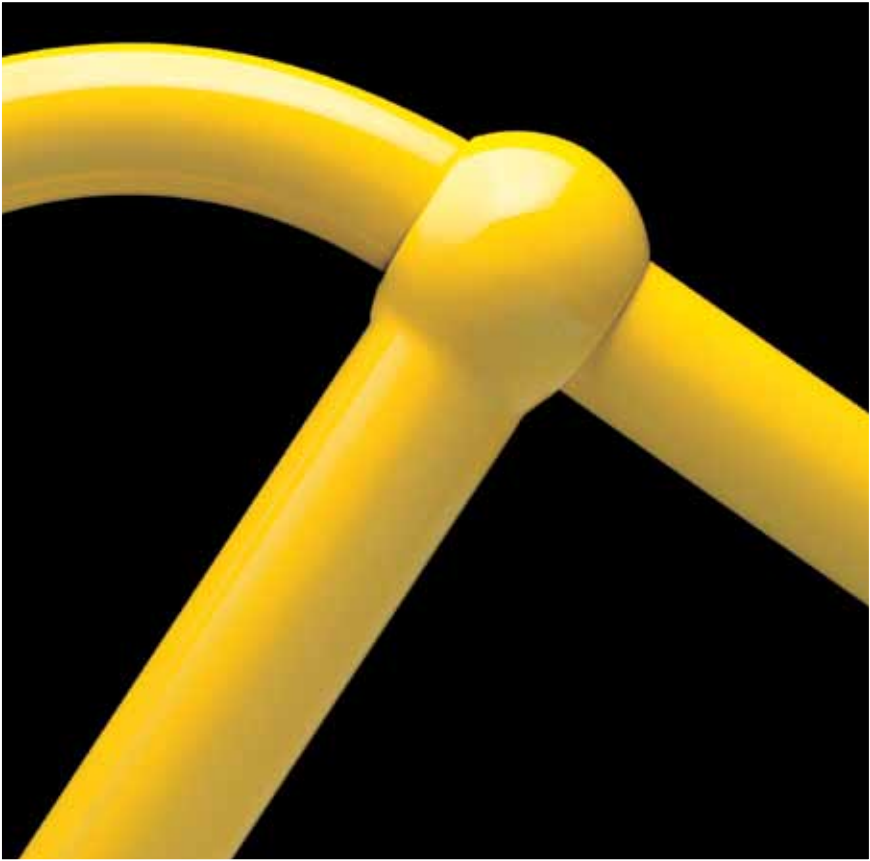
Through our renowned Weldlok® brand, NEPEAN Building & Infrastructure manufactures and supplies an extensive range of fabricated gratings and handrails.

These products include forgebar grating and walkways, specialist drainage grates, and handrail systems manufactured from steel and aluminium. We also supply walkway grating manufactured from fibre-reinforced plastic (FRP).

This brochure is designed to assist the architect, draughtsperson, engineer, fabricator and specifier in the correct selection of our Weldlok Balltube® steel handrail system.

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Weldlok Balltube® Handrail

WELDLOK BALLTUBE® HANDRAIL SYSTEM

Weldlok Balltube® Handrail

The Weldlok Balltube® Handrail System sets the standard for time and cost saving in the installation of walkways, stairs and ladders.

The modular Weldlok Balltube® system allows speedy erection and finishing, with a minimum of on-site welding, providing considerable savings in time and labour costs.

Components delivered to site include fully galvanised stanchions, rails, bends, kickplates, slip-joints, closures, etc., ready for trouble-free erection.

NEPEAN Building & Infrastructure's unmatched resources include the best modern equipment and manufacturing techniques, including a galvanising facility, all under one roof. These facilities are backed by advanced quality control systems and our team of experienced personnel, ensuring immediate response to customer needs, quick delivery and co-ordinated after-sales service.

We can also supply a total package, including Weldlok Balltube® Handrail System, forgebar gratings, stair treads and walkway modules.

The Weldlok Balltube® Handrail System is designed and manufactured to the requirements of Australian Standard AS1657-1992.



WELDLOK BALLTUBE® SPECIFICATIONS

Standard Duty Stanchions

Standard duty stanchions are manufactured from 40 NB tubing (48.3mm OD x 3.2mm wall thickness).

Heavy Duty Stanchions

Heavy duty stanchions are manufactured from 40 NB tubing (48.3mm OD x 4.0mm wall thickness).

Stanchion Pitching

Australian Standard AS1657:1992 recommends a maximum pitching of 2 metres for stanchions.

Stanchion Handing

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

Rails

Standard drilled openings on Balltube stanchions allow for a top rail of 32 NB (42.4mm OD) and a mid-rail of 25 NB (33.7mm OD). Hole sizes for 40 NB (48.3mm OD) and 20 NB (26.9mm OD) rails in either top rail or mid-rail positions are also available. Rails are supplied in medium gauge, with a maximum length of 6.5m.

Mega Ball Specifications (Refer page 10)

Standard Duty Stanchions – 65 NB (76.1mm OD x 3.6mm wall thickness).

Heavy Duty Stanchions – 65 NB (76.1mm OD x 4.5mm wall thickness).

Spheres – 125mm OD, to suit 76.1mm OD piping.

Rails – Same duty as stanchions. Supplied in 6.5m lengths.

Base Plates – 150mm x 150mm. Thickness 16mm. Holes 20mm OD.

Special Base Plates – Made to requirements.

Finish – Hot-dip galvanised or untreated.

Kickplate Mounting Brackets

Manufactured from 40mm x 40mm x 5mm angle x 85mm long, with two 14mm diameter slotted holes, to suit 100mm kickplate.

Kickplates

Standard kickplates are 100mm x 6mm in 6m lengths. Other sizes available on request.

Base Plates

All base plates (except BPAM type) are 75mm x 146mm x 10mm with 18mm diameter holes at 102mm centres. BPAM base plates are 65mm x 172mm x 10mm with 18mm diameter holes at 126mm centres. Note: Special base plates can be made to order.

Finish

Standard finish is hot-dip galvanised to AS/NZS4680:1999. Untreated finish available on request.

Specials

Variations on standard stanchions and fittings can be manufactured to individual requirements.

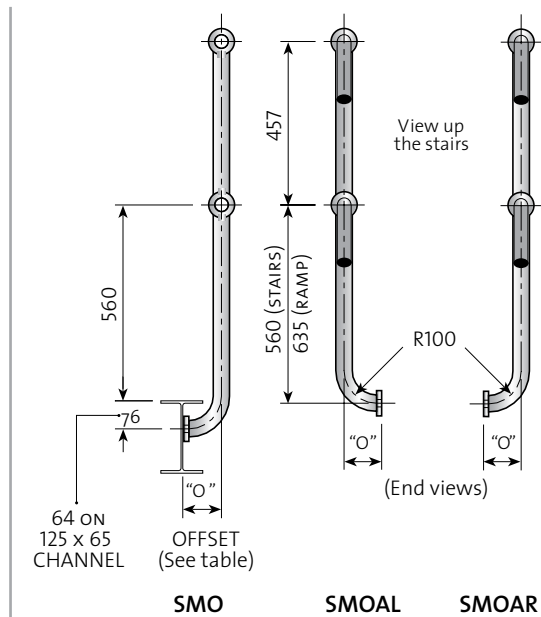
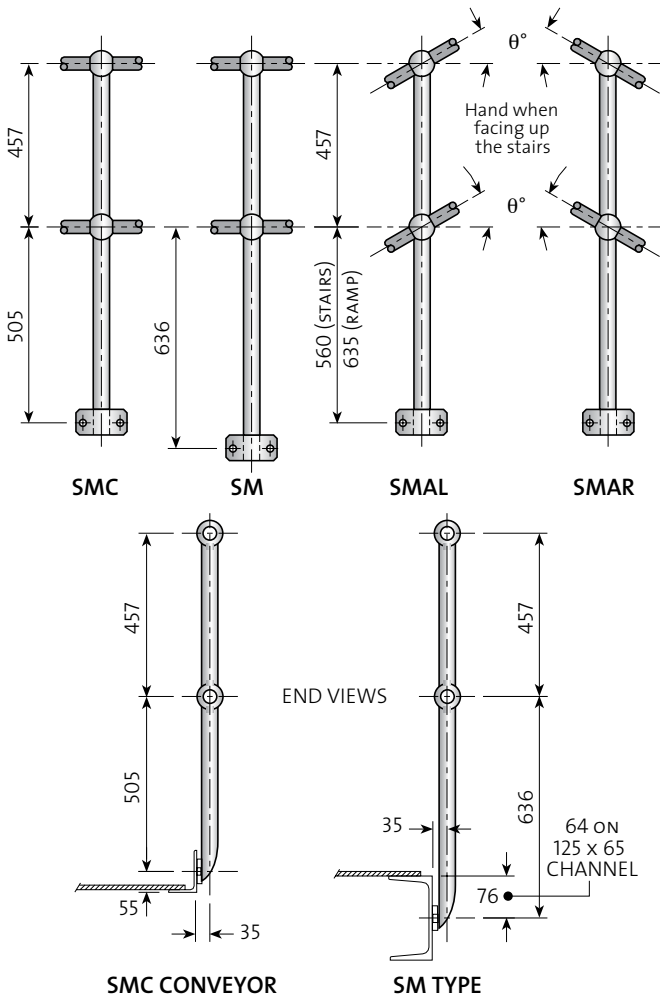
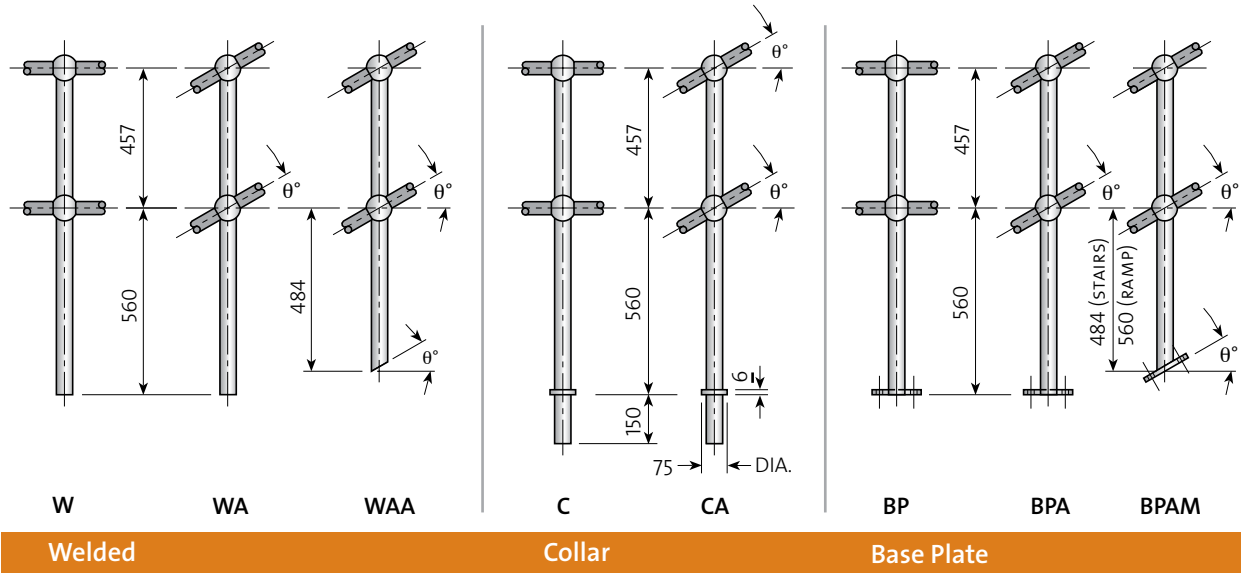


Installation Instructions

1. Loosely bolt stanchions to structure.
2. Feed top rails and mid-rail through ball joints.
3. Where top or mid-rails join, use slip joint.
4. Drill for taper pins. (Ensure the join is inside the ball unit, where possible.)
5. Tighten nuts and bolts on stanchions.
6. Run approximately 25mm (1 inch) of weld on side or top where ball units join top and mid-rails (not required when using tapered pins).
7. Bends and corners to be fully welded then ground and primed with zinc-rich paint.

WELDLOK BALLTUBE® COMPONENT DIMENSIONS

Weldlok Balltube® Standard Stanchions



Offset "O" (mm)

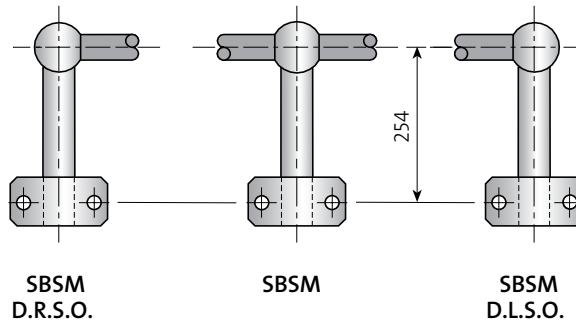
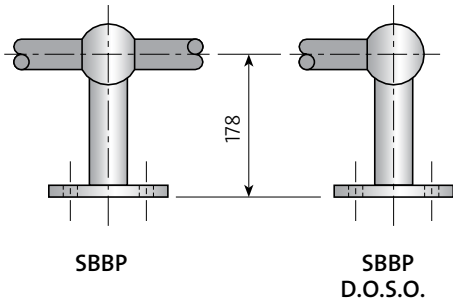
Channel	"O" offset	Universal Beam	"O" offset
125 x 65	110	200	110
150 x 75	110	250	110
180 x 75	110	310	120
200 x 75	110	360	125
230 x 75	110	410	125
250 x 90	125	460	135
300 x 90	125	530	140
380 x 100	135		

Side Mounted

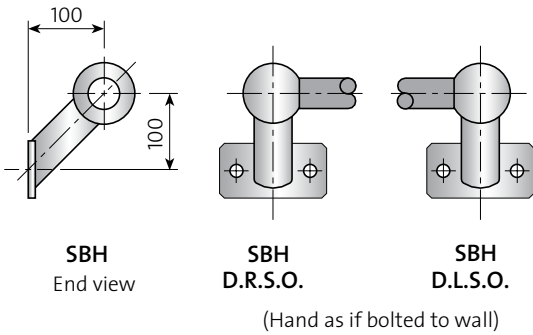
Side Mounted Offset

WELDLOK BALLTUBE® COMPONENT DIMENSIONS

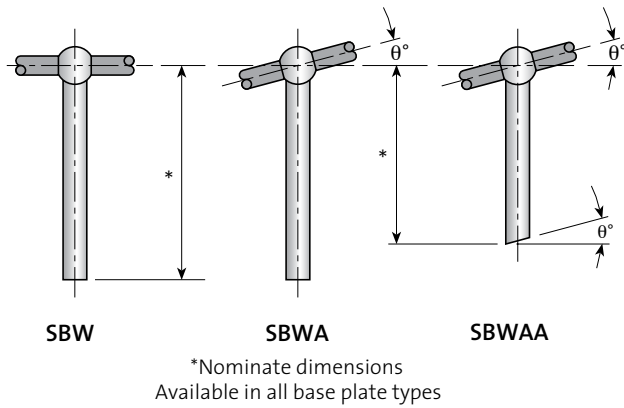
Weldlok Balltube® Standard Single Ball Stanchions



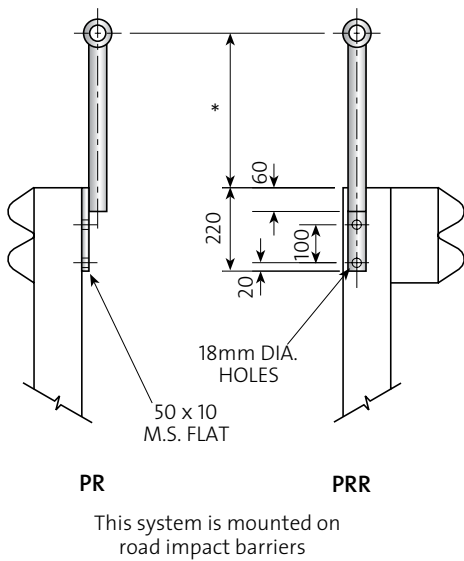
Single Ball Base Plate



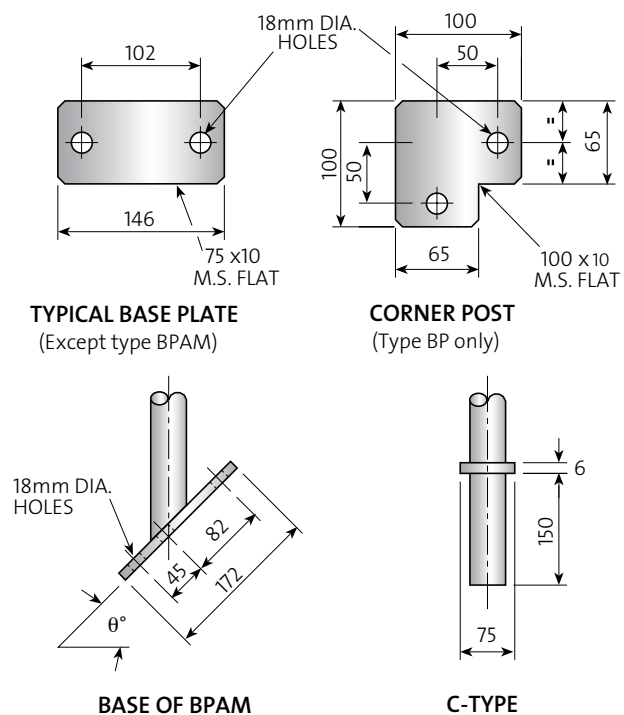
Single Ball Side Mounted



Single Ball Offset Handrail



Single Ball Welded

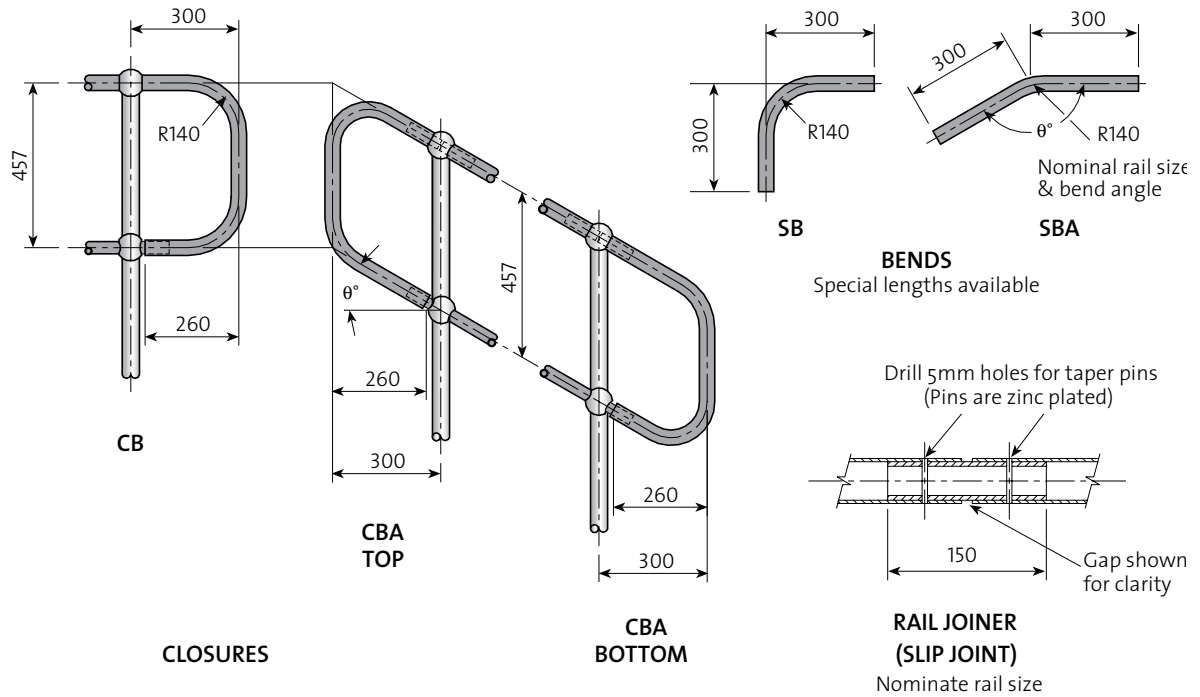


Personnel Handrail

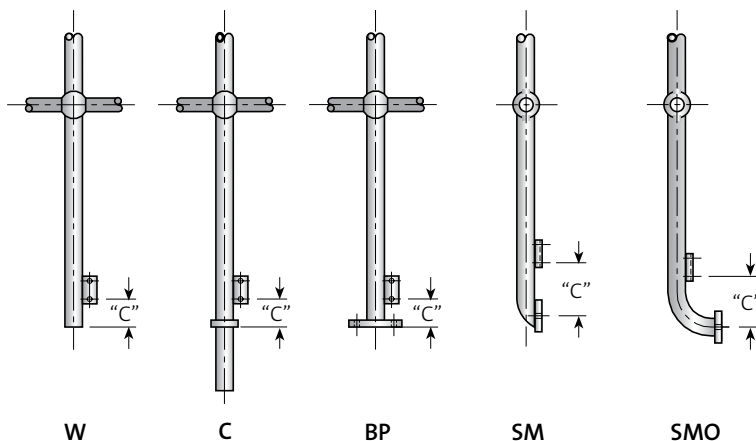
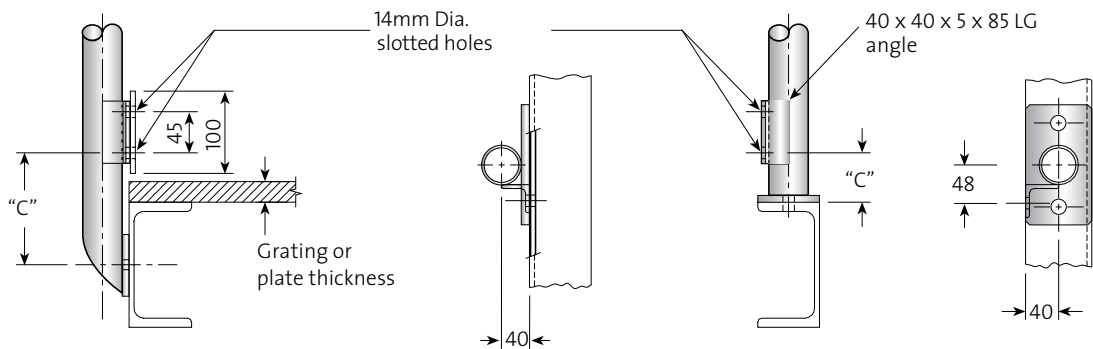
Standard Base Plates

WELDLOK BALLTUBE® COMPONENT DIMENSIONS

Weldlok Balltube® Standard Closures, Joiners and Bends



Weldlok Balltube® Kickplate Mounting Brackets



Dimension "C" (mm)

Type	"C" = Grating or Plate Thickness Plus
W	30
C	30
BP	30
SM	106*
SMO	106*

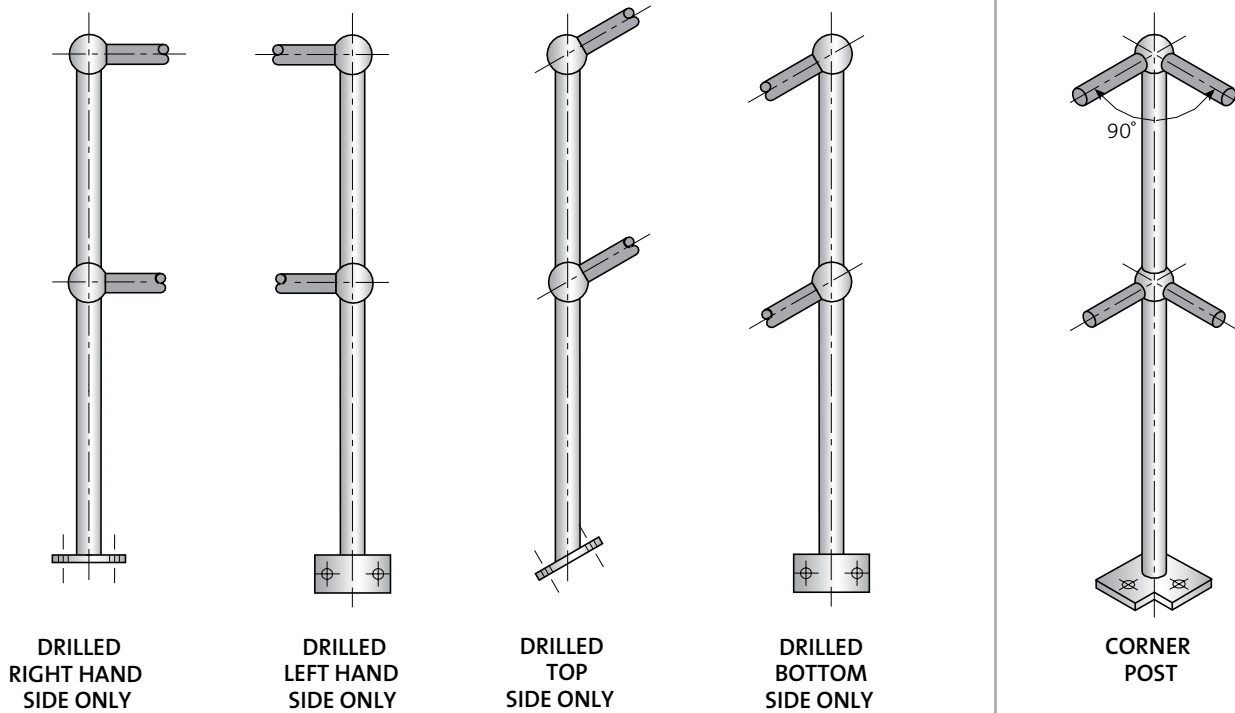
*94 when used on 125 x 65

Note: Kickplate mounting brackets are an optional extra

Example:
If grating is 25mm deep then "C" Dimension = 55mm for types W, C, & BP.

WELDLOK BALLTUBE® COMPONENT DIMENSIONS

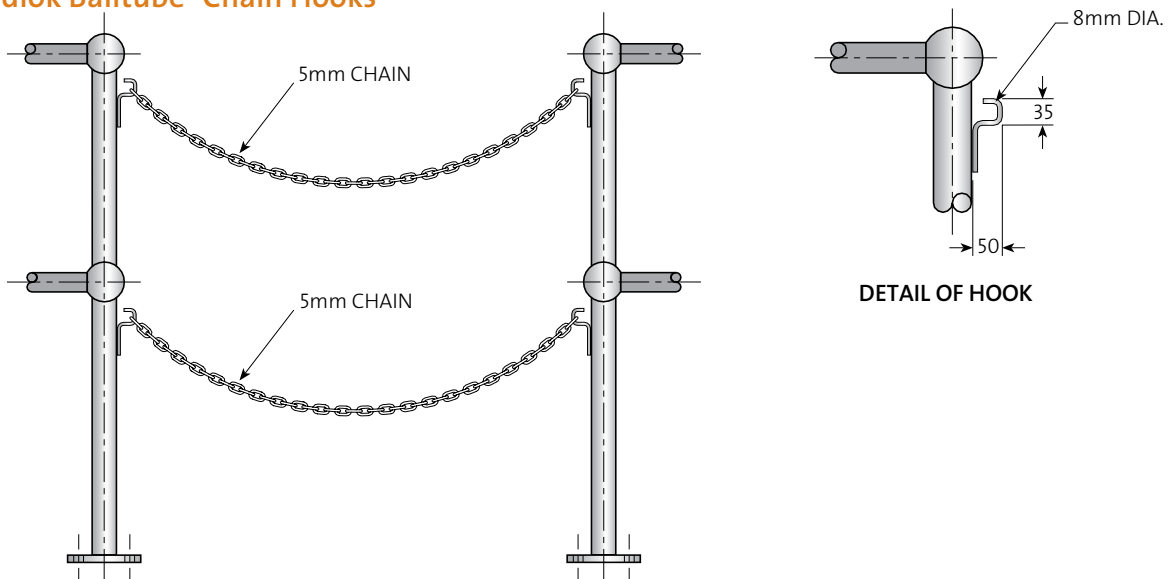
Weldlok Balltube® Special Drilling for Rails



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

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

Weldlok Balltube® Chain Hooks

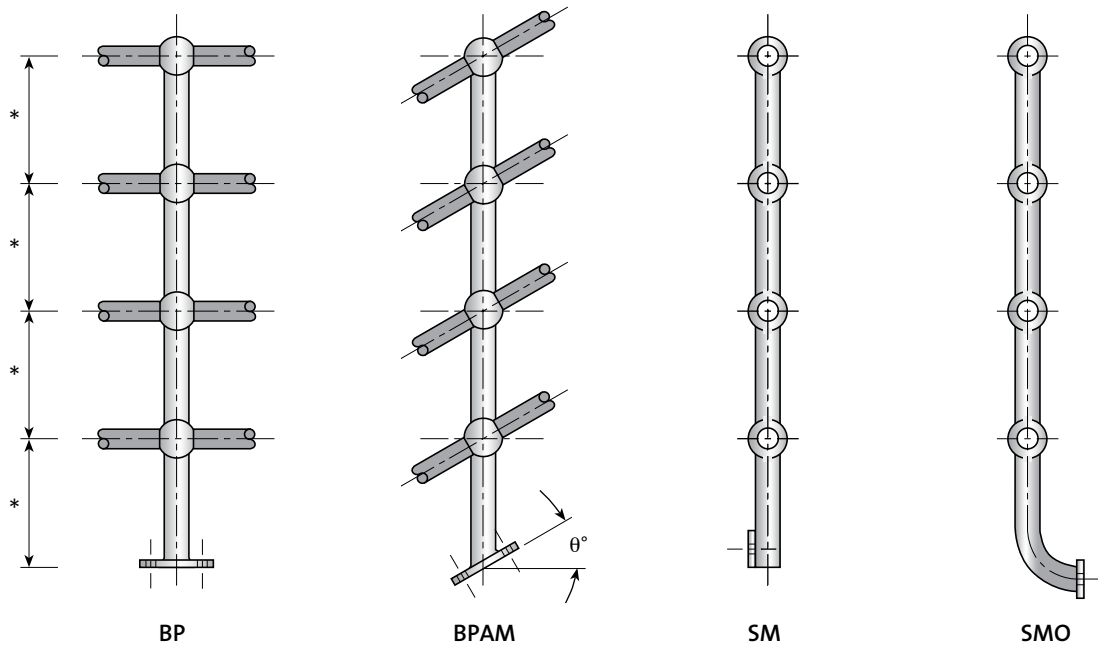


D.O.S.O. STANCHIONS WITH CHAIN HOOKS

Specify whether top rail only or both rails
5mm heavy duty chain available on request

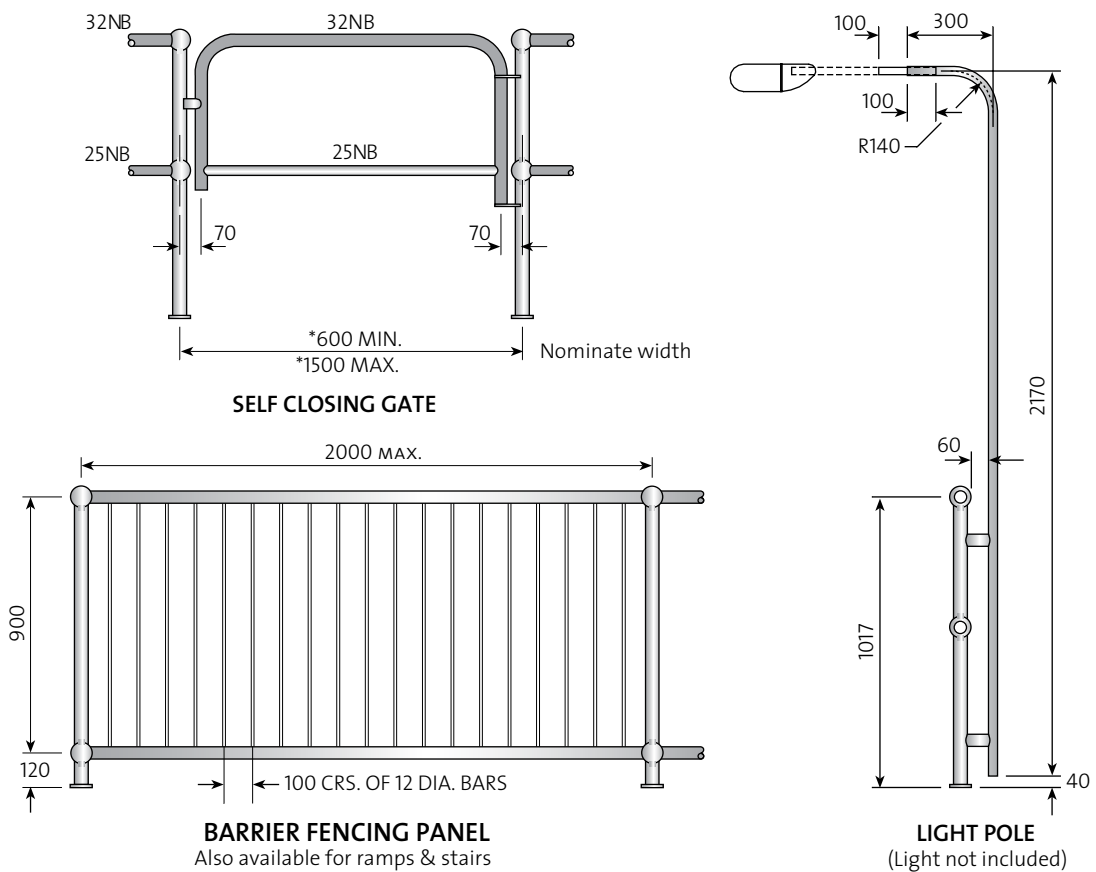
WELDLOK BALLTUBE® COMPONENT DIMENSIONS

Weldlok Balltube® Multi Ball Stanchions



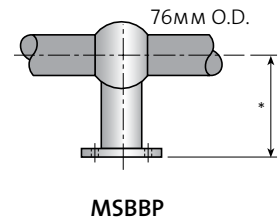
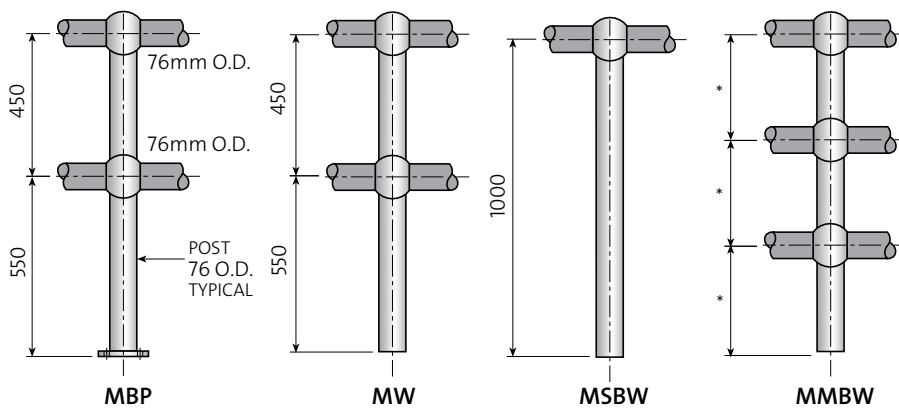
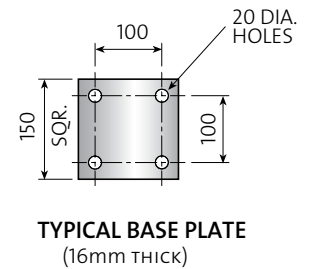
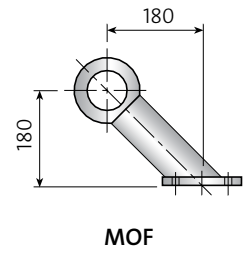
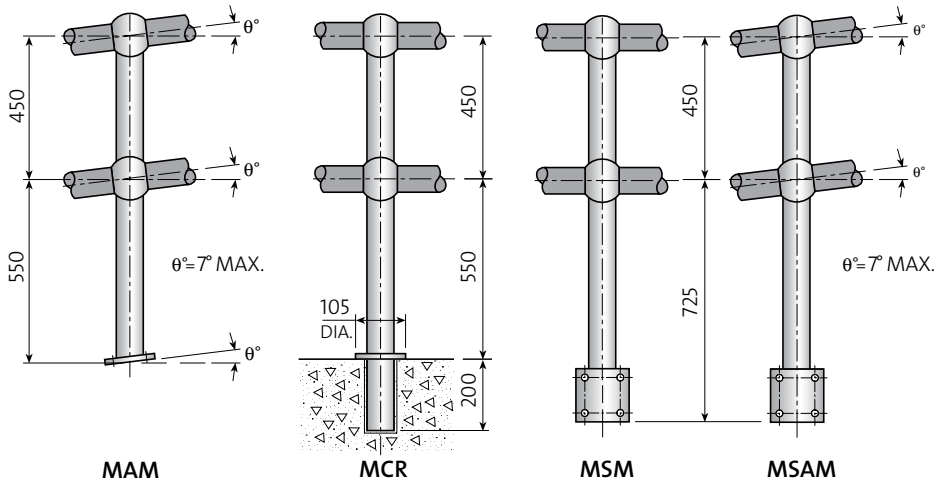
*Specify number of balls, pitching & height required of stanchion (150mm minimum centres)
Multi ball stanchions are available in any of the range of Balltube stanchion configurations

Weldlok Balltube® Handrail Accessories



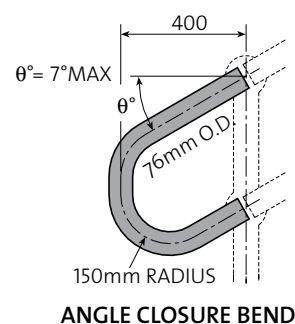
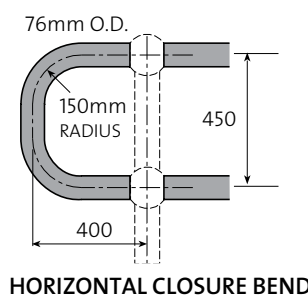
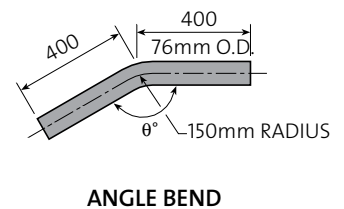
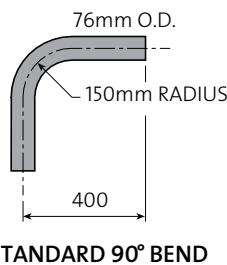
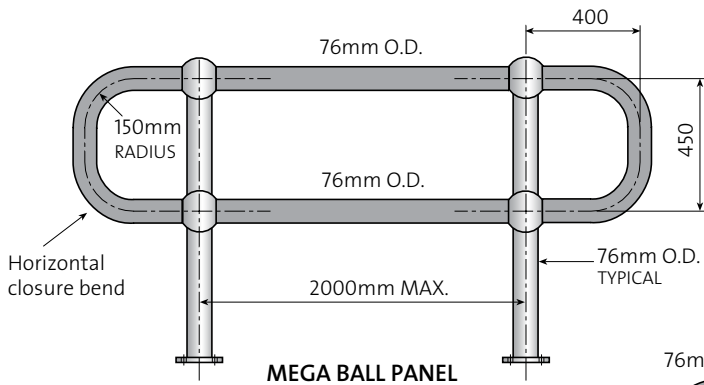
WELDLOK BALLTUBE® MEGA BALL COMPONENT DIMENSIONS

Weldlok Balltube® Mega Ball Stanchions



*specify number of balls, pitching & height required of stanchion (300mm min. centres)
*as required (180mm minimum)

Weldlok Balltube® Mega Ball Closures and Bends



WELDLOK BALLTUBE® HANDRAIL WEIGHTS

Weldlok Balltube® Stanchions

Type	3.2mm Wall Thickness	4.0mm Wall Thickness
BP	4.8kg	5.3kg
BPA	4.8kg	5.3kg
C	4.9kg	5.4kg
CA	4.9kg	5.4kg
W	3.9kg	4.4kg
WA-WAA	3.9kg	4.4kg
SM	5.0kg	5.6kg
SMO	5.3kg	5.9kg
SMA	4.9kg	5.4kg
SMC	4.9kg	5.4kg
SMOA	5.3kg	5.9kg
BPAM	4.5kg	5.0kg
SBW	3.9kg	4.4kg
SBWA	3.9kg	4.4kg
SBBP	1.7kg	2.0kg
SBSM	2.0kg	2.3kg
SBH	1.3kg	

Mega Ball Stanchions

Type	N.B.	Weight
MAM	65	11.50kg
MCR	65	10.50kg
MSM	65	12.65kg
MSAM	65	12.65kg
MBP	65	11.50kg
MW	65	8.70kg
MSBW	65	8.10kg
MOF	65	5.30kg
RAIL – Standard Duty	65	6.51 kg/m
RAIL – Heavy Duty	65	7.90 kg/m

Weights based on wall thickness of 3.6mm



Bends & Closures

Type	N.B.	Weight
SB, SBA	32	1.8kg
SB, SBA	25	1.4kg
SB, SBA	20	0.9kg
CB	32	2.8kg
CB	25	2.2kg
CBA	32	2.8kg
CBA	25	2.2kg

Rails & Kickplates

Type	Weight
32 N.B. Rail	3.2 kg/m
25 N.B. Rail	2.5 kg/m
20 N.B. Rail	1.6 kg/m
100 x 6 Kickplate	4.8 kg/m

The above weights for rails and bends are based on medium gauge pipe.

Ordering Information

Important When Ordering

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

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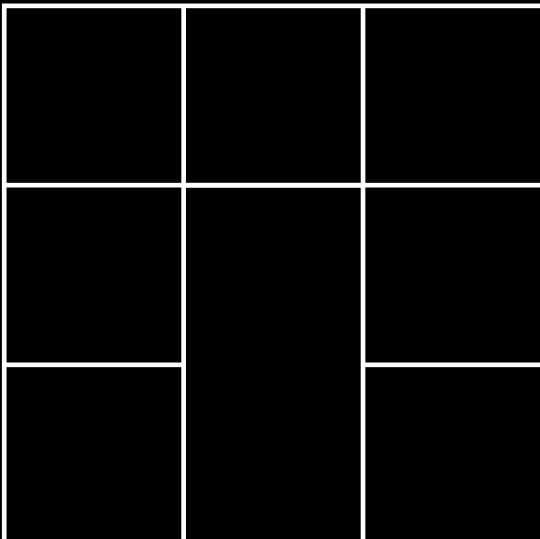
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