

RIGHTON

BLACKBURNS

PRO-RAILING®

The Stainless Steel Handrail Component System








COLOUR GUIDE

The colours in the tables will help you select your products material and finish. These will also be displayed in the page footer throughout this section. Products not colour coded will state their material or finish below the table.

	Grade 304 Stainless steel (Internal)
	Grade 316 Stainless steel (External)
	Zamac (Zinc aluminium alloy)
	Zinc coated steel
	Mild steel
	Galvanised steel
	Aluminium
	Duplex 2205 (Ultra marine stainless)

ICONS

Throughout this section there are various icons to help you with your product selection.

-  Diameter
-  Square Solid
-  Square Hollow
-  Handy tip for quicker and more effortless installation
-  Important note, please read

TESTED TO
BS 6180

UK standard for the
construction of barriers
in and around buildings

All stainless steel fittings are supplied in a satin polish finish grit 320. They can also be supplied in a mirror polish finish.

PRO-RAILING®



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THE STAINLESS STEEL HANDRAIL COMPONENT SYSTEM



Pro-Railing is a stylish, durable and cost effective stainless steel handrailing component system designed with ease of installation in mind.

The comprehensive range of components allows you to specify and install without the need for fabrication and maximises on-site flexibility for those changes that inevitably arise.

The system enables the most stylish of handrailing and balustrades to be constructed quickly and simply by the contractor. All you have to do is cut, glue or screw to create professional results every time.

Specifiers can be assured that component design and range flexibility mean installation by a competent installer is a straight forward process.

We offer a range of infill solutions using glass with glass clamps, wire rope, round bar and decorative bars. We can also manufacture infill panels incorporating perforated metal, wire mesh and wire rope netting.

Available in Type 304 and Type 316 to suit internal and external applications, you can be sure Pro-Railing quality and product care will provide stunning results.

**ALL FITTINGS ARE STAINLESS STEEL WITH 2mm
WALL THICKNESS UNLESS OTHERWISE STATED.**

**SATIN POLISH FINISH IS 320 GRIT
& MIRROR FINISH IS 800 GRIT.**

 **PRO-RAILING®**
The Stainless Steel Handrail Component System



PRO-RAILING®



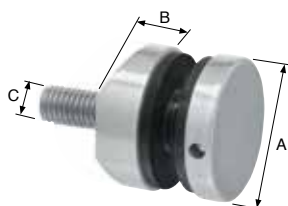
GLASS STAND-OFF ADAPTORS

FLAT BACK



GLASS ADAPTOR

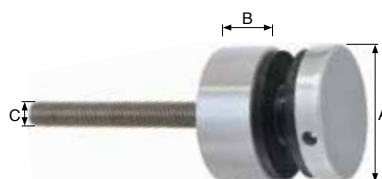
For use with round posts



Ø mm	(A) Ø mm	(B) mm	(C) mm	Glass mm	Glass Hole Size Ø mm	Code
42.4	30	15	8	6 - 12	15	1802404C
48.3	30	15	8	6 - 12	15	1802404D
42.4	50	10	10	8 - 19	22	1804454C
48.3	50	10	10	8 - 19	22	1804454D
42.4	30	15	8	6 - 12	15	1806404C
42.4	50	10	10	8 - 19	22	1806454C
48.3	30	15	8	6 - 12	15	1806404D
48.3	50	10	10	8 - 19	22	1806454D

SOLID

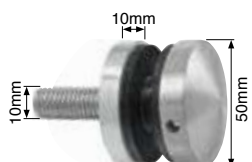
Flat front



(A) Ø mm	(B) mm	(C) Ø mm	Glass mm	Glass Hole Ø mm	Satin Polish Code	Mirror Finish Code
30	15	8	6 - 12	15	1802404F	—
30	15	8	6 - 12	15	1806404F	1806404FM
50	20	10	8 - 19	22	1806455	1806455M
50	30	10	8 - 19	22	1806456	1806456M
50	40	10	8 - 19	22	1806457	1806457M
50	50	10	8 - 19	22	1806458	1806458M

SOLID

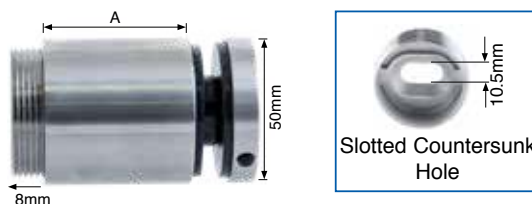
Domed front



Glass mm	Glass Hole Ø mm	Satin Polish Code	Mirror Finish Code
8 - 19	22	1804454F	—
8 - 19	22	1806454F	1806454FM

ADJUSTABLE HOLLOW

Flat front



(A) mm	Glass mm	Glass Hole Ø mm	Satin Polish Code	Mirror Finish Code
20	12.76 - 17.50	26	1806459	1806459M
30	12.76 - 25.50	26	1806460	1806460M
40	8.00 - 25.50	26	1806461	1806461M
50	8.00 - 25.50	26	1806462	1806462M

Fixing bolt not supplied. Use code: 1899006112.

SPANNER



To Suit Ø mm	Code
30 - 50	189900104

INTERNAL THREADED ANCHOR

For use with adjustable stand-off adaptor (above)



Description	Thread Ø mm	Drill mm	Hole Ø mm	CE	Code
Internal Threaded Anchor	10	110	18	✓	1899006112

Overall length of Internal Threaded Anchor is 90mm. Usable thread length is 23mm.

GLASS STAND-OFF ADAPTORS

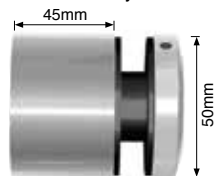


PRODUCT FEATURES:

- Through glass adjustment 8mm after glass fitted
- Up to 12mm multi-directional adjustment on wall
- No need to access behind glass once fitted
- No grub screws for smooth bind free assembly
- Ultra slim 1 piece head design model
- Saves time on installations

ADJUSTABLE STAND-OFF

With multi adjustment



Glass mm	Glass Hole Ø mm	Satin Polish Code
10 - 21.52	24	1806463

Up to 8mm adjustment from wall. Requires M10/12 threaded rod for wall, code: **1899006124**.

ADJUSTMENT TOOL



Code
189900105

LAG SCREW

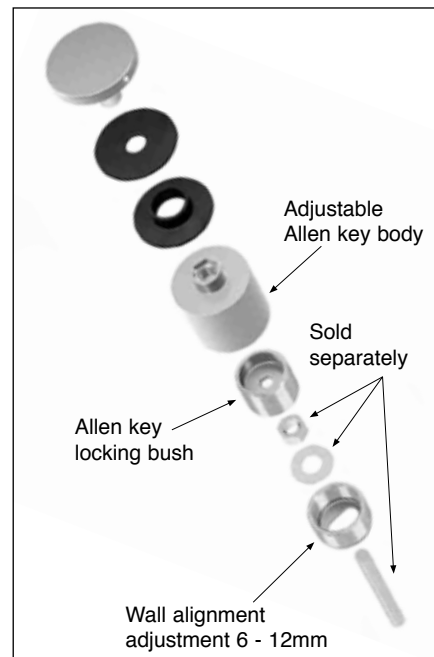
With Allen key head



Size mm	Code
M 12 x 120	1899006124

Please order nut code: **189900639** and washer code: **189900633**.

EXPLODED VIEW



WALL ALIGNING ADJUSTMENT 6 - 12mm

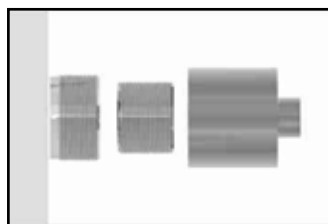


Adjust wall mount to get more alignment.

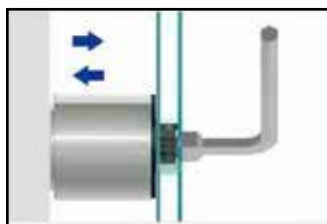


Use washer and nut to set up the wall mount. Nut code: **189900639**. Washer code: **189900633**.

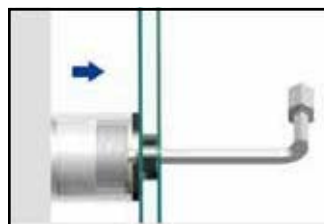
HORIZONTAL ADJUSTMENT FROM WALL



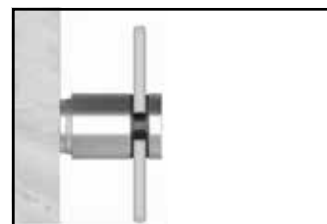
Fit locking bush to end and fit body by winding around 2mm off wall.



Align bodies by winding in or out by adjusting tool.



When aligned use adjusting tool to wind out the locking bush to the end of align body to make fast.



Up to 8mm glass adjustment from the wall. All horizontal glass adjustments can be made with glass installed.

GLASS CONNECTOR

DOMED FRONT & BACK



Ø mm	Glass mm	Code
50	12 - 20.5	1806454





FEATURES:

- Economic frameless glass solution
- For use with 10 - 21.5mm glass
- Duplex 2205 (ultra marine stainless) option, stronger & reduced cleaning frequency when compared to Grade 316

DUPLEX ROUND SPIGOT

No holes in glass needed



Not structurally tested

Finish	Code
Satin	1822009
Mirror	1822009M

To suit 12 - 15mm glass.

GRADE 316 COVER PLATE

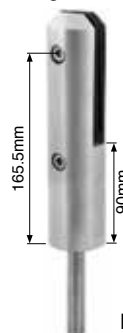
To suit duplex round spigot



Finish	Code
Stainless	1822009CP
Mirror	1822009MCP

GRADE 316 ROUND SPIGOT

Holes in glass needed



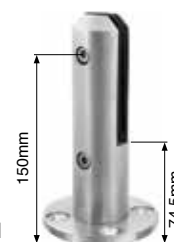
Not structurally tested

Glass Thickness mm	Code
10 - 12	1806230

Supplied with M16 x 300mm threaded length. To be used with drilled glass. Height to glass from base is 90mm.

GRADE 316 ROUND SPIGOT

Holes in glass needed



Glass Thickness mm	Code
10 - 15	1806231

To be used with drilled glass. Height to glass from base is 74mm.

SQUARE SPIGOT

No holes in glass needed



Glass Thickness mm	Code
12 - 21.52	1822010

Supplied with nut socket. To be used with M12 threaded fixing.

PACKING SHIM

No holes in glass needed



Code
1822010S

Thickness 3mm.

ROUND SPIGOT

No holes in glass needed



Description	Glass Thickness mm	Code
Round spigot	10 - 21.5	1822007
Cover plate	—	1822007CP

Height to glass when packer fitted is 45mm.

LOCATOR NUT

For use with cover plate



Thread Ø mm	Code
M12	1829012N

Excess thread to be cut off after installation.

SQUARE SPIGOT

No holes in glass needed



Description	Glass Thickness mm	Code
Square spigot	10 - 21.5	1822008
Cover plate	—	1822008CP

Height to glass when packer fitted is 45mm.

COVERED LOCATOR NUT

For use instead of cover plate



Thread Ø mm	Code
M12	1829012DN

Hides bolt thread under nut.

RESIDENTIAL BALUSTRADE SOLUTION

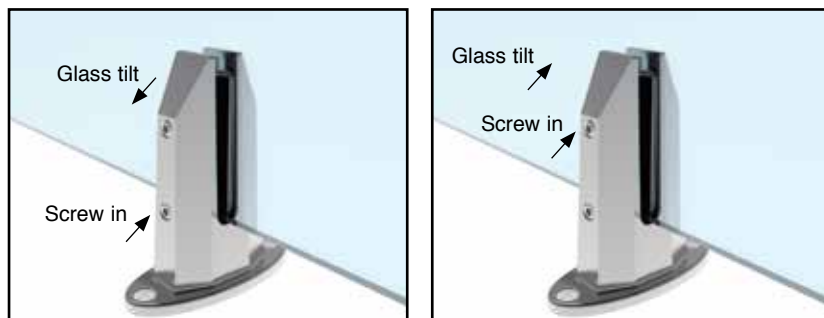


FEATURES:

- Duplex 2205 (ultra marine stainless)
- Satin polish
- New adjustable tilt-lock technology
- Adjustment from one side

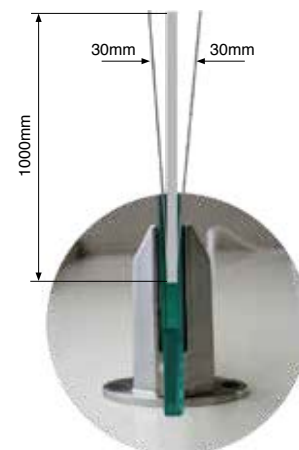
SPIGOT
SPECIALIST

TILT-LOC™ TIGHTENING



Level by hand and tighten the grub screws once in position for a perfect finish in half the time compared to a standard non adjustable spigot. The Tilt-Loc™ system can easily be hand adjusted from one side by one person.

TILT-LOC™ ADJUSTMENT



TILT-LOC™ - BOLT DOWN



Glass mm	Height to Glass with Packer mm	Code
12 - 17.52	51	1822001
19 - 25.52	46	1822002

TILT-LOC™ - SIDE



Glass mm	Height to Glass with Packer mm	Code
12 - 17.52	39	1822003
19 - 25.52	44	1822004

TILT-LOC™ - EDGE



Glass mm	Height to Glass with Packer mm	Code
12 - 17.52	43	1822005
19 - 25.52	43	1822006

Cover plate included.

Rattling cover plate?
Just add a dab of
silicone, see page 67.



NUT SOCKET

For use with Tilt-Loc™ - Side



Code
1829002

ALIGNMENT GAUGE

For use with Tilt-Loc™ - Side



Code
1829001



BALUSTRADE SYSTEMS

- Systems to suit 10 - 25mm glass
- Aluminium, anodised aluminium or mill/raw
- Side or base-fix options
- Adjustable for ease of use
- Satin finish
- Tested to British Standards



WEDGE-LOC® SLIM
See page 10



PANELGRIP®
See page 12



TILT-LOC™
See page 14

PRO-RAILING®

FOR OUR FULL RANGE OF TOP RAIL SYSTEMS SEE PAGE 16.

WEDGE-LOC™ SYSTEM



SLIM CHANNEL

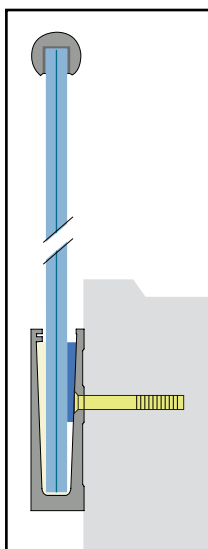


FEATURES:

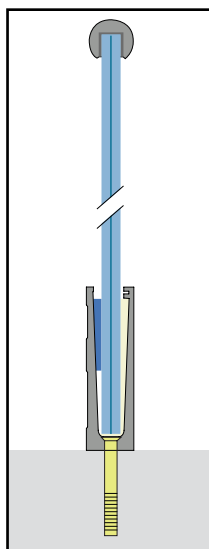
- Satin anodised finish
- Stainless cladding not required
- Great value
- Quick to install
- Pre-drilled channel fixing holes
- Height to glass when packer fitted is 13mm
- Packer height 2mm

INSTALLATIONS

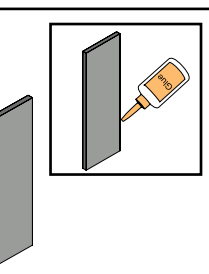
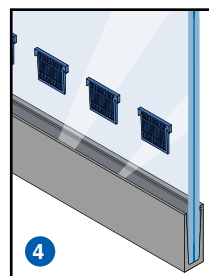
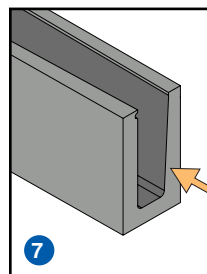
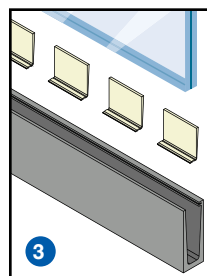
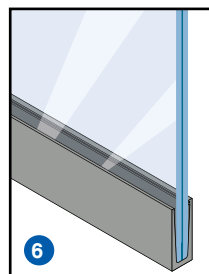
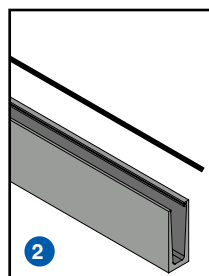
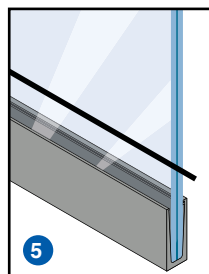
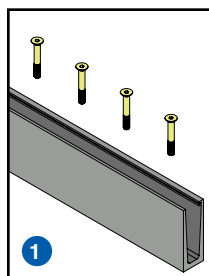
BASE FIX INSTALLATION:



SIDE FIX



BASE FIX



We recommend using a Fischer High Performance Anchor countersunk screw for the channels code: **1899006121**.



CAN BE USED IN CONJUNCTION WITH OUR TOP RAIL SYSTEMS, PLEASE SEE PAGE 16.



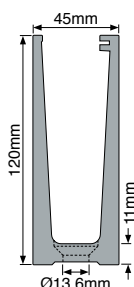
PRO-RAILING®



WEDGE-LOC™ SYSTEM

SLIM CHANNEL

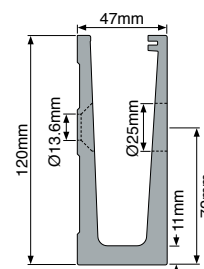
BASE FIX CHANNEL



Glass Thickness mm	Length m	Code
12 - 21.5	2.5	1805440BSA
12 - 21.5	5.0	18054405BSA

Channel fixing holes are Ø 13.6mm at 100mm centres to suit a Ø 12mm bolt with a Ø 22mm countersunk head. Height to glass when packer fitted is 13mm. Anodised.

SIDE FIX CHANNEL



Glass Thickness mm	Length m	Code
12 - 21.5	2.5	1805440SSA
12 - 21.5	5.0	18054405SSA

Channel fixing holes are Ø 13.6mm at 250mm centres to suit a Ø 12mm bolt with a Ø 22mm countersunk head. Height to glass when packer fitted is 13mm. Anodised.

INTERNAL 90° CORNER

For use with base fix channel



Code
1805440BIC

Inside length 155mm each side.
Outside length 200mm each side.

EXTERNAL 90° CORNER

For use with base fix channel



Code
1805440BEC

Inside length 155mm each side.
Outside length 200mm each side.

INTERNAL 90° CORNER

For use with side fix channel



Code
1805440SIC

Inside length 155mm each side.
Outside length 200mm each side.

EXTERNAL 90° CORNER

For use with side fix channel



Code
1805440SEC

Inside length 155mm each side.
Outside length 200mm each side.

GASKET SET



END CAP



PLUG

For side fix channel



WEDGE INSERTION & REMOVAL TOOL



Glass Thickness mm	Code
12.00 - 12.76	180544112
13.52	180544113
15.00	180544115
16.76	180544116
17.52	180544117
19.00	180544119
20.76	180544120
21.50	180544121

Supplied with rubbers and wedges.
To suit 2.5m long channel.

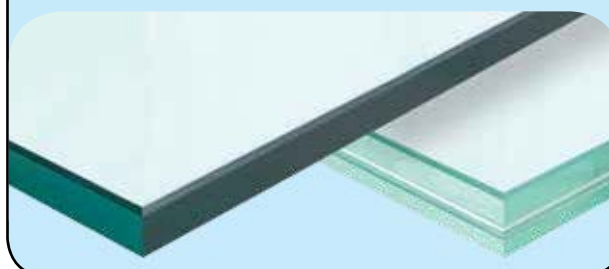
Code
1805442E

Code
1805444PP

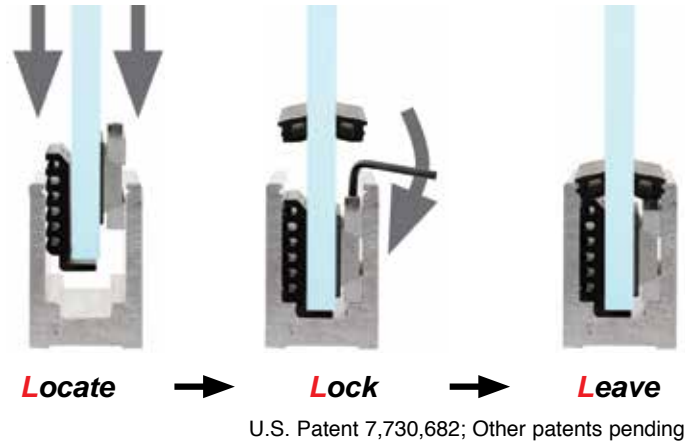
Plastic.

Code
180599001

**FOR OUR FULL RANGE OF
GLASS PANELS SEE PAGE 72.**



PANELGRIP® SYSTEM



The PanelGrip® System utilises a unique locking mechanism of high-strength aluminium and PVC isolators combined with a specially designed aluminium shoe moulding. When assembled with 15 - 21.5mm tempered monolithic or tempered laminated glass, PanelGrip® enables the installer to fabricate a structural glass railing system with a significant reduction in labour.

THE BENEFITS OF PANELGRIP ARE:

• ADJUSTABLE

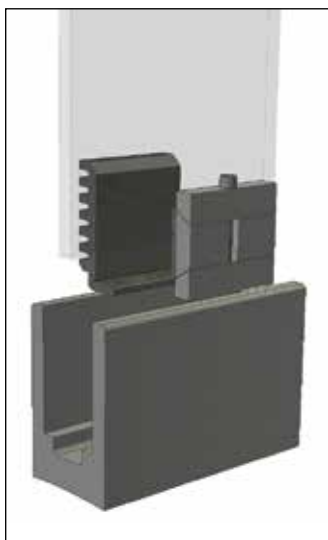
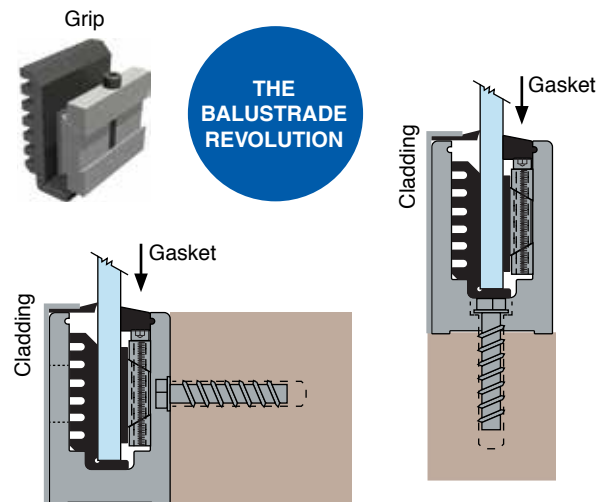
The PanelGrip® design enables the system to be simply adjusted and readjusted when installed

• REDUCE LABOUR COSTS

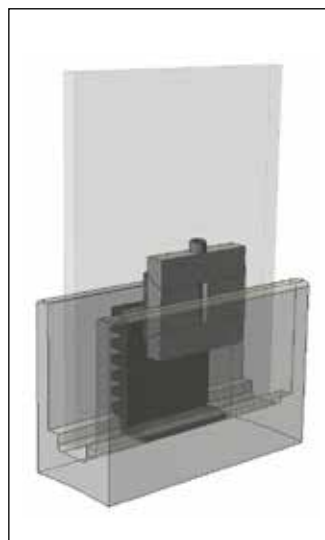
No sealing of the shoe, no setting blocks, no plumbing of glass, no multiple pours of cement, no waiting for cement to cure; no messy clean-up

• SIMPLE INSTALLATION

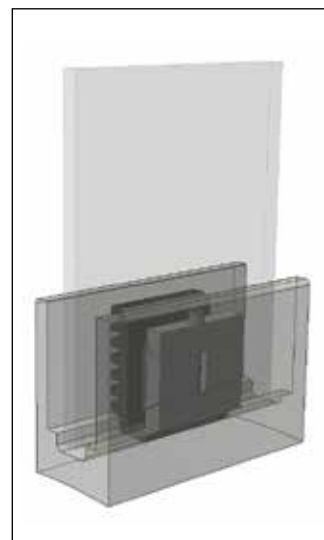
All you need is an Allen key for installation or removal of glass



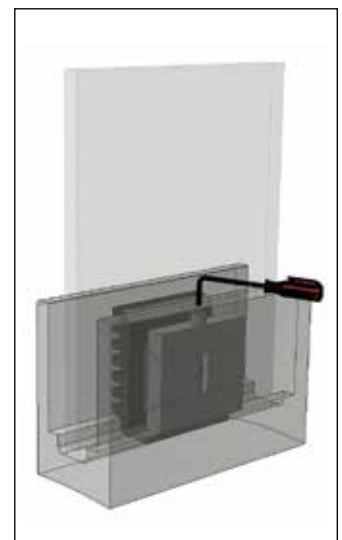
1 Place Dry Mount Grips into shoe moulding



2 Insert PanelGrip on the opposite side



3 Tighten PanelGrip mechanism



4 Confirm alignment and fully tighten

PRO-RAILING®



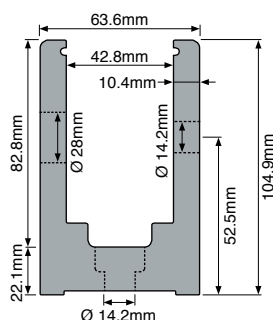
PANELGRIP® SYSTEM

CHANNEL



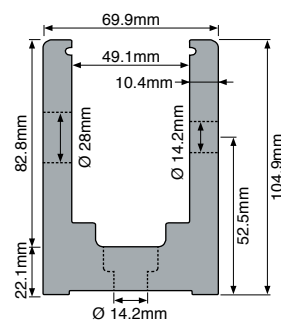
460 SERIES

Suitable for 12 & 15mm glass



466 SERIES

Suitable for 17.5, 19 & 21.5mm glass



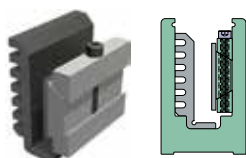
Fixing Type	Glass Thickness mm	Length m	Series	Code
Base	12.0	3.048	460	1805460B
	15.0	3.048	460	1805460B
	17.5	3.048	466	1805466B
	19.0 & 21.5	3.048	466	1805466B

Channel fixing holes are Ø 14.2mm at 203.42mm centres to suit Ø 12mm bolts. Height to glass when packer fitted is 27mm. Supplied non-anodised.

Fixing Type	Glass Thickness mm	Length m	Series	Code
Side	12.0	3.048	460	1805460S
	15.0	3.048	460	1805460S
	17.5	3.048	466	1805466S
	19.0 & 21.5	3.048	466	1805466S

Channel fixing holes are Ø 14.2mm at 203.42mm centres to suit Ø 12mm bolts. Height to glass when packer fitted is 27mm. Supplied non-anodised.

GRIP



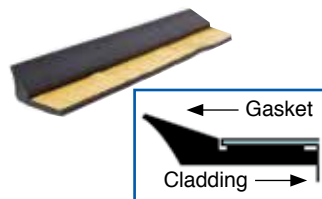
GASKET

For use without cladding



GASKET

For use with cladding



CLADDING TAPE

Double sided



Glass Thick mm	Grip
12.0	1805461B
15.0	1805461
17.5	1805461B
19.0 & 21.5	1805461

Please order 5 grips per metre.

Description	Size mm	Code
Internal use	18 x 14	18054621S
External use	18 x 14	18054621

1m long.

Length m	Size mm	Code
1	26 x 6	18054631

Length m	Code
50	1805453

END CAP



MIRROR FINISH END CAP



CLADDING



MIRROR FINISH CLADDING



Series	Code
460	1805467
466	1805468

Series	Code
460	1805467M
466	1805468M

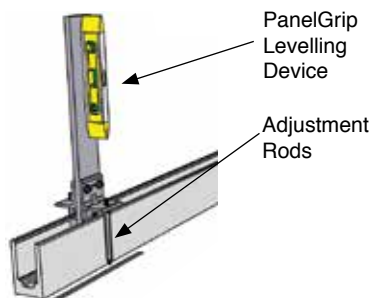
Size mm	Code
105 x 20.6 x 0.8	18044653
105 x 20.6 x 0.8	18054653

3m long.

Size mm	Code
105 x 20.6 x 0.8	18054653M

3m long.

LEVELLING DEVICE



Product	Code
Plumbing bar with spirit level	1805464



ALLEN KEY



Code
189900627

FOR GLASS LOADING GUIDELINES SEE PAGE 82.

TILT-LOC™ CHANNEL



TL86 SERIES

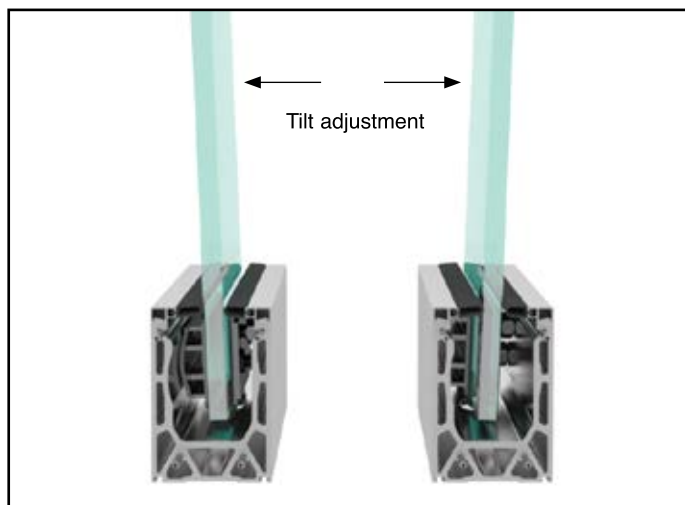


Our newest top quality aluminium Tilt-Loc™ System has a unique patented rotating pressure plate system which allows for fast easy installation of frameless glass.

FEATURES:

- Grade 6063 T6 Aluminium
- Up to 30mm tilt adjustment on glass
- Adjustment from inside the balcony
- All holes are pre-drilled and fixings can be concealed
- Suitable for glass from 12 - 25.52mm thickness
- Glass easily installed and aligned with a spanner
- Silver matt anodised finish

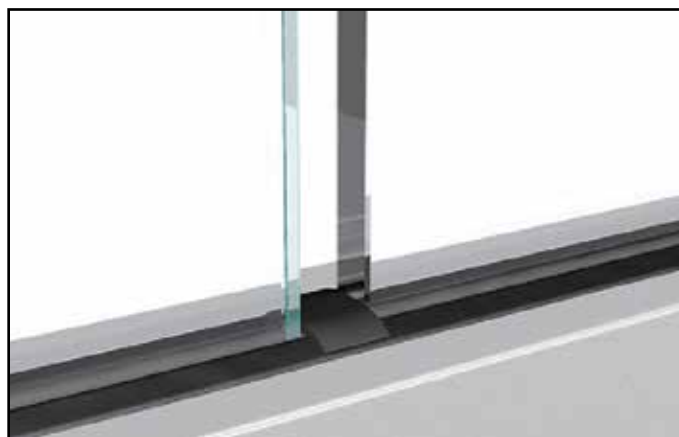
TILT-LOC ADJUSTMENT GIVES PERFECT ALIGNMENT



Up to 30mm tilt adjustment back and forward from inside the balcony.



Alignment pins x 2 included in channel kit.



EDPM dividing gasket to expel water and dirt.

A FULL RANGE OF GLASS IS AVAILABLE FROM PAGE 72.



TILT-LOC™ CHANNEL

TL86 SERIES

BASE-FIX



Glass Thickness mm	Length m	Code
12.0	3	1805540B12
15.0	3	1805540B15
17.5	3	1805540B175
19.0	3	1805540B19
21.5	3	1805540B215
25.0	3	1805540B25

Channel is supplied with 2 x top cladding, 2 x alignment pins, grips and seals.

SIDE-FIX



Glass Thickness mm	Length m	Code
12.0	3	1805540S12
15.0	3	1805540S15
17.5	3	1805540S175
19.0	3	1805540S19
21.5	3	1805540S215
25.0	3	1805540S25

Channel is supplied with 2 x top cladding, 2 x alignment pins, grips and seals.

INTERNAL 90° CORNER

For base & side-fix channel



Description	Code
Base-Fix	1805540BIC
Side-Fix	1805540SIC

Inside length 64mm each side.
Outside length 150mm each side.

EXTERNAL 90° CORNER

For base & side-fix channel



Description	Code
Base-Fix	1805540BEC
Side-Fix	1805540SEC

Inside length 64mm each side.
Outside length 150mm each side.

END CAP

For base & side-fix channel

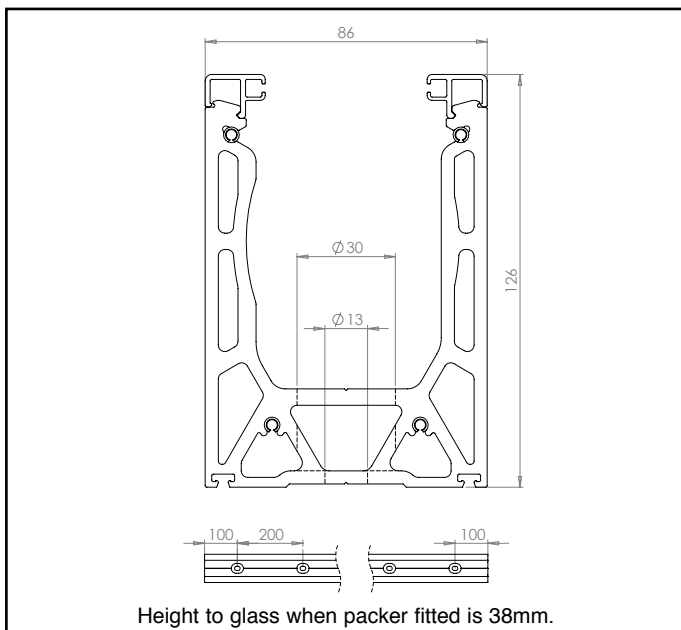


Description	Code
Base-Fix	1805547B
Side-Fix	1805547S

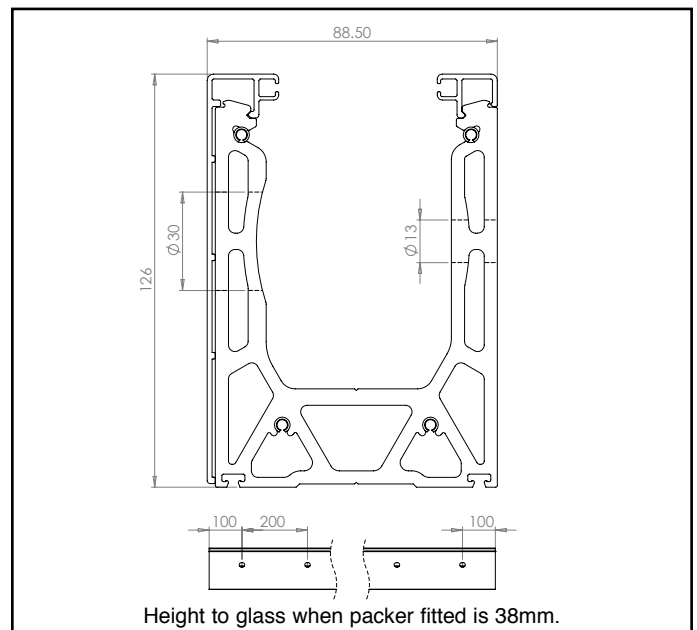
ACCESSORIES

Description	Length m	Code
Top Cladding	3	1805545B
Side Cladding	3	1805545S

BASE-FIX DIMENSIONS



SIDE-FIX DIMENSIONS



TOP RAIL SYSTEMS



- Systems to suit 8 - 21.52mm glass
- Anodised or stainless steel Grade 304 & 316
- Reduced visual impact
- No welding required
- Satin polish or mirror finish
- Choice of 8 profiles



SQUARE SLIM

See page 17



ALUMINIUM SQUARE

See page 18



SQUARE MINI

See page 19



ROUND MINI

See page 20



RECTANGULAR

See page 21



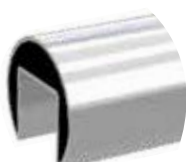
OVAL

See page 22



ROUND

See page 23



MIRROR FINISH ROUND

See page 54



PRO-RAILING®



304



316



Zinc



Zamac



Mild steel



Galvanised



Aluminium



Duplex



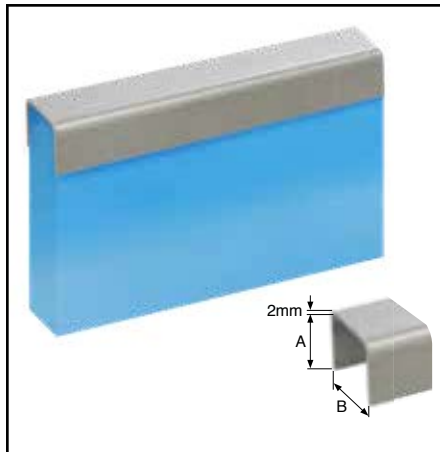
SQUARE SLIM TOP RAIL



ANODISED ALUMINIUM



To Suit Glass mm	Length m	(A) mm	(B) mm	Code
12.0	2.5	13	12.5	150501
15.0	2.5	13	15.5	150502
16.76 - 17.52	2.5	18	18.0	150503
19.0	2.5	18	19.5	150504
21.52	2.5	18	22.0	150505



STAINLESS STEEL



To Suit Glass mm	Length m	(A) mm	(B) mm	Code
12.0	2.5	13	12.5	150601
15.0	2.5	13	15.5	150602
16.76 - 17.52	2.5	18	18.0	150603
19.0	2.5	18	19.5	150604
21.52	2.5	18	22.0	150605

We've got all the pieces!



PRO-RAILING®



PRO-RAILING®
The Stainless Steel Handrail Component System

ALUMINIUM TOP RAIL SYSTEM

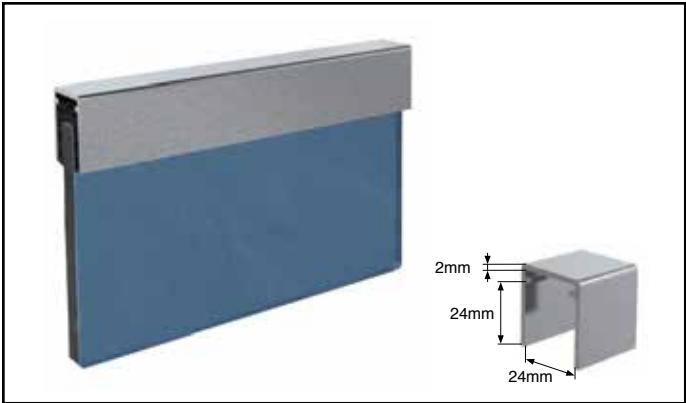


30 x 28mm PROFILE



FEATURES

- Designed for 8 - 21.5mm glass with rubber gasket
- No welding required
- Reduced visual impact of top rail
- Connectors simply slide into the top rail for a neat joint
- Flush fit fittings
- All products are satin anodised aluminium



TOP RAIL

90° TOP RAIL



Length m	Code
4	150506

Code
150506411

Inside length 342mm each side. Outside length 370mm each side.

INTERNAL CONNECTOR

90° CORNER
INTERNAL CONNECTOR

END CAP



Length mm	Code
100	150506412

Code
15050641290

Code
150506413

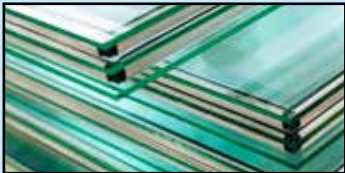
Inside length 76.5mm each side. Outside length 100mm each side.

GASKET



To Suit Glass mm	Length m	Code
8 - 11	1	189903811C
11.5 - 13.5	1	189903115135C
15	1	18990315C
16 - 17.5	1	18990316175C
19	1	18990319C
20 - 21.5	1	18990320215C

Rubber.



FOR OUR RANGE OF
GLASS PANELS,
SEE PAGE 72.



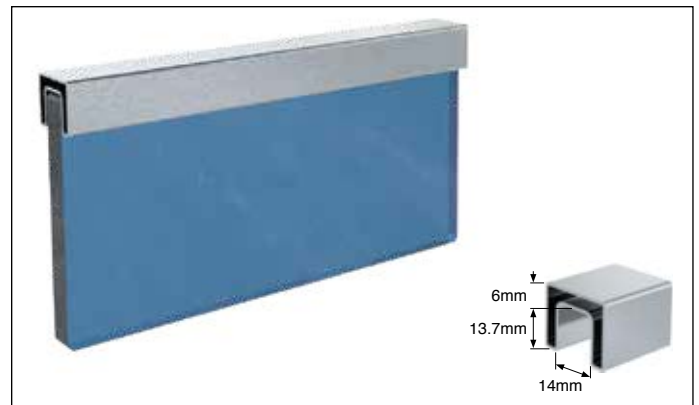
SQUARE MINI TOP RAIL SYSTEM

25 x 21mm PROFILE



FEATURES:

- Designed for 10 - 12mm glass with rubber gasket
- No welding required
- Reduced visual impact of top rail
- Straight joiner slides into the top rail for a neat joint
- Flush fit fittings
- All products are satin polish finish stainless steel Grade 316



SPLIT TUBE



Length m	Code
3.0	18067053S25
5.8	1806705S25

GASKET



To Suit Glass mm	Length m	Code
10	1	1899031010

Rubber.

GASKET



To Suit Glass mm	Length m	Code
12	1	1899031012

Rubber.

ADJUSTABLE CORNER



Code
1806418S25

90° JOINER



Code
1806411S25

ADJUSTABLE JOINER



Code
1806416S25

END CAP



Code
1806413S25

WALL BRACKET



Code
1806415S25

JOINER



Code
1806412S25

ROUND MINI TOP RAIL SYSTEM

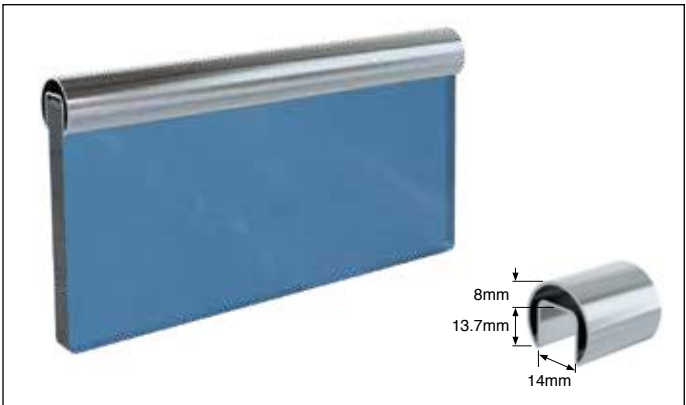


Ø 25mm PROFILE



FEATURES:

- Designed for 10 - 12mm glass with rubber gasket
- No welding required
- Reduced visual impact of top rail
- Straight joiner slides into the top rail for a neat joint
- Flush fit fittings
- All products are satin polish finish stainless steel Grade 316



SPLIT TUBE



Length m	Code
3.0	18067053A
5.8	1806705A

GASKET



To Suit Glass mm	Length m	Code
10	1	1899031010

Rubber.

GASKET



To Suit Glass mm	Length m	Code
12	1	1899031012

Rubber.

90° JOINER



Code
1806411A

ADJUSTABLE CORNER



Code
1806418A

ADJUSTABLE JOINER



Code
1806416A

END CAP



Code
1806413A

WALL BRACKET



Code
1806415A

JOINER



Code
1806412A



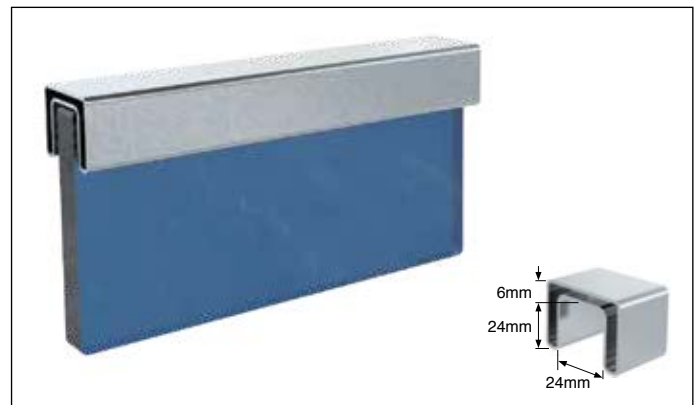
RECTANGULAR TOP RAIL SYSTEM

40 x 30mm PROFILE



FEATURES:

- Designed for 8 - 21.5mm glass with rubber gasket
- No welding required
- Joiner simply slides into the top rail for a neat joint
- Flush fit fittings
- All products are satin polish finish Duplex 2205 stainless steel unless otherwise stated



SPLIT TUBE



Length m	Code
3.0	180670534030
5.8	18227054030
6.0	18067054030

GASKET



To Suit Glass mm	Length m	Code
8 - 11	1	189903811C
11.5 - 13.5	1	189903115135C
15	1	18990315C

Rubber.

To Suit Glass mm	Length m	Code
16 - 17.5	1	18990316175C
19	1	18990319C
20 - 21.5	1	18990320215C

Rubber.

90° JOINER



Code
18224114030

END CAP



Code
18224134030

ADJUSTABLE CORNER

90° - 180° left or right



Code
18224184030

WALL BRACKET



Code
18224154030

ADJUSTABLE JOINER

45° up & 90° down



Code
18224164030

JOINER



Code
18224124030

OVAL TOP RAIL SYSTEM

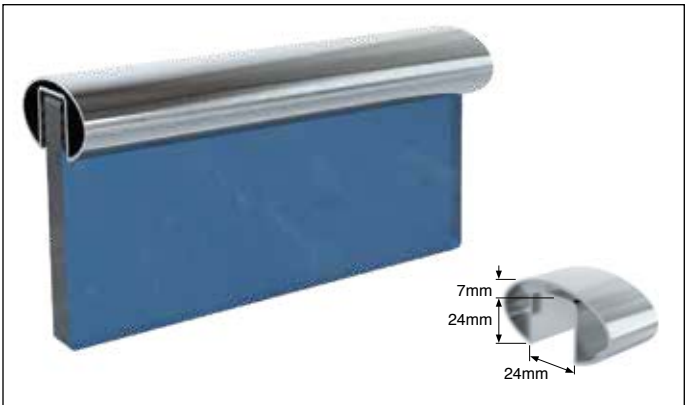


60 x 30mm PROFILE



FEATURES:

- Designed for 8 - 21.5mm glass with rubber gasket
- No welding required
- Joiner simply slides into the top rail for a neat joint
- Flush fit fittings
- All products are satin polish finish Duplex 2205 stainless steel unless otherwise stated



SPLIT TUBE



GASKET



Length m	Code
3.0	180670536030
5.8	18227056030
6.0	18067056030

To Suit Glass mm	Length m	Code
8 - 11	1	189903811C
11.5 - 13.5	1	189903115135C
15	1	18990315C

Rubber.

To Suit Glass mm	Length m	Code
16 - 17.5	1	18990316175C
19	1	18990319C
20 - 21.5	1	18990320215C

Rubber.

90° JOINER



Code
18224116030

ADJUSTABLE CORNER

45° left or right



Code
18224186030

ADJUSTABLE JOINER

45° up or down



Code
18224166030

END CAP



Code
18224136030

WALL BRACKET



Code
18224156030

JOINER



Code
18224126030



ROUND TOP RAIL SYSTEM

Ø 42.4 & 48.3mm PROFILES



Round top rail system offers a stylish solution to the top of any glass balustrade and also provides a visual break. We can shape to match if you're planning radiused glass in your design.

SPLIT TUBE

1.5mm wall thickness



3m LENGTH

Ø mm	Code
42.4	18047053C
48.3	18047053D
42.4	18067053C
48.3	18067053D

6m LENGTH

Ø mm	Code
42.4	1804705C
48.3	1804705D
42.4	1806705C
48.3	1806705D

GASKET



Ø 42.4mm

Glass Thickness mm	Code
8 - 11	189903811C
11.5 - 13.5	189903115135C
15	18990315C
16 - 17.5	18990316175C
19	18990319C
20 - 21.5	18990320215C

Ø 48.3mm

Glass Thickness mm	Code
8 - 11	189903811D
11.5 - 13.5	189903115135D
15	18990315D
16 - 17.5	18990316175D
19	18990319D
20 - 21.5	18990320215D

90° HORIZONTAL CORNER



Ø mm	Code
42.4	1804411C
48.3	1804411D
42.4	1806411C
48.3	1806411D

25 - 55° DOWNWARDS ADJUSTABLE CONNECTOR



Ø mm	Code
42.4	1804416C
48.3	1804416D
42.4	1806416C
48.3	1806416D

25 - 55° UPWARDS ADJUSTABLE CONNECTOR



Ø mm	Code
42.4	1804417C
48.3	1804417D
42.4	1806417C
48.3	1806417D

90° VERTICAL CORNER



Ø mm	Code
42.4	1804410C
48.3	1804410D
42.4	1806410C
48.3	1806410D

END CAP



Ø mm	Code
42.4	1804413C
48.3	1804413D
42.4	1806413C
48.3	1806413D

WALL/FLOOR FLANGE



Ø mm	Code
42.4	1804415C
48.3	1804415D
42.4	1806415C
48.3	1806415D

TUBE ADAPTOR



Ø mm	Code
42.4	1804414C
48.3	1804414D
48.3	1806414D

IN-LINE CONNECTOR



Ø mm	Code
42.4	1804412C
48.3	1804412D
42.4	1806412C
48.3	1806412D

FOR OUR MIRROR FINISH ROUND TOP RAIL SYSTEM SEE PAGE 54.



HANDRAILING MADE EASY!

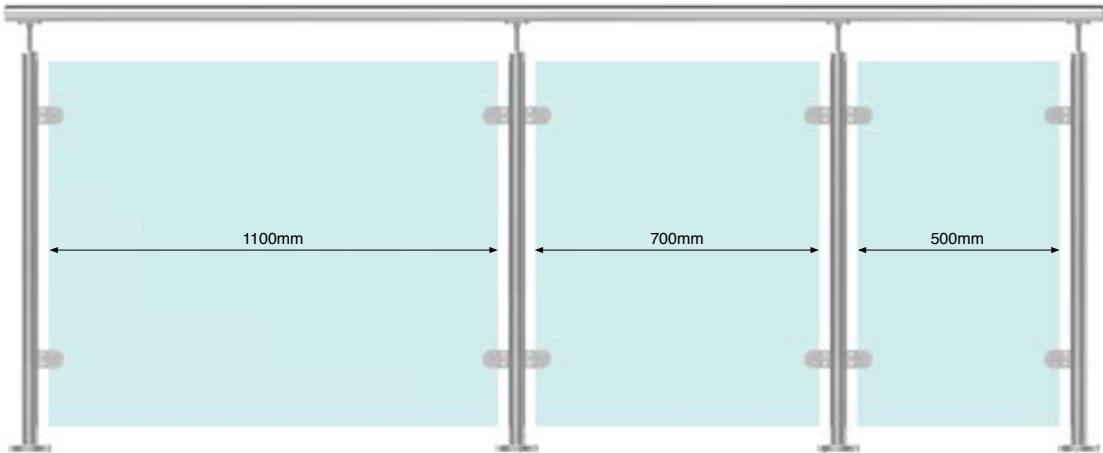
Save a huge amount of time & money with our extensive range of pre-assembled posts, supplied from stock. They are all tested to BS 6180. No drilling of tubes, no bolting on of glass clamps and no welding of base plates required. We've done the work for you!

- STRAIGHT OUT OF THE BOX AND READY TO INSTALL:
- Ø 42.4 & 48.3mm round posts
 - 40 x 40mm square posts
 - Strand wire rope posts

- Crossbar holder posts
 - Satin & mirror polish
 - Stainless steel Grade 304 & 316

STANDARD GLASS PANELS

We stock a large range of different widths of 10mm toughened glass panels to make your installations even quicker, easier and more cost effective. See pages 72 - 76 for our full range.



FOR OUR FULL RANGE OF GLASS SEE PAGE 72.

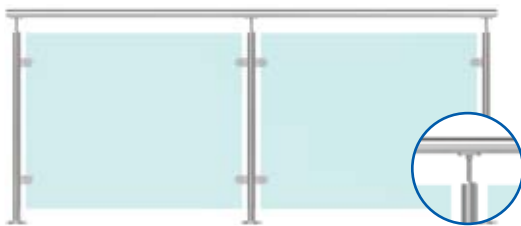
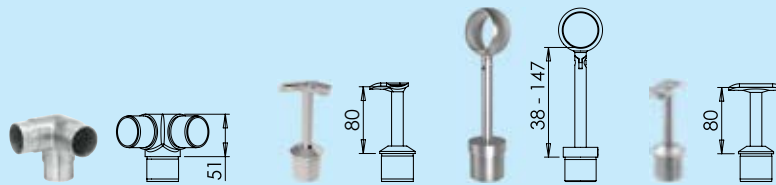


PRE-ASSEMBLED POSTS

CHOOSE YOUR OWN POST TOP

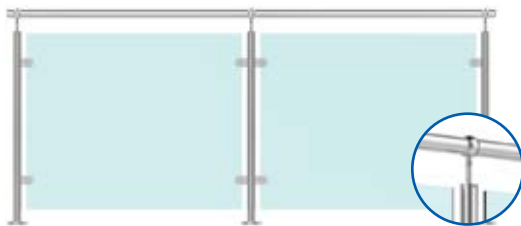
Our pre-assembled glass clamp posts come with open tops and are suitable for a wide range of applications. With a change of a top fitting any of the designs below are easily achievable. The posts are designed for a quick and easy installation with maximum flexibility to meet your design requirements.

6 GREAT
DESIGNS
FROM ONE
POST!



RAILING SADDLE

- Gives overall height of 1100mm with handrail tube
- Available for Ø 42.4 and 48.3mm
- Railing saddles can be found on page 42
- Adjustable spigot



QUICK & EASY INSTALLATION

- Ideal for DIY installations, no drilling of tube required
- Great for exhibition stands & temporary structures
- Gives overall height of 1100mm with handrail tube
- Adjustable handrail adaptor adjusts in height & angle
- New handrail bracket with adjustable elbow added to the range, see page 42



TUBE FITTINGS

- Gives an overall handrail height of 1151mm if used with our pre-assembled posts on page 24
- Tube fittings can be found on page 43



END CAPS - NO TOP RAIL

- Not suitable for applications where the drop is more than 600mm unless a handrail is added. See page 40
- Using posts on page 27 this will give a height of 1100mm
- Ideal for areas that need demarcation.
- Offers the maximum unobstructed view from a post system
- See Marano® square & round as alternatives (pages 58 & 61)



POST CAPS RAISED GLASS & SPLIT TUBE

- Gives overall height of 1100mm
- For our range of split tube top rails that work in this design, see page 16
- Choice of caps available, see pages 40 & 53

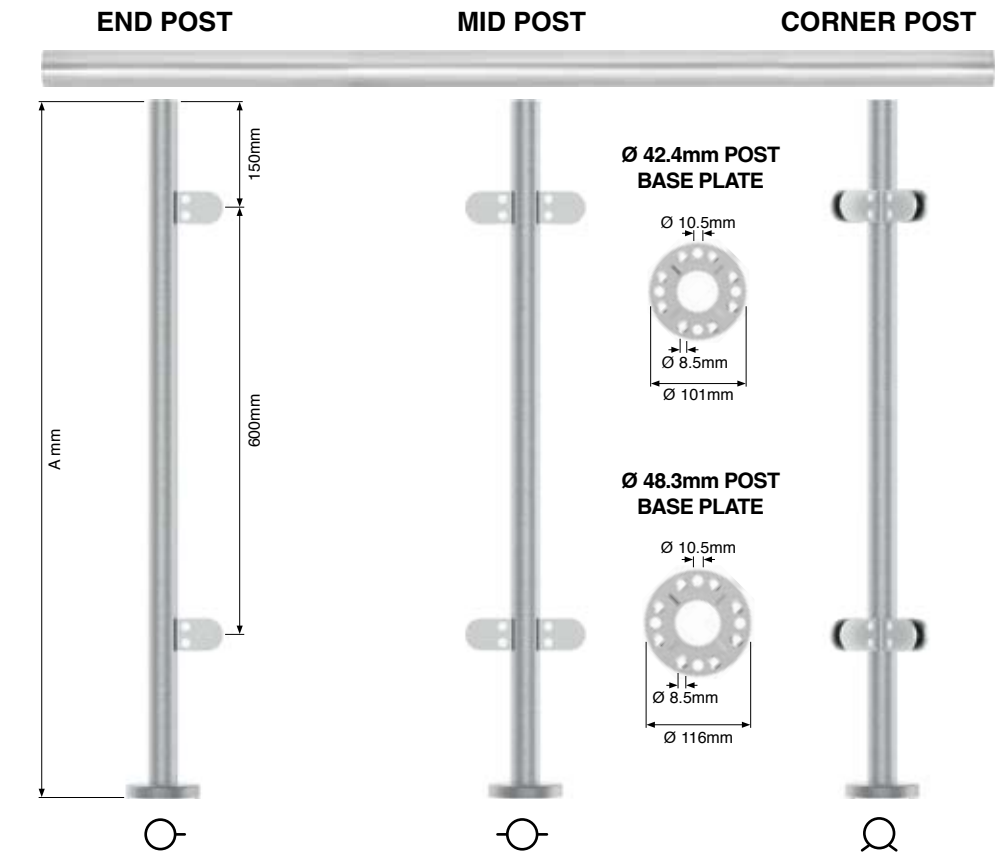
PRE-ASSEMBLED POSTS



BOLT-DOWN



CHOOSE YOUR POST & TOP



Ø mm	A mm	Code
42.4	978	1804791C
48.3	972	1804791D
42.4	978	1806791C
48.3	972	1806791D

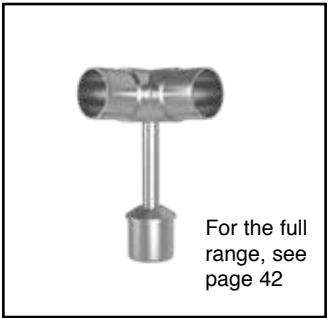
Dim A is post only with no top.
Top fitting not included.

Ø mm	A mm	Code
42.4	978	1804792C
48.3	972	1804792D
42.4	978	1806792C
48.3	972	1806792D

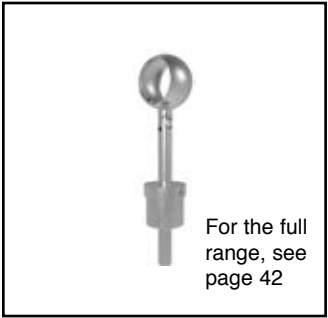
Dim A is post only with no top.
Top fitting not included.

Ø mm	A mm	Code
42.4	978	1804793C
48.3	972	1804793D
42.4	978	1806793C
48.3	972	1806793D

Dim A is post only with no top.
Top fitting not included.



For the full range, see page 42



For the full range, see page 42



For the full range, see page 42

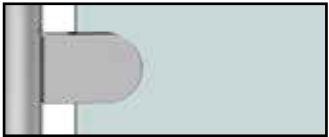


For the full range, see page 16

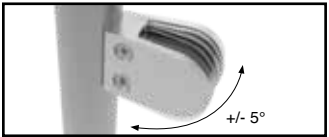
ALL POSTS HAVE:



Welded base fitting complete with rubber 'O' ring and cover.



Glass clamp for 10mm glass (8 and 12mm rubbers available).



Variable fixing bolt.

FOR MIRROR FINISH POSTS SEE PAGE 51.



PRE-ASSEMBLED POSTS

BOLT-DOWN

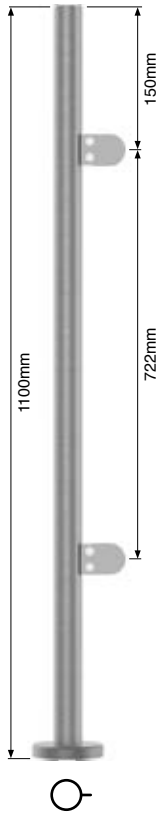


1100mm
HIGH
POSTS



10mm GLASS INFILL PANELS, WITHOUT A HANDRAIL, WILL NOT PASS BUILDING REGULATIONS. THIS SYSTEM IS ONLY SUITABLE WHERE A DROP OF LESS THAT 600mm IS PRESENT.

END POST



Ø mm	Code
42.4	1806761C

Top fitting not included.

MID POST



Ø mm	Code
42.4	1806762C

Top fitting not included.

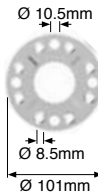
CORNER POST



Ø mm	Code
42.4	1806763C

Top fitting not included.

Ø 42.4mm POST
BASE PLATE



Ø 48.3mm POST
BASE PLATE



RANGE OF END CAPS

See page 40



Raised Top



7 Groove Flat Top



Domed Top

To keep stainless steel handrail & fittings in top condition long after installation, use our tea staining kit, see page 67.



ALLEN KEY



Code
189900606

Compatible with our tube fittings. See page 43 for the full range.



FOR MIRROR
FINISH POSTS SEE
PAGE 51.

PRO-RAILING®

PRE-ASSEMBLED POSTS



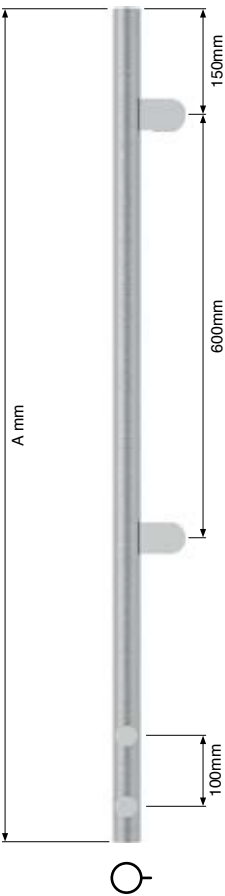
SIDE-FIX



FOR OUR RANGE OF
GLASS PANELS ,
SEE PAGES 72 - 76.

TESTED TO
BS 6180

END POST



MID POST



When using side-fix posts glass should be drilled & security pins code: **189900401** for 8 - 10mm thick glass or code: **189900402** for 12mm thick glass should be used.



FOR MIRROR FINISH
POSTS SEE PAGE 51.

To keep stainless steel handrail & fittings in top condition long after installation, use our tea staining kit, see page 67.



Ø mm	A mm	Code
42.4	1178	1806794C
48.3	1172	1806794D

Dim A is post only with no top.
Top fitting not included.

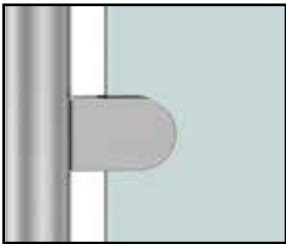
Ø mm	A mm	Code
42.4	1178	1806795C
48.3	1172	1806795D

Dim A is post only with no top.
Top fitting not included.

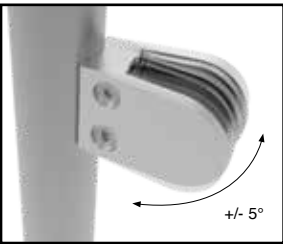
ALL POSTS HAVE:



Two M10 x 200mm threads, fascia mount. Stainless steel cap in the base of the post.



Glass clamp for 10mm glass (8 and 12mm rubbers available).



Variable fixing bolt.

ALLEN KEY



Code
189900606



MAKE YOUR OWN POSTS

A pre-welded base on a plain post saves you time and money on welding, when a bespoke post is required. Simply cut it to the desired height and fit extra components where needed. The plain upright is supplied in an easy to handle length and is ideal for offset glass clamps on staircases.

PRE-ASSEMBLED PLAIN POST

Diagram showing a plain post of height A mm. Two base plate options are shown:

- Ø 42.4mm POST BASE PLATE**: Dimensions include $\text{Ø } 10.5\text{mm}$, $\text{Ø } 8.5\text{mm}$, and $\text{Ø } 101\text{mm}$.
- Ø 48.3mm POST BASE PLATE**: Dimensions include $\text{Ø } 10.5\text{mm}$, $\text{Ø } 8.5\text{mm}$, and $\text{Ø } 116\text{mm}$.

Ø mm	A mm	Code
42.4	1000	1804790C
48.3	1000	1804790D
42.4	1000	1806790C
48.3	1000	1806790D

Dim A is post only with no top. Top fitting not included.

STAINLESS STEEL TUBE

No holes

CAN BE USED WITH



Bolt-on
page 47



Sleeve fit
page 30

**THESE POSTS CAN BE
DRILLED, BOLTED, CUT TO
SIZE, WELDED AND MORE!**

Ø mm	Height mm	Code
42.4	1000	1804708CB
48.3	1000	1804708DB
42.4	1000	1806708CB
48.3	1000	1806708DB
42.4	1200	1804708CL
48.3	1200	1804708DL
42.4	1200	1806708CL
48.3	1200	1806708DL

SLEEVE FIT BRACKETS

**STOP PRESS - THIS SYSTEM CAN BE BUILT WITHOUT HAVING TO
DRILL ANY STAINLESS STEEL TUBE.**

Diagram showing a staircase railing system with various brackets. Four circular callouts show different bracket types:

- Mid bracket code: **1806521C.**
- End bracket code: **1806522C.**
- Adjustable corner bracket code: **1806523C.**
- Adjustable handrail support bracket code: **1806314CC.**

**JUST TIGHTEN THE
GRUB SCREW TO FIX
TO POST**

**CREATE A WIDE RANGE OF
POSTS WITH NO DRILLING!**

- 1 Select your post height.
- 2 Choose your post top
(End caps page 40)
(Railing saddles page 42)
- 3 Choose your glass clamp
(442F page 48)
(401F page 47)
- 4 Choose your base
(Bolt-down page 44)
(Side-fix page 44)

PRO-RAILING®

SLEEVE FIT BRACKETS



END BRACKET



Ø mm	Code
42.4	1806521C
48.3	1806521D

Supplied with M8 bolt for fixing glass clamps.

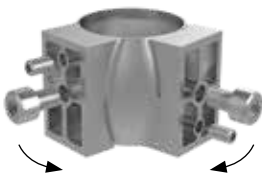
MID BRACKET



Ø mm	Code
42.4	1806522C
48.3	1806522D

Supplied with M8 bolt for fixing glass clamps.

75 - 185° ADJUSTABLE
CORNER BRACKET



Ø mm	Code
42.4	1806523C
48.3	1806523D

Supplied with M8 bolt for fixing glass clamps.

JUST SLIDE EVERYTHING
INTO PLACE & TIGHTEN!

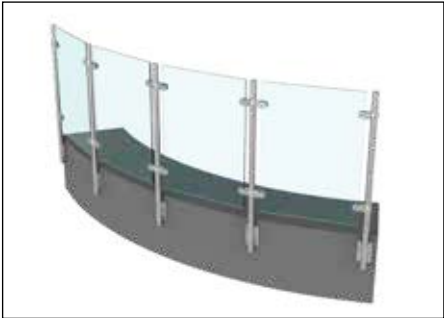
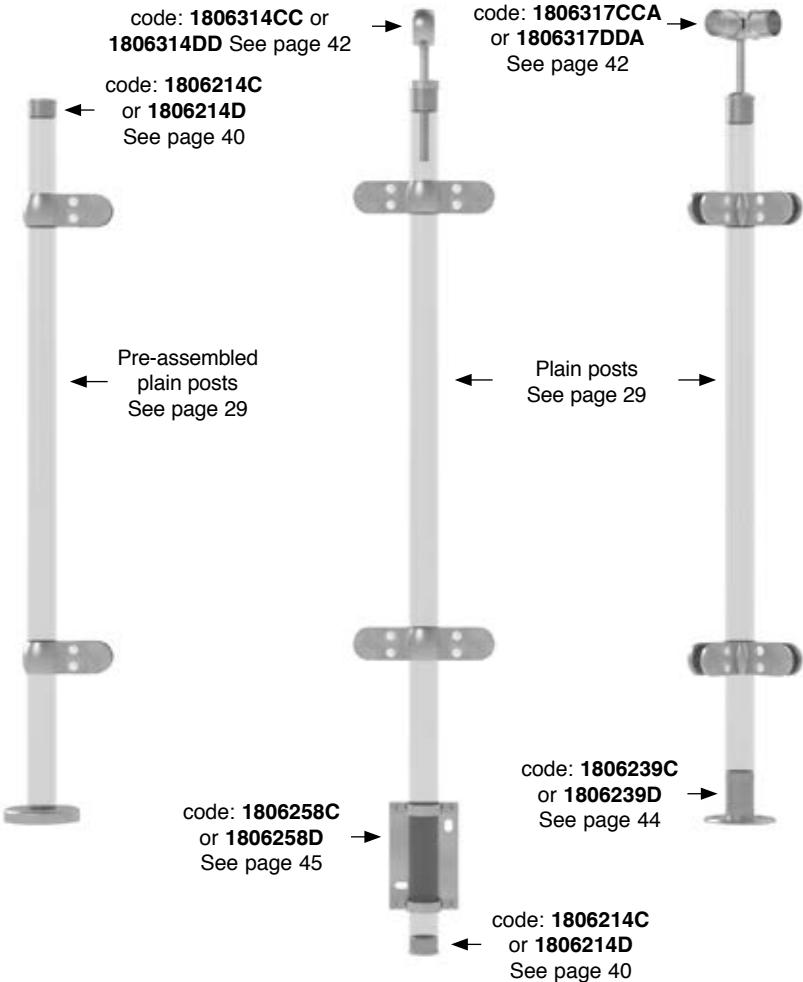


Image shows sleeve fit brackets being used on a curve.

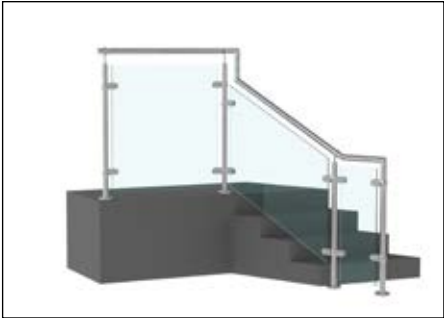


Image shows sleeve fit brackets being used on a staircase.

PRO-RAILING®



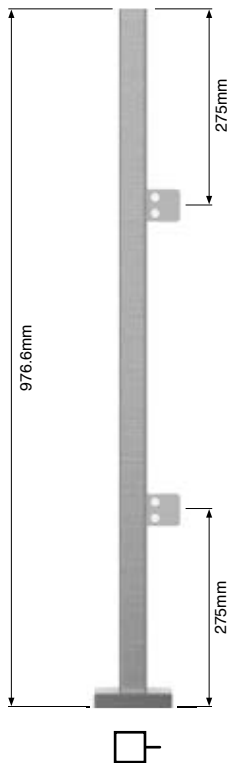
SQUARE PRE-ASSEMBLED POSTS

BOLT-DOWN



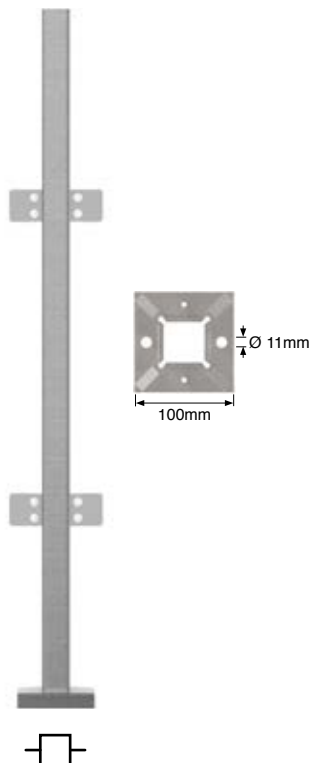
TESTED TO
BS 6180

END POST



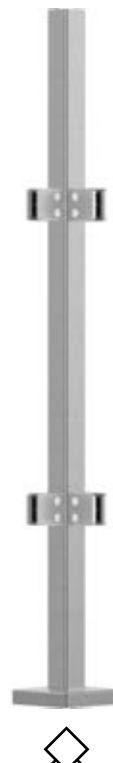
□ mm	Code
40	1806731S40

MID POST



□ mm	Code
40	1806732S40

CORNER POST



□ mm	Code
40	1806733S40

For compatible handrail supports see pages 32.



SQUARE POSTS CAN
BE USED WITH:



Round tube



Square tube



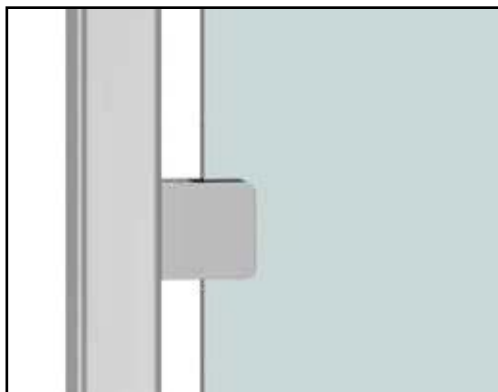
Rectangular tube

WE STOCK GLASS FOR 1200mm POST CENTRES, SEE PAGE 72.

ALL POSTS HAVE:



Welded base fitting complete with cover.



Glass clamps for 10mm glass (8mm rubbers available).

ALLEN KEY



Code
189900606

PRO-RAILING®

SQUARE FITTINGS



**ADJUSTABLE SPIGOT
SADDLE**

Tube/tube



□ mm	To Suit Ø mm	Code
40	42.4	1806312S40C

**90° FIXED SPIGOT
SADDLE**

Tube/tube



□ mm	To Suit Ø mm	Code
40	42.4	1806311S40C

**ADJUSTABLE SPIGOT
SADDLE**

Tube/flat



□ mm	To Suit Ø mm	Code
40	Flat	1806312S40F

**90° FIXED SPIGOT
SADDLE**

Tube/flat



□ mm	To Suit Ø mm	Code
40	Flat	1806311S40F

**ADJUSTABLE HANDRAIL
BRACKET**

Wall/tube



□ mm	To Suit Ø mm	Code
40	42.4	1806303S40C

**ADJUSTABLE HANDRAIL
BRACKET**

Wall/flat



□ mm	To Suit	Code
40	Flat	1806303S40F

**2 HOLE BALUSTER
BRACKET**



□ mm	Code
40	1806256S40

Weld fix.

**SQUARE BALUSTRADE
BRACKET**



□ mm	Code
40	1806213S40

90° ELBOW



□ mm	Code
40	1806202S40

3 WAY CORNER



□ mm	Code
40	1806204S40

LONG TEE



□ mm	Code
40	1806205S40

**ADJUSTABLE
ELBOW**



□ mm	Code
40	1806227S40

**IN-LINE
CONNECTOR**



□ mm	Code
40	1806206S40

FLAT TOP END CAP



□ mm	Code
40	1806215S40

COVER PLATE

To suit 1806207S40



□ mm	Code
40	1806208S40

**WELD ON BASE
PLATE**



□ mm	Code
40	1806207S40

TUBE



□ mm	Length m	Code
40	2.9	1806704S40
40	5.8	1806700S40

2.5mm thickness.

FOR SQUARE GLASS CLAMPS, PLEASE SEE PAGE 48.

PRO-RAILING®



WIRE ROPE SYSTEM



PLEASE CONSULT LOCAL BUILDING CONTROL FOR APPROVAL OF THIS SYSTEM.

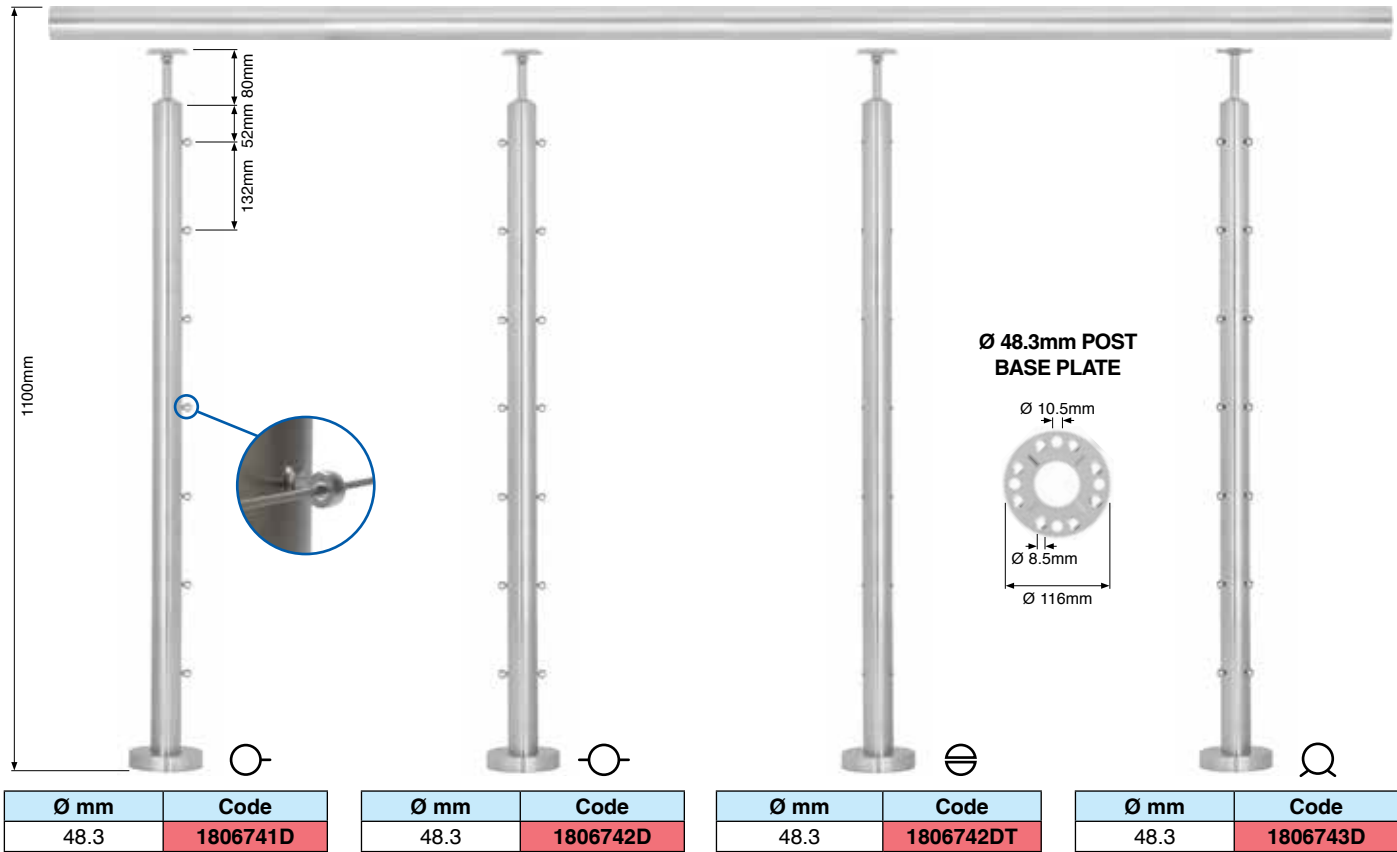
Stainless steel Ø 3 and 6mm strand wire rope system is a simple and cost effective alternative to our crossbar system. It can be fixed to most surfaces including wood, metal and brick and is ideal for external applications in residential and commercial environments. Suitable for self assembly and simple to install using self locking, crimped or glued connectors.

7 HOLE END/MID POST
M6 eyebolts

14 HOLE MID STRAINING POST
M6 eyebolts

14 HOLE MID POST
Ø 6mm through holes

14 HOLE CORNER POST
M6 eyebolts



THIMBLE

FERRULE

LOCKING COLLAR



To Suit Wire Ø mm	Code
3	1806610
6	1806670

To Suit Wire Ø mm	Code
3	1806609
3	1301609
6	1806669

To Suit Wire Ø mm	Code
3	1806604
6	1806664

WIRE ROPE SYSTEM



EYEBOLT CONNECTOR



Thread mm	To Suit Wire Ø mm	Code
M6	3	1806603
M6	3	1301603
M10	6	1806663

POST FITTING ADAPTOR RING



Ø mm	Code
42.4	1804335C
48.3	1804335D
42.4	1806335C
48.3	1806335D

M6 thread.

No need to drill posts.



Example of post fitting adaptor ring with 6mm eyebolt code: **1806663**.

SWAGELESS CABLE TENSIONER



To Suit Wire Ø mm	Code
3	1806611
6	1806671

SWAGELESS BUCKLE



To Suit Wire Ø mm	Code
3	1806612
6	1806672

SWAGED CABLE TENSIONER



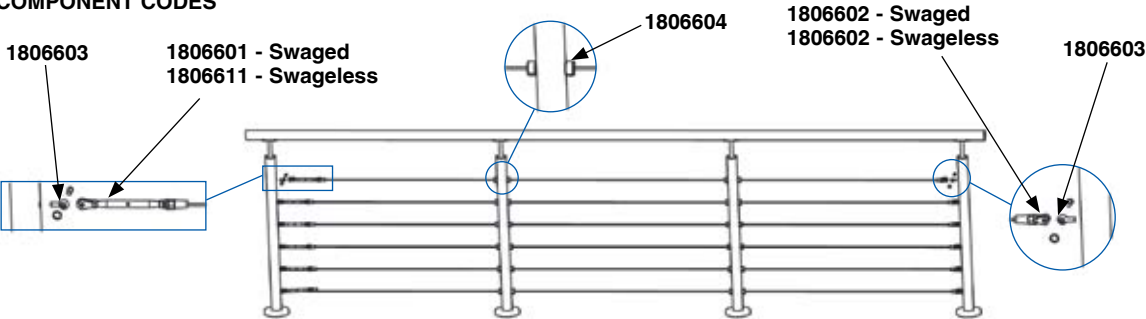
To Suit Wire Ø mm	Code
3	1806601
6	1806661

PLAIN BUCKLE CONNECTOR



To Suit Wire Ø mm	Code
3	1806602
6	1806662

3mm WIRE COMPONENT CODES



WIRE ROPE

1 x 19 strands



Length m	Thickness mm	Code
10	3	180660510
10	6	180666510
50	3	180660550
50	6	180666550
100	3	1806605100
100	6	1806665100

PAD EYE



To Suit Wire Ø mm	Code
3	1806608
6	1806668

Fixing holes Ø 4.5mm.

ARTICULATED WIRE TENSIONER



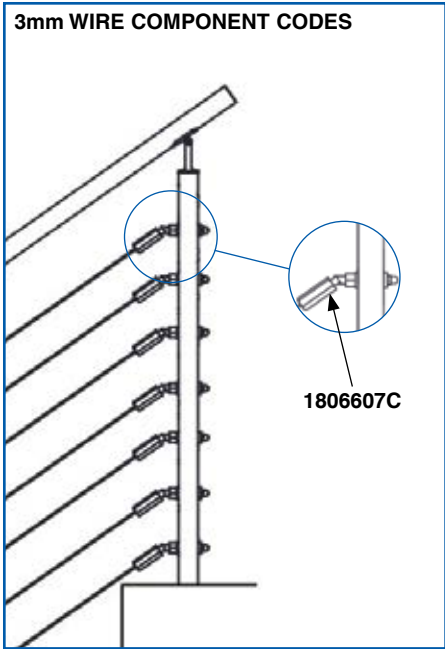
Ø mm	To Suit Wire Ø mm	Code
42.4	3	1804607C
42.4	3	1806607C
48.3	3	1806607D

EYEBOLT WOODSCREW THREAD



To Suit Wire Ø mm	Code
3	1806606
6	1806666

3mm WIRE COMPONENT CODES





WIRE ROPE SYSTEM

CABLE TENSIONER

For flat runs



To Suit Wire Ø mm	Size mm	Code
3	Flat	1806617
3	42.4	1806617C
3	48.3	1806617D
6	Flat	1806667
6	42.4	1806667C
6	48.3	1806667D

Includes 1 x threader cable tensioner, 1 x cover cap and 1 x end fitting.

CABLE TENSIONER

For stairs and slopes



To Suit Wire Ø mm	Size mm	Code
3	Flat	1806618
3	42.4	1806618C
3	48.3	1806618D
6	Flat	1806677
6	42.4	1806677C
6	48.3	1806677D

Includes 1 x threader cable tensioner, 1 x cover cap and 1 x end fitting.

UPWARD ANGLED WIRE ROPE HOLDER

For angles + / - 35°



To Suit Wire Ø mm	Size mm	Code
3	Flat	1806622
3	42.4	1806622C
3	48.3	1806622D
6	Flat	1806682
6	42.4	1806682C
6	48.3	1806682D

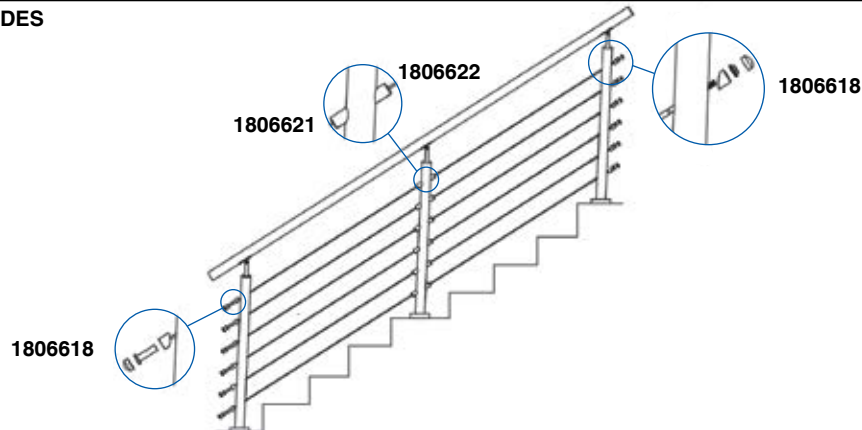
DOWNWARD ANGLED WIRE ROPE HOLDER

For angles + / - 35°



To Suit Wire Ø mm	Size mm	Code
3	Flat	1806621
3	42.4	1806621C
3	48.3	1806621D
6	Flat	1806681
6	42.4	1806681C
6	48.3	1806681D

3mm WIRE COMPONENT CODES



CABLE TENSIONER

Through fitting



To Suit Wire Ø mm	Size mm	Code
3	N/A	1806613
6	N/A	1806673

ANGLED WIRE ROPE HOLDER

Left hand side



To Suit Wire Ø mm	Size mm	Code
3 and 6	Flat	1806615
3	42.4	1806615C
3	48.3	1806615D

Please order screws code: 189900603.

ANGLED WIRE ROPE HOLDER

Middle



To Suit Wire Ø mm	Size mm	Code
3	Flat	1806616
3	42.4	1806616C
3	48.3	1806616D
6	Flat	1806676

Please order screws code: 189900603.

ANGLED WIRE ROPE HOLDER

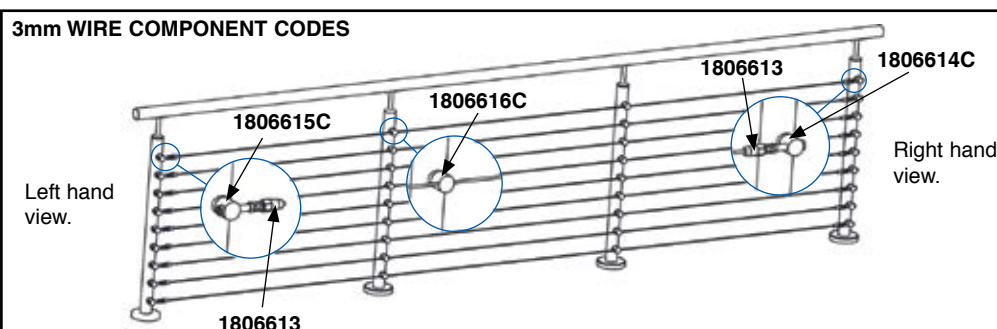
Right hand side



To Suit Wire Ø mm	Size mm	Code
3 and 6	Flat	1806614
3	42.4	1806614C
3	48.3	1806614D

Please order screws code: 189900603.

3mm WIRE COMPONENT CODES



WIRE ROPE SYSTEM



COVER CAP
With locking ends



To Suit Wire Ø mm	Code
3 and 6	1806619

END FITTING



To Suit Wire Ø mm	Code
3	1806624
6	1806684

CABLE RELEASE TOOL
For end fitting



To Suit Wire Ø mm	Code
3	1806620
6	1806680

INSTALLATION USING CABLE TENSIONER



1 Crimp wire into cable tensioner and insert through pre-drilled hole on starter post.



2 Add washer & nut and loosely tighten.



3 Insert end fitting through end post, pull tight, cut wire flush with fitting.



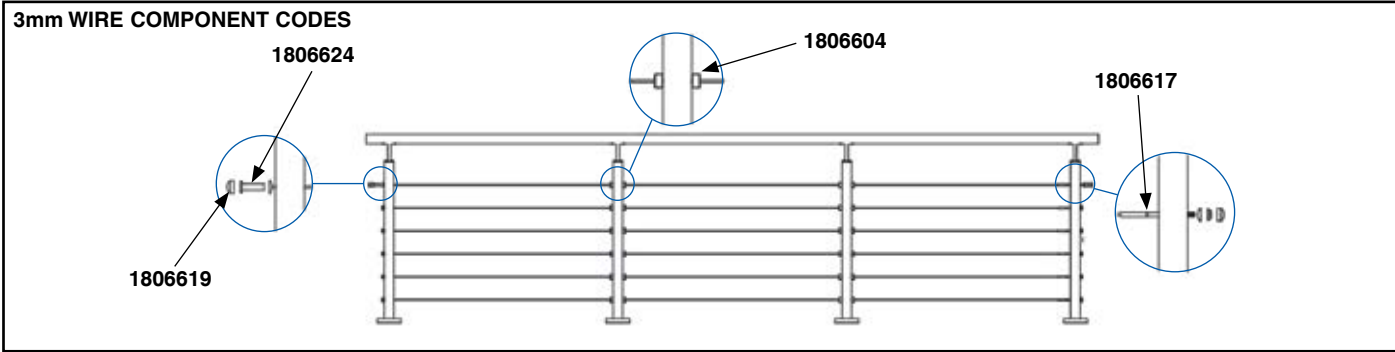
4 Screw on cover cap.



5 Tighten nut on starter post to bring the wire under tension.



6 Cut excess protruding thread and screw on cover cap.



CRIMPING TOOL



Code
189900102

HYDRAULIC CRIMPING TOOL



Code
189900103

WIRE CUTTING TOOL



Code
080569

INSTANT ADHESIVE (50ml)

For use as thread lock adhesive



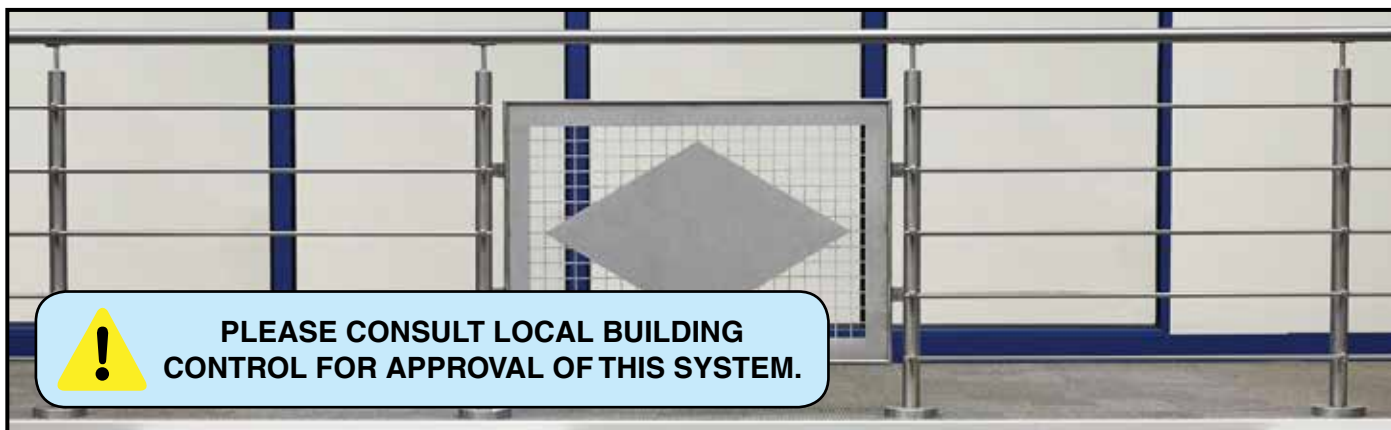
Code
1899007454

Supplied with plunger and needle for accurate application.

PRO-RAILING®



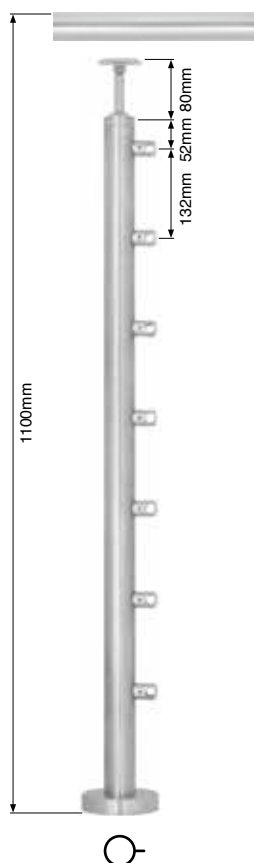
CROSSBAR SYSTEM



PLEASE CONSULT LOCAL BUILDING CONTROL FOR APPROVAL OF THIS SYSTEM.

Our crossbar system can provide a modern handrail and balustrade for many applications. Offering another practical alternative to a glazed balustrade. Flexible components allow for 7 rails to be fitted as standard and it can also work with plain or decorative vertical bars using a simple 2 part adaptor.

ROUND 7 HOLE POST



Ø mm	Code
42.4	1806737C
48.3	1806737D

Fitted with 12mm bar/tube holders.

CROSSBAR HOLDER

Flat mounting



Code
1804501F
1806501F

Ø 12.2mm through hole requires M6 fixing bolt code: 189900621.

2 PART ROUND BAR HOLDER



Code
13i006966*

Ø 12.2mm through hole.
*Zinc plated.

CROSSBAR HOLDER

Tube mounting



Ø mm	Code
42.4	1804501C
48.3	1804501D
42.4	1806501C
48.3	1806501D

Ø 12.2mm through hole requires M6 fixing bolt code: 189900621.

CROSSBAR HOLDER

Tube mounting



Ø mm	Code
48.3	1301501D

Ø 12.2mm through hole requires M6 fixing bolt code: 189900621.
*Zinc plated.

ANGLE JOINT CONNECTOR



Code
1804507
1806507

ADJUSTABLE CROSSBAR HOLDER



Ø mm	Code
48.3	1806509D
Flat	1806509F

Requires 6mm fixing bolt code: 189900621.

BENDABLE CORNER CONNECTOR



Code
1301507B

To suit Ø 12mm bar.

SOLID END BALL



Ø mm	Code
20	1301502
20	1804502
20	1806502

HOLLOW TUBE



Ø mm	Code
12	1804510
12	1806510

3m length. 1mm wall thickness.

SOLID BAR



Ø mm	Code
12	1804500
12	1806500

3m length.

ALLEN KEY

For tightening grub screws in handrail brackets



Code
189900607

BUTTON HEAD BOLT



Ø x L mm	Code
M6 x 20	189900621



The Mark You Can Trust

HANDRAIL KIT

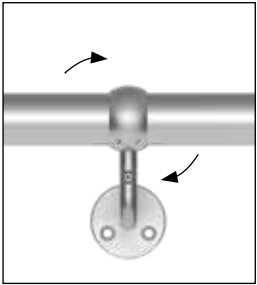


MODULAR KIT



Length m	Ø mm	Code
1.2	42.4	1804803C

Kit includes 1.2m stainless steel Grade 304 tube and 2 x wall brackets.



EXTEND YOUR HANDRAIL KIT TO ANY LENGTH WITH THESE ADDITIONAL COMPONENTS.

HANDRAIL BRACKET

Wall/tube



Adjustable angle

Ø mm	Code
42.4	1804308FC

85mm distance from wall to centre of bracket.

HOLLOW TUBE



Ø mm	Code
42.4	1804708CL

1.2m length.

ADJUSTABLE ELBOW



Ø mm	Code
42.4	1804203C

IN-LINE CONNECTOR



Ø mm	Code
42.4	1804206C

SCROLL END



Ø mm	Code
42.4	1804221C

RAISED TOP



Ø mm	Code
42.4	1804215C

GRAB RAIL BRACKET

WALL/TUBE



Ø mm	Length mm	Code
42.4	42.5	1804309FC





RECTANGULAR HANDRAIL SYSTEM

TYPE 40 x 10mm



Our new 40 x 10mm rectangular handrailing system adds a contemporary look to your installation. It's easy to glue together and can work with any number of flat top saddle handrail brackets.

RECTANGULAR HANDRAIL

1.5mm wall thickness



Length m	Code
3.0	18067044010
6.0	18067004010

JOINER



Code
18062064010

90° JOINER



Code
18062024010

ADJUSTABLE CONNECTOR



Code
18062274010

END CAP



Code
18062144010

HANDRAIL BRACKET

Wall mounting



Code
18063054010

ADJUSTABLE HANDRAIL BRACKET

Glass/flat



Ø mm	To Suit	Code
50	Flat	1806334FF

82mm distance from glass to centre of bracket. To suit 12 - 30mm glass thickness.

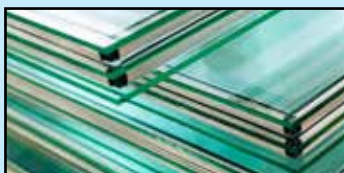
ADJUSTABLE HANDRAIL BRACKET

Wall/flat



□ mm	To Suit	Code
40	Flat	1806303S40F

92mm distance from wall to centre of bracket. Requires threaded dowel code: **189900622** for wall fixing.



**FOR OUR RANGE OF GLASS PANELS,
SEE PAGE 72.**

TUBE & BAR



HOLLOW TUBE FOR HANDRAILS & POSTS



1.0m LENGTH

Ø mm	Code
42.4	1804708CB
48.3	1804708DB
42.4	1806708CB
48.3	1806708DB

2mm wall thickness.

1.2m LENGTH

Ø mm	Code
42.4	1804708CL
48.3	1804708DL
42.4	1806708CL
48.3	1806708DL

2mm wall thickness.

3.0m LENGTH

Ø mm	Code
42.4	1804704C
48.3	1804704D
42.4	1806704C
48.3	1806704D

2mm wall thickness.

6.0m LENGTH

Ø mm	Code
42.4	1804700C
48.3	1804700D
42.4	1806700C
48.3	1806700D

2mm wall thickness.

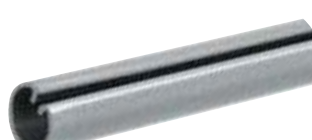
HOLLOW TUBE



SOLID BAR



SPLIT TUBE



HOLLOW TUBE



Ø mm	Length m	Code
12	3	1804510
12	3	1806510

1mm wall thickness.

Ø mm	Length m	Code
12	3	1804500
12	3	1806500

Ø mm	Length m	Code
18	3	1504P011

1.25mm wall thickness.

Ø mm	Length m	Code
42.4	6	13i0016000

2mm wall thickness. Zinc plated.

MIRROR FINISH HOLLOW TUBE



SQUARE HOLLOW TUBE



3.0m LENGTH

Ø mm	Code
42.4	1806704CM
48.3	1806704DM

2mm wall thickness.

6.0m LENGTH

Ø mm	Code
42.4	1806700CM
48.3	1806700DM

2mm wall thickness.

□ mm	Length m	Code
40	2.9	1806704S40
40	5.8	1806700S40

2.5mm wall thickness.

END CAPS

FLAT TOP



7 GROOVE FLAT TOP



RAISED TOP



DOME TOP



Ø mm	Code
42.4	1804214C
48.3	1804214D
42.4	1806214C
48.3	1806214D

Ø mm	Code
42.4	1806274C
48.3	1806274D

Glue fit.

Ø mm	Code
42.4	1804215C
48.3	1804215D
42.4	1806215C
48.3	1806215D

Ø mm	Code
42.4	1804216C
48.3	1804216D
42.4	1806216C
48.3	1806216D

ALL STAINLESS FITTINGS ARE SUPPLIED IN A SATIN POLISH FINISH GRIT 320.
THEY CAN ALSO BE SUPPLIED IN A MIRROR POLISH FINISH.



HANDRAIL BRACKETS

ADJUSTABLE HEIGHT - FIXED SPIGOT

FLAT/TUBE



Ø mm	Code
42.4	1804301FC
48.3	1804301FD
42.4	1806301FC
48.3	1806301FD

65mm distance from flat to centre of bracket.

TUBE/TUBE



Ø mm	Code
42.4	1804301CC
48.3	1804301DD
42.4	1806301CC
48.3	1806301DD

65mm distance from tube to centre of bracket.

WALL/TUBE



Ø mm	Code
42.4	1804303FC
48.3	1804303FD
42.4	1806303FC
48.3	1806303FD

68mm distance from wall to centre of bracket.

GLASS/TUBE



Ø mm	Code
42.4	1804333FC
48.3	1804333FD
42.4	1806333FC
48.3	1806333FD

82mm distance from glass to centre of bracket. To suit 12 - 30mm glass thickness.

FIXED SPIGOT

WALL/TUBE



Ø mm	Code
42.4	1804305FC
48.3	1804305FD
42.4	1806305FC
48.3	1806305FD

63.5mm distance from wall to centre of bracket.

WALL/TUBE



Ø mm	Code
42.4	1804305FCB
48.3	1804305FDB
42.4	1806305FCB
48.3	1806305FDB

85mm distance from wall to centre of bracket.

WALL/FLAT



Code
1804305FF

63.5mm distance from wall to centre of bracket.

SINGLE WALL MOUNT

WALL/TUBE



Ø mm	Code
42.4	1804315FC
48.3	1804315FD
42.4	1806315FC
48.3	1806315FD

72mm distance from wall to centre of bracket. Supplied with 8mm screw thread for wall fixing.

ADJUSTABLE SPIGOT WALL/TUBE



Adjustable angle

Ø mm	Code
42.4	1804308FC
48.3	1804308FD
42.4	1806308FC
48.3	1806308FD

85mm distance from wall to centre of bracket.

SATIN POLISH WELDABLE HANDRAIL BRACKET & COVER PLATE



Code
171166
171169

76mm distance from wall to centre of bracket.

HANDRAIL BRACKET PLATE & RUBBERS

To suit glass balustrading



Ø mm	Glass mm	Code
50	8 - 19	1804358G
50	8 - 19	1806358G

Glass hole size Ø 22mm. M8 thread.

ALLEN KEY

For tightening grub screws in handrail brackets



Code
189900607

PRO-RAILING®

TOPS COME WITH 5mm FIXING HOLES. FOR FIXING SCREWS, SEE PAGE 42.

RAILING SADDLES



FIXED SPIGOT

FLOOR/TUBE



Ø mm	Code
42.4	1804307FC
48.3	1804307FD
42.4	1806307FC
48.3	1806307FD

TUBE/TUBE



Ø mm	Code
42.4	1804310CC
48.3	1804310DD
42.4	1806310CC
48.3	1806310DD

90° TUBE/TUBE



Ø mm	Code
42.4	1804311CC
48.3	1804311DD
42.4	1806311CC
48.3	1806311DD

Height 62mm.

For 201 type elbows used with handrails.

ADJUSTABLE SPIGOTS

TUBE/TUBE



Ø mm	Code
42.4	1804312CC
48.3	1804312DD
42.4	1806312CC
48.3	1806312DD

ADJUSTABLE HANDRAIL SUPPORT BRACKET



Adjustable angle

Ø mm	Code
42.4	1804314CC
48.3	1804314DD
42.4	1806314CC
48.3	1806314DD

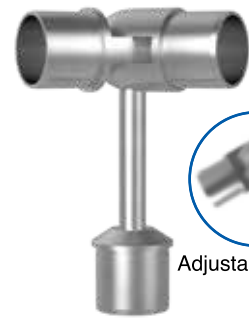
HANDRAIL SUPPORT BRACKETS

HANDRAIL BRACKET WITH 90° FIXED ELBOW



Ø mm	Code
42.4	1804311CCA
48.3	1804311DDA
42.4	1806311CCA
48.3	1806311DDA

HANDRAIL BRACKET WITH +/- 90° ADJUSTABLE ELBOW



Adjustable angle

Ø mm	Code
42.4	1804317CCA
48.3	1804317DDA
42.4	1806317CCA
48.3	1806317DDA

FIXED SADDLE

90° CORNER TOP



Ø mm	Code
42.4	1804356C
48.3	1804356D
42.4	1806356C
48.3	1806356D
Flat	1804356F
Flat	1806356F

135° ROUND CORNER TOP



Ø mm	Code
42.4	1804354C
48.3	1804354D
48.3	1806354D
Flat	1804354F
Flat	1806354F

STRAIGHT TOP



Ø mm	Code
42.4	1804351C
48.3	1804351D
42.4	1806351C
48.3	1806351D
Flat	1804351F
Flat	1806351F

FIXINGS

COBALT DRILL BIT



Description	Code
4.2mm drill for 5mm self tapping screw	189901004
4.5mm drill for 5mm hread rolling bolt	189901005
5.5mm drill for 6mm thread rolling bolt	189901006

FIXINGS

COUNTERSUNK SCREW

For fixing saddle to spigot



Ø x L mm	Code
M6 x 20	189900603
M8 x 20	189900604

COUNTERSUNK SCREW

For fixing flat saddles



Ø x L mm	Code
M5 x 20	189900619

PAN HEAD SCREW

For fixing Ø 42.4 & 48.3mm saddles



Ø x L mm	Code
M5 x 20	189900620

BUTTON HEAD BOLT

For fixing handrail brackets, glass tube fittings & rod connectors



Ø x L mm	Code
M5 x 20	189900618

PAN HEAD THREAD ROLLING BOLT

For fixing railing saddles to tube



Ø x L mm	Code
M5 x 20	189900686
M6 x 20	189900687

PRO-RAILING®

**90° ELBOW
RADIUSED CORNER**



Ø mm	Code
42.4	1804200C
48.3	1804200D
42.4	1806200C
48.3	1806200D

**90° ELBOW
ROUND CORNER**



Ø mm	Code
42.4	1804201C
48.3	1804201D
42.4	1806201C
48.3	1806201D

**90° ELBOW
SQUARE CORNER**



Ø mm	Code
42.4	1804202C
48.3	1804202D
42.4	1806202C
48.3	1806202D

135° ELBOW



Ø mm	Code
42.4	1804220C
48.3	1804220D
42.4	1806220C
48.3	1806220D

**STAINLESS
WELDABLE ELBOW**



Ø mm	Code
42.4	1804E42
48.3	1804E48
42.4	1806E42
48.3	1806E48

**ADJ. ELBOW
+/- 90°**



Ø mm	Code
42.4	1804203C
48.3	1804203D
42.4	1806203C
48.3	1806203D

**ADJ. ELBOW
SMOOTH 0 - 70°**



Ø mm	Code
42.4	1804227C
48.3	1804227D
42.4	1806227C
48.3	1806227D

ROTATING ELBOW



Ø mm	Code
42.4	1804233C
48.3	1804233D
42.4	1806233C
48.3	1806233D

**ADJ. HANDRAIL
ADAPTOR 0 - 70°**



Ø mm	Code
42.4	1806316CC
48.3	1806316DD

TUBE ADAPTOR



Ø mm	Code
42.4	1804313CC
48.3	1804313DD
42.4	1806313CC
48.3	1806313DD

3 WAY CORNER



Ø mm	Code
42.4	1804204C
48.3	1804204D
42.4	1806204C
48.3	1806204D

LONG TEE



Ø mm	Code
42.4	1804205C
48.3	1804205D
42.4	1806205C
48.3	1806205D

4 WAY CROSS



Ø mm	Code
42.4	1804222C
48.3	1804222D
42.4	1806222C
48.3	1806222D

SCROLL END



Ø mm	Code
42.4	1804221C
48.3	1804221D
42.4	1806221C
48.3	1806221D

**IN-LINE
CONNECTOR**



Ø mm	Code
42.4	1804206C
48.3	1804206D
42.4	1806206C
48.3	1806206D

**2 WAY ADJ.
FLUSH ANGLE**



Ø mm	Code
48.3	1804223D
48.3	1806223D



**3 WAY ADJ.
FLUSH ANGLE**



Ø mm	Code
48.3	1804224D
42.4	1806224C
48.3	1806224D

**PANEL INFILL
ADAPTOR**



Ø mm	Code
42.4	1804503C
48.3	1804503D
42.4	1806503C
48.3	1806503D

Requires 6mm fixing bolt
code: **189900621**. Suits
material 1.5 - 10mm thick.

FLANGES & BASE PLATES



**EXTERNAL ROUND
TUBE FLANGE**



Ø mm	Code
42.4	1804209C
48.3	1804209D
42.4	1806209C
48.3	1806209D

**SQUARE EDGE
TUBE FLANGE**



Ø mm	Code
42.4	1804210C
48.3	1804210D
42.4	1806210C
48.3	1806210D

**WELDABLE ROUND
WALL FLANGE**



Ø mm	Code
42.4	1804217C
48.3	1804217D
42.4	1806217C
48.3	1806217D

COVER PLATE
To suit 217



Ø mm	Code
42.4	1804218C
48.3	1804218D
42.4	1806218C
48.3	1806218D

INTERNAL FIT FLOOR BASE
Glue fix



Ø mm	Code
42.4	1804225C
48.3	1804225D
42.4	1806225C
48.3	1806225D

WELD ON ROUND BASE PLATE
With 'O' ring & cover



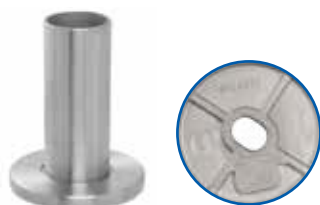
Ø mm	Code
42.4	1804228C
48.3	1804228D
42.4	1806228C
48.3	1806228D

**ADJUSTABLE ELBOW
TUBE FLANGE**



Ø mm	Code
42.4	1804229C
48.3	1804229D
42.4	1806229C
48.3	1806229D

INTERNAL FIT TUBE FLANGE
Glue fix, no cover plate required



Ø mm	Code
42.4	1804237C
48.3	1804237D
42.4	1806237C
48.3	1806237D

INTERNAL FIT TUBE FLANGE
Glue fix



Ø mm	Code
42.4	1804235C
48.3	1804235D
42.4	1806235C
48.3	1806235D

INTERNAL FIT TUBE FLANGE
Hammer fix



Ø mm	Code
42.4	1804239C
48.3	1804239D
42.4	1806239C
48.3	1806239D

**WELD ON ROUND
BASE PLATE**



Ø mm	Code
42.4	1804207C
48.3	1804207D
42.4	1806207C
48.3	1806207D

COVER PLATE



Ø mm	To Suit 207 Code	To Suit 225 Code	To Suit 235 Code
42.4	1804208C	1804226C	1804236C
48.3	1804208D	1804226D	1804236D
42.4	1806208C	1806226C	1806236C
48.3	1806208D	1806226D	1806236D

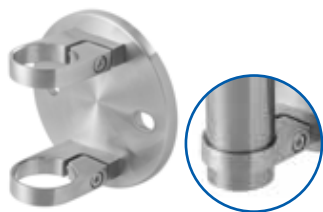
To keep stainless steel handrail & fittings in top condition long after installation, use our tea staining kit, see page 67.





BALUSTER BRACKETS

2 HOLE ROUND



Ø mm	Code
42.4	1804212C
48.3	1804212D
42.4	1806212C
48.3	1806212D

2 HOLE ROUND With tube support spigot



Ø mm	Code
42.4	1804219C
48.3	1804219D
42.4	1806219C
48.3	1806219D

2 HOLE ROUND FOLDED Weld fix



Ø mm	Code
42.4	1806256C
48.3	1806256D

ADJUSTABLE CORNER - INTERNAL/EXTERNAL



Ø mm	Code
42.4	1806253C
48.3	1806253D

4 HOLE ROUND BACKING PLATE



Code
1806254

Suitable for Ø 42.4 and 48.3mm.

2 HOLE ROUND BACKING PLATE



Code
1804252
1806252

Suitable for Ø 42.4 and 48.3mm.

TUBE CLAMP



Ø mm	Code
42.4	1804252C
42.4	1806252C
48.3	1806252D

TUBE SUPPORT For wall baluster bracket



Ø mm	Code
42.4	1804259C
48.3	1804259D
42.4	1806259C
48.3	1806259D

RECTANGULAR BACK



Ø mm	Code
42.4	1806213C
48.3	1806213D

FASCIA BRACKET



Ø mm	Code
42.4	1806258C
48.3	1806258D

WALL BRACKET



Ø mm	Code
48.3	1806257D

TUBE SUPPORT



Ø mm	Code
48.3	1806519D

For extra support.

SINGLE SIDE SUPPORT



Ø mm	Code
42.4	1804511C
42.4	1806511C
48.3	1806511D

DOUBLE SIDE SUPPORT



Ø mm	Code
42.4	1804512C
42.4	1806512C
48.3	1806512D

TUBE TO WALL CONNECTOR



Ø mm	Code
42.4	1804255C
48.3	1804255D
42.4	1806255C
48.3	1806255D

PRO-RAILING®













IMAGE SHOWS TUBE TO WALL
CONNECTOR CODE: 1804255C.

GLASS CLAMPS

FOR OUR GLASS RANGE,
SEE PAGES 72 - 76.

The most popular method for providing a glazed balustrade, while at the same time keeping the outlook open and views beyond visible. Glass clamps are simple to install and are offered in either a square or radiused option, providing a glazed system between posts. Compatible with 8 to 21.5mm thick glass, clamps can be used over any length of installation as well as slopes and staircases.

Code Group	Style	To Suit Glass Thickness	Fix Type	Description	Measurements	Page no.
400		<ul style="list-style-type: none"> 6mm 8mm 	<ul style="list-style-type: none"> Flat 	<ul style="list-style-type: none"> Available in Stainless steel Grade 316 Satin polish effect 	<ul style="list-style-type: none"> Height: 26mm Length: 40mm Depth: 16mm 	47
441		<ul style="list-style-type: none"> 10mm 	<ul style="list-style-type: none"> Flat 	<ul style="list-style-type: none"> Available in Stainless steel Grade 304 & 316 Satin polish effect 	<ul style="list-style-type: none"> Height: 42mm Length: 52mm Depth: 22mm 	47
401		<ul style="list-style-type: none"> 8mm 10mm 12mm 	<ul style="list-style-type: none"> Ø 42.4mm Ø 48.3mm Flat 	<ul style="list-style-type: none"> Available in Stainless steel Grade 304, 316, Zamac & chrome mirror effect Satin polish effect, mirror & raw finish 	<ul style="list-style-type: none"> Height: 45mm Length: 63mm Depth: 28mm 	47
401180		<ul style="list-style-type: none"> 8mm 10mm 12mm 	<ul style="list-style-type: none"> Glass to glass 	<ul style="list-style-type: none"> Available in Stainless steel Grade 304 & 316 Satin polish effect 	<ul style="list-style-type: none"> Height: 45mm Length: 107mm Depth: 28mm 	47
40190		<ul style="list-style-type: none"> 8mm 10mm 12mm 	<ul style="list-style-type: none"> Glass to glass 	<ul style="list-style-type: none"> Available in Stainless steel Grade 304 & 316 Satin polish effect 	<ul style="list-style-type: none"> Height: 45mm Length: 73mm Width: 73mm Depth: 28mm 	47
440		<ul style="list-style-type: none"> 15mm 17.5mm 19mm 21.5mm 	<ul style="list-style-type: none"> Flat 	<ul style="list-style-type: none"> Available in Stainless steel Grade 316 Satin polish effect 	<ul style="list-style-type: none"> Height: 70mm Length: 60mm Depth: 41mm 	47
442		<ul style="list-style-type: none"> 6mm 8mm 10mm 	<ul style="list-style-type: none"> Ø 42.4mm Ø 48.3mm Flat 	<ul style="list-style-type: none"> Available in Stainless steel Grade 316 Satin polish effect 	<ul style="list-style-type: none"> Height: 45mm Length: 45mm Depth: 19.5mm 	48
402		<ul style="list-style-type: none"> 8mm 10mm 12mm 	<ul style="list-style-type: none"> Ø 42.4mm Ø 48.3mm Flat 	<ul style="list-style-type: none"> Available in Stainless steel Grade 304, 316 & Zamac Satin polish effect, mirror & raw finish 	<ul style="list-style-type: none"> Height: 55mm Length: 60mm Depth: 35mm 	48
445		<ul style="list-style-type: none"> 15mm 17.5mm 19mm 21.5mm 	<ul style="list-style-type: none"> Flat 	<ul style="list-style-type: none"> Available in Stainless steel Grade 316 Satin polish effect 	<ul style="list-style-type: none"> Height: 70mm Length: 60mm Depth: 44mm 	48
403		<ul style="list-style-type: none"> 8mm 10mm 12mm 	<ul style="list-style-type: none"> Ø 42.4mm Ø 48.3mm Flat 	<ul style="list-style-type: none"> Available in Stainless steel Grade 304 & 316 Satin polish effect 	<ul style="list-style-type: none"> Ø: 60mm Depth: 28mm 	49

PRO-RAILING®

ROUND FRONT

**SATIN POLISH EFFECT
SMALL GLASS CLAMP**
Flat back



Glass mm	Code
6	1806400F06
8	1806400F

Not suitable for handrailing applications. Typical uses are for display and shelving.

**SATIN POLISH EFFECT
STAMPED GLASS CLAMP**
Flat back



Glass mm	Code
10	1804441F
10	1806441F

Not suitable for handrailing applications. Typical uses are for display and shelving.

RAW FINISH
Flat back



Glass mm	Back	Code
8	Flat	1802401FZ08
10	Flat	1802401FZ

Suitable for powder coating.

RAW FINISH
Round back



Glass mm	Ø mm	Code
8	42.4	1802401CZ08
10	42.4	1802401CZ
8	48.3	1802401DZ08
10	48.3	1802401DZ

Suitable for powder coating.

SATIN POLISH EFFECT
Flat back



Glass mm	Code
8	1802401F08
10	1802401F
8	1804401F08
10	1804401F
12	1804401F12
8	1806401F08
10	1806401F
12	1806401F12

SATIN POLISH EFFECT
Round back



Glass mm	Ø mm	Code
8	42.4	1802401C08
10	42.4	1802401C
8	48.3	1802401D08
10	48.3	1802401D
8	42.4	1804401C08
10	42.4	1804401C
12	42.4	1804401C12
8	48.3	1804401D08
10	48.3	1804401D
12	48.3	1804401D12
8	42.4	1806401C08
10	42.4	1806401C
12	42.4	1806401C12
8	48.3	1806401D08
10	48.3	1806401D
12	48.3	1806401D12

CHROME MIRROR EFFECT
Flat back



Glass mm	Back	Code
8	Flat	1802401FP08
10	Flat	1802401FP

CHROME MIRROR EFFECT
Round back



Glass mm	Ø mm	Code
8	42.4	1802401CP08
10	42.4	1802401CP

MIRROR FINISH
Flat back



Glass mm	Code
8	1806401FM08
10	1806401FM

MIRROR FINISH
Round back



Glass mm	Ø mm	Code
8	42.4	1806401CM08
10	42.4	1806401CM
8	48.3	1806401DM08
10	48.3	1806401DM

**FOR VARIABLE
FIXING BOLT
CODE: 189900602A,
SEE PAGE 48**

**SATIN POLISH EFFECT
180° DOUBLE GLASS CLAMP**



Glass mm	Code
8	180440118008
10	1804401180
12	180440118012
8	180640118008
10	1806401180
12	180640118012

**SATIN POLISH EFFECT
90° DOUBLE GLASS CLAMP**



Glass mm	Code
8	18044019008
10	180440190
12	18044019012
8	18064019008
10	180640190
12	18064019012

**SATIN POLISH EFFECT
LARGE GLASS CLAMP**
Flat back



Glass mm	Code
15.0	1806440F
17.5	1806440F175
19.0	1806440F19
21.5	1806440F215

GLASS CLAMPS



SQUARE FRONT

SATIN POLISH EFFECT SMALL GLASS CLAMP
Flat back



Glass mm	Code
6	1806442F06
8	1806442F08
10	1806442F

SATIN POLISH EFFECT SMALL GLASS CLAMP
Round back



Glass mm	Ø mm	Code
6	42.4	1806442C06
8	42.4	1806442C08
10	42.4	1806442C
6	48.3	1806442D06
8	48.3	1806442D08
10	48.3	1806442D

RAW FINISH
Round back



Glass mm	Ø mm	Code
8	42.4	1802402CZ08
10	42.4	1802402CZ
12	42.4	1802402CZ12

SATIN POLISH EFFECT
Round back



Glass mm	Ø mm	Code
8	42.4	1802402C08
10	42.4	1802402C
12	42.4	1802402C12
8	48.3	1802402D08
10	48.3	1802402D
12	48.3	1802402D12
8	42.4	1804402C08
10	42.4	1804402C
12	42.4	1804402C12
8	48.3	1804402D08
10	48.3	1804402D
12	48.3	1804402D12
8	42.4	1806402C08
10	42.4	1806402C
12	42.4	1806402C12
8	48.3	1806402D08
10	48.3	1806402D
12	48.3	1806402D12

SATIN POLISH EFFECT
Flat back



Glass mm	Code
8	1802402F08
10	1802402F
12	1802402F12
8	1804402F08
10	1804402F
12	1804402F12
8	1806402F08
10	1806402F
12	1806402F12

SPARE RUBBERS

Glass Clamp Code Group	Glass mm	Code
400	6.00	1899001S06
401	8.00	189900108
	8.76	18990010876
	10.00	189900110
	12.00	189900112
440	15.00	1899001L15
	17.50	1899001L175
	19.00	1899001L19
	21.50	1899001L215
442	6.00	189944206
	8.00	189944208
	10.00	189944210
	12.00	189900208
402	8.00	189900208
	10.00	189900210
	12.00	189900212
445	15.0	1899002L15
	17.5	1899002L175
	19.0	1899002L19
	21.5	1899002L215

SATIN POLISH EFFECT
LARGE GLASS CLAMP
Flat back



Glass mm	Code
15.0	1806445F
17.5	1806445F175
19.0	1806445F19
21.5	1806445F215

FIXINGS

METAL SECURITY PINS
For Glass



Glass mm	Code
8 - 10	189900401
12	189900402

Requires a minimum Ø 10mm hole in glass.

PLASTIC SCREW COVER CAPS



Colour	Code
Grey	189900501
Silver	189900502

VARIABLE FIXING BOLT
To give +/- 5° adjustment



Ø x Length mm	Code
M8 x 20	189900602A

SOCKET HEAD CAP SCREW
For fixing glass clamps into posts



Ø x Length mm	Code
M8 x 20	13I0323*
M6 x 20	189900601
M8 x 20	189900602

*Zinc plated.

ALLEN KEY



To suit	Code
8mm bolts	189900605
6mm bolts	189900608

**FOR OUR GLASS RANGE,
SEE PAGES 72 - 76.**



IN-LINE GLASS CONNECTORS

SATIN POLISH
Flat back



Glass mm	Code
8	1806403F08
10	1806403F
12	1806403F12

SATIN POLISH
Round back



Glass mm	Ø mm	Code
8	42.4	1806403C08
10	42.4	1806403C
12	42.4	1806403C12
8	48.3	1806403D08
10	48.3	1806403D
12	48.3	1806403D12

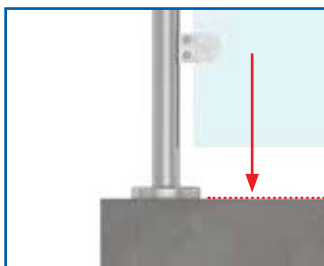
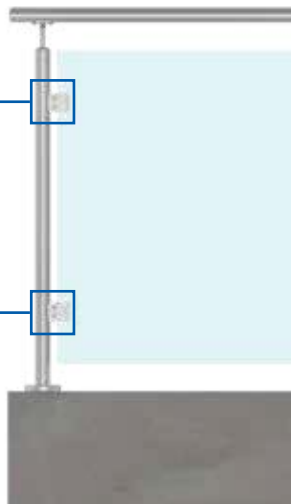
IN-LINE RUBBERS



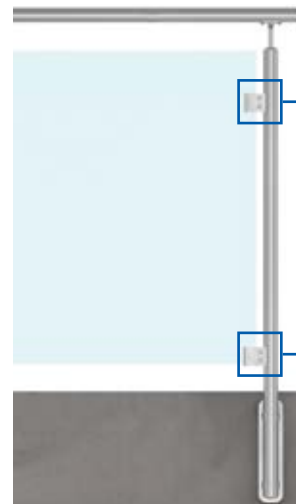
Glass mm	Code
8	189900308
10	189900310
12	189900312

GLASS FIXING INFORMATION

If using glass clamps in any installation where the glass is fixed to the outside of a staircase and overhanging, then security pins (code: **189900401** or **189900402**) and drilled glass must be used. Alternatively use our square glass clamps which come with a bottom location plate, so no drilling is required.



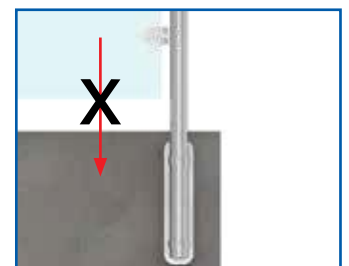
X Pin - **189900401** or **189900402** not required



Location plate required on lower clamp.



✓ Pin - **189900401** or **189900402** required
Requires a minimum Ø 10mm holes in glass.



PRO-RAILING®



**FOR OUR RANGE OF GLASS PANELS,
SEE PAGE 72.**

STIFFENERS



FEATURES:

- A slimmer frameless panel support system
- To suit 10 - 21.5mm glass
- Supplied with rubbers
- BZP or Duplex 2205 (ultra marine stainless)
- Products are available in BZP and satin finish
- To join glass panels & tie glass panels back to the building

WHERE NO HANDRAIL IS USED,
WE ALWAYS RECOMMEND
USING LAMINATE GLASS
SEE PAGE 76.

90° BRACKET



180° BRACKET



ADJUSTABLE 90 - 180°
BRACKET



WALL BRACKET

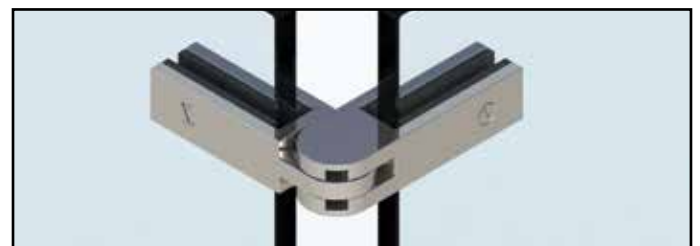


Glass mm	Code
10.00 - 12.00	180242112B
13.52 - 15.00	180242115B
16.76 - 19.00	180242119B
20.00 - 21.50	180242122B
10.00 - 12.00	182242112
13.52 - 15.00	182242115
16.76 - 19.00	182242119
20.00 - 21.50	182242122

Glass mm	Code
10.00 - 12.00	180242212B
13.52 - 15.00	180242215B
16.76 - 19.00	180242219B
20.00 - 21.50	180242222B
10.00 - 12.00	182242212
13.52 - 15.00	182242215
16.76 - 19.00	182242219
20.00 - 21.50	182242222

Glass mm	Code
10.00 - 12.00	180242312B
13.52 - 15.00	180242315B
16.76 - 19.00	180242319B
20.00 - 21.50	180242322B
10.00 - 12.00	182242312
13.52 - 15.00	182242315
16.76 - 19.00	182242319
20.00 - 21.50	182242322

Glass mm	Code
10.00 - 12.00	180242012B
13.52 - 15.00	180242015B
16.76 - 19.00	180242019B
20.00 - 21.50	180242022B
10.00 - 12.00	182242012
13.52 - 15.00	182242015
16.76 - 19.00	182242019
20.00 - 21.50	182242022



GLASS CONNECTOR

DOMED FRONT & BACK



Ø mm	Glass mm	Code
50	12 - 21.5	1806454





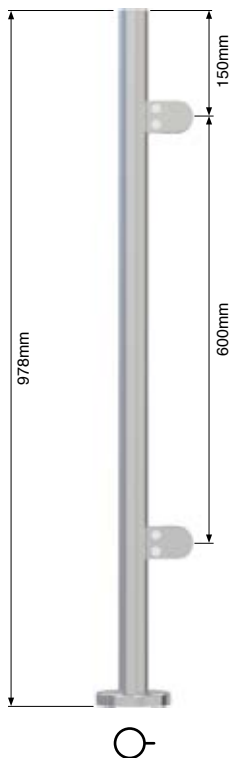
MIRROR FINISH POSTS

BOLT-DOWN



TESTED TO
BS 6180

END POST



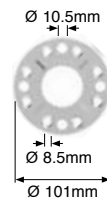
Ø mm	Code
42.4	1806791CM

MID POST

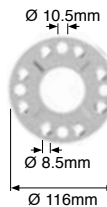


Ø mm	Code
42.4	1806792CM

Ø 42.4mm POST
BASE PLATE



Ø 48.3mm POST
BASE PLATE



CORNER POST

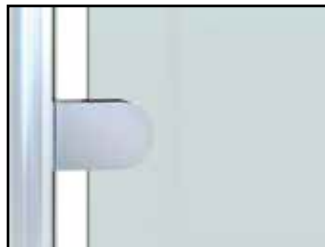


Ø mm	Code
42.4	1806793CM

ALL POSTS HAVE:



Welded base fitting complete with rubber 'O' ring and cover.



Glass clamp for 10mm glass (8 and 12mm rubbers available).



Variable fixing bolt.

ALLEN KEY



Code
189900606

PRO-RAILING®



FOR OUR RANGE OF MIRROR FINISH FITTINGS, SEE PAGE 53.



MIRROR FINISH POSTS

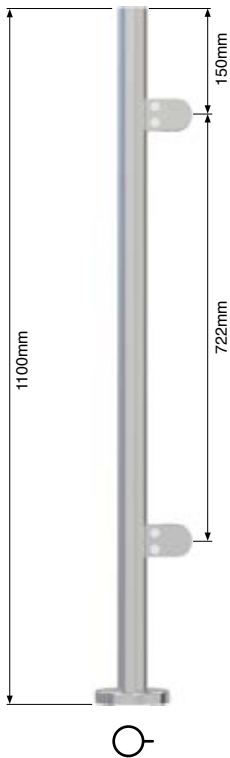


BOLT-DOWN



TESTED TO
BS 6180

END POST



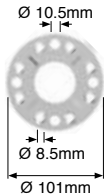
MID POST



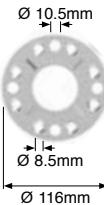
CORNER POST



Ø 42.4mm POST
BASE PLATE



Ø 48.3mm POST
BASE PLATE



Mirror finish offers better resistance to tea staining in coastal areas. but to keep stainless steel handrail & fittings in top condition long after installation, use our tea staining kit, see page 67.



FOR OUR MIRROR
FINISH SPLIT TUBE
FITTINGS, SEE
PAGE 54.

FOR OUR RANGE
OF GLASS PANELS,
SEE PAGE 72.

MIRROR FINISH HOLLOW TUBE



3.0m LENGTH

Ø mm	Code
42.4	1806704CM
48.3	1806704DM

2mm thickness.

6.0m LENGTH

Ø mm	Code
42.4	1806700CM
48.3	1806700DM

2mm thickness.

FOR OUR FULL RANGE OF PRE-ASSEMBLED POSTS SEE PAGE 24.



MIRROR FINISH FITTINGS

**HANDRAIL BRACKET
FIXED SPIGOT**
Wall/tube



Ø mm	Code
42.4	171176CM
48.3	171176DM

85mm distance from wall to
centre of bracket.

**90° FIXED SPIGOT
SADDLE**
Tube/tube



Ø mm	Code
42.4	1806311CCM

**ADJUSTABLE SPIGOT
SADDLE**
Tube/tube



Ø mm	Code
42.4	1806312CCM

**90° ELBOW ROUND
CORNER**



Ø mm	Code
42.4	1806201CM

ADJUSTABLE ELBOW



Ø mm	Code
42.4	1806203CM

**ADJUSTABLE ELBOW
SMOOTH**



Ø mm	Code
42.4	1806227CM

SCROLL END



Ø mm	Code
42.4	1806221CM

TUBE ADAPTOR



Ø mm	Code
42.4	1806313CCM

IN-LINE CONNECTOR



Ø mm	Code
42.4	1806206CM

**EXTERNAL ROUND
TUBE FLANGE**



Ø mm	Code
42.4	1806209CM

**2 HOLE BALUSTER
BRACKET**



Ø mm	Code
42.4	1806212CM

WELD ON BASE PLATE
With 'O' ring & cover



Ø mm	Code
42.4	1806228CM

COVER PLATE

To suit 235C, see page 44



Ø mm	Code
42.4	1806236CM

RAISED TOP END CAP



Ø mm	Code
42.4	1806215CM

**7 GROOVE FLAT TOP
END CAP**



Ø mm	Code
42.4	1806274CM
48.3	1806274DM

Glue fit.

TUBE



Ø mm	Length m	Code
42.4	3	1806704CM
42.4	6	1806700CM
48.3	3	1806704DM
48.3	6	1806700DM

2mm thickness.

MIRROR FINISH SPLIT TUBE SYSTEM

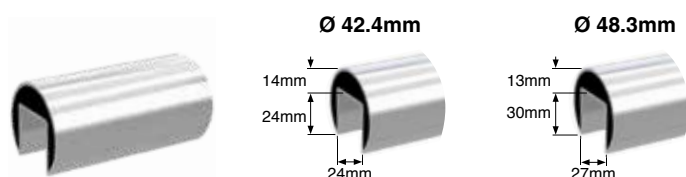


Ø 42.4 & 48.3mm PROFILES



SPLIT TUBE

1.5mm wall thickness



3m LENGTH

Ø mm	Code
42.4	18067053CM
48.3	18067053DM

6m LENGTH

Ø mm	Code
42.4	1806705CM
48.3	1806705DM

GASKET



Ø 42.4mm

Glass Thickness mm	Code
8 - 11	189903811C
11.5 - 13.5	189903115135C
15	18990315C
16 - 17.5	18990316175C
19	18990319C
20 - 21.5	18990320215C

Ø 48.3mm

Glass Thickness mm	Code
8 - 11	189903811D
11.5 - 13.5	189903115135D
15	18990315D
16 - 17.5	18990316175D
19	18990319D
20 - 21.5	18990320215D

90° HORIZONTAL CORNER



Ø mm	Code
42.4	1806411CM
48.3	1806411DM

25 - 55° DOWNWARDS ADJUSTABLE CONNECTOR



Ø mm	Code
42.4	1806416CM
48.3	1806416DM

25 - 55° UPWARDS ADJUSTABLE CONNECTOR



Ø mm	Code
42.4	1806417CM
48.3	1806417DM

END CAP



Ø mm	Code
42.4	1806413CM
48.3	1806413DM

WALL/FLOOR FLANGE



Ø mm	Code
42.4	1806415CM
48.3	1806415DM

TUBE ADAPTOR



Ø mm	Code
42.4	1806414CM

IN-LINE CONNECTOR



Ø mm	Code
42.4	1806412CM
48.3	1806412DM

PRO-RAILING®



GLASS GATE HARDWARE



MAGNETIC LATCH

Glass to glass



Glass Thickness mm	Code
8 - 12	1806517

Holes in glass required, screws compress plate onto glass.

SELF-CLOSING HINGE

Glass to glass



Glass Thickness mm	Code
8 - 12	1806515

Sold in pairs.

MAGNETIC LATCH

Glass to post



Glass Thickness mm	Code
8 - 12	1806518C

SELF-CLOSING HINGE

Glass to post



Glass Thickness mm	Code
8 - 12	1806516C

Sold in pairs.

LATCH & CATCH



Ø mm	Code
42.4	1806513C
48.3	1806513D

GATE HINGE PIN & BOLT



Ø mm	Code
42.4	1806514C
48.3	1806514D

SELF-CLOSING GLASS GATE HINGE



Type	To Suit Ø mm	Code
Vinyl	50	05GC09

For fixing 8 and 10mm glass weighing up to 25kg on to round posts. Glass needs to be pre-drilled. Sold in pairs.

SELF-CLOSING SAFETY GATE HINGE



Description	Code
For stainless tube	18SGH



FOR OUR RANGE OF GLASS PANELS, SEE PAGE 72.

PRO-RAILING®



Marano® railings are a range of innovative railing systems designed to be fully modular. The pre-assembled aluminium posts have a stunning satin anodised finish and are available in square and round profiles ready to install. Fully engineered to meet the requirements of most applications, the systems can be installed with or without a top rail to provide an economical solution for a post and glass panel design. Each system can be fully fitted using basic equipment.

FEATURES:

- Fully assembled posts
- Aluminium & satin anodised finish
- To suit 10mm glass
- Suitable for indoor & outdoor installations
- Quick, safe & easy installation
- Gap between handrail & glass is 80mm
- Bottom edge of glass to floor is 90mm
- Tested to 1.2m posts centres
- Posts available in bolt-down & side-fix
- Posts are supplied complete

SQUARE POSTS WITH HANDRAIL

Railing height 1125mm



- Glass panel is H 930 x W 1174mm

SQUARE POSTS WITHOUT HANDRAIL

Post height to 1100mm



- Glass panel is H 1010 x W 1174mm
- You will need to buy blanking caps or notched post caps to suit design.



Image shows a square post using a rectangular handrail.

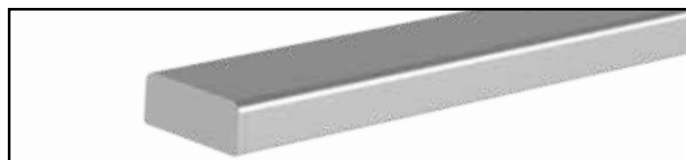


Image shows a round post using an oval handrail.

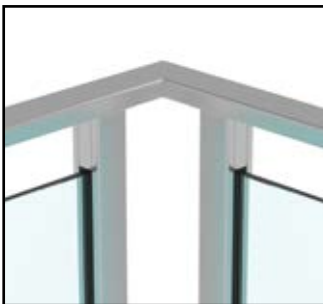


RECTANGULAR & OVAL HANDRAILS CAN BE USED WITH BOTH SQUARE & ROUND POSTS. FOR HANDRAILS SEE PAGE 58.



HOW TO TACKLE CORNERS

MITRED CUT NO POST

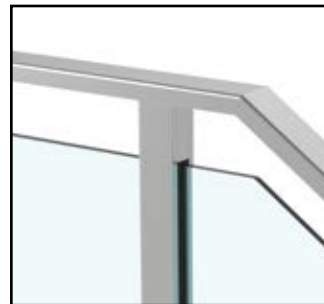


MITRED CUT WITH POST

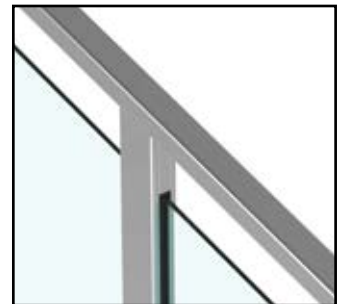


HOW TO TACKLE GRADIENTS

MITRED CUT HANDRAIL

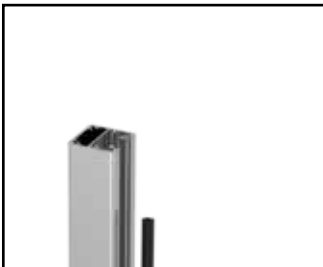


MITRED CUT POST

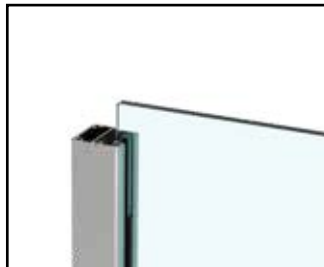


FITTING GLASS

Fitting glass is easy with our 4 step guide.



Fit back rubber to the post.



Slide glass in from the top between posts.



Fit glass retaining rubber, top packer & infill.

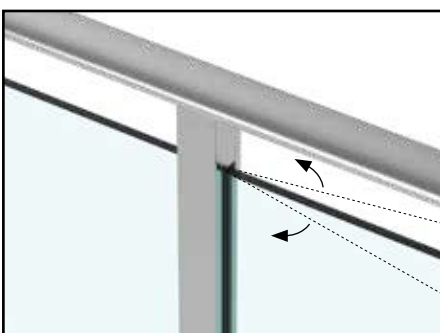


Fit the handrail (using the location jig, see page, 59). Slide on the handrail under-cap and top handrail.

When fitting glass make sure the back rubber is fitted to the post, then install retaining rubber once glass is in place.



POST HEIGHT



- Posts can be cut down if a shorter height is needed
- Capping will slide back in to give 80mm gap from glass to rail
- Allows 8 - 10° glass angle each side with rubbers

Spray soapy water on rubbers to help slide glass into rubber locators.



FOR OUR RANGE OF GLASS, SEE PAGE 72.

SQUARE

POSTS & GLASS PANELS

BOLT-DOWN END



Height mm	□ mm	Code
1100	50	6805791S50

Supplied with post caps, packers, rubbers, handrail screws and cover plate.

BOLT-DOWN MID



Height mm	□ mm	Code
1100	50	6805792S50

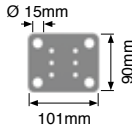
Supplied with post caps, packers, rubbers, handrail screws and cover plate.

BOLT-DOWN CORNER

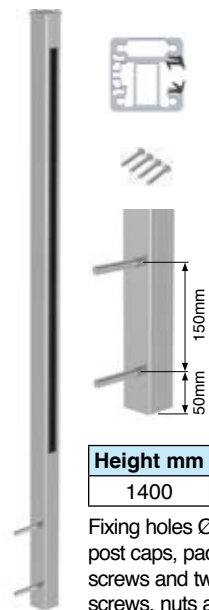


Height mm	□ mm	Code
1100	50	6805793S50

Supplied with post caps, packers, rubbers, handrail screws and cover plate.



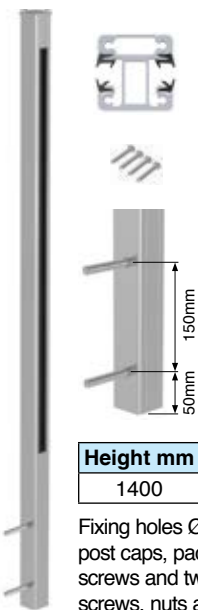
SIDE-FIX END



Height mm	□ mm	Code
1400	50	6805794S50

Fixing holes Ø 13mm. Supplied with post caps, packers, rubbers, handrail screws and two M12 x 120mm fixing screws, nuts and washers.

SIDE-FIX MID



Height mm	□ mm	Code
1400	50	6805795S50

Fixing holes Ø 13mm. Supplied with post caps, packers, rubbers, handrail screws and two M12 x 120mm fixing screws, nuts and washers.

CLEAR FLOAT TOUGHENED GLASS PANEL
For use with no handrail



Height mm	Width mm	Code
1010	1174	18551010101174

CLEAR FLOAT TOUGHENED GLASS PANEL
For use with Marano top rails



Height mm	Width mm	Code
930	1174	1855109301174

POST BLANKING CAPS

END CAP



Code
6805BCES50

MID CAP



Code
6805BCMS50

CORNER CAP



Code
6805BCCS50

NOTCHED POST CAPS

END CAP



Code
6805ECES50

Brings post height to 1100mm.

MID CAP



Code
6805ECMS50

Brings post height to 1100mm.

CORNER CAP



Code
6805ECCS50

Brings post height to 1100mm.



HANDRAILS

RECTANGULAR HANDRAIL



Length m	mm	Code
3.0	62 x 25	680570536225
5.8	62 x 25	68057056225

OVAL HANDRAIL



Length m	mm	Code
3.0	72 x 27	680570537227
5.8	72 x 27	68057057227

HANDRAIL/POST LOCATION JIGS

END/MID JIG

For drilling through handrail



Code
6899732J

Plastic.

CORNER JIG

For drilling through handrail



Code
6899733J

Plastic.

HANDRAIL FITTINGS

END CAP

For use with rectangular handrail



Code
68054136225

Supplied with two screws.

WALL BRACKET

For use with rectangular handrail



Code
68054156225

Supplied with four screws.

END CAP

For use with oval handrail



Code
68054137227

Supplied with two screws.

WALL BRACKET

For use with oval handrail



Code
68054157227

Supplied with four screws.

IN-LINE CONNECTOR

For use with rectangular & oval handrails



Code
6805412i

Internal fix. Supplied with four screws.

90° CORNER CONNECTOR

For use with rectangular & oval handrails



Code
6805411i

Internal fix. Supplied with four screws.

SPARES & ACCESSORIES

Product	Code
Base plate. For use with bolt-down posts	680520750
Cover plate. For use with bolt-down base plate	680520850
Blanking strip. For use with side-fix mid posts. 1.4m long	68BS1400
Rubber gasket set H 1100mm	68RG1100
Rubber gasket set H 6000mm	68RG6000
Packers. For use with posts. Pack of 10. Plastic	68PP01
Eraser for cleaning marks and scratches on anodising	6899AE01
Assembly tool. For rubber sealing strips	6899RR01

For corners with no post use a 90° corner connector to strengthen the handrail.

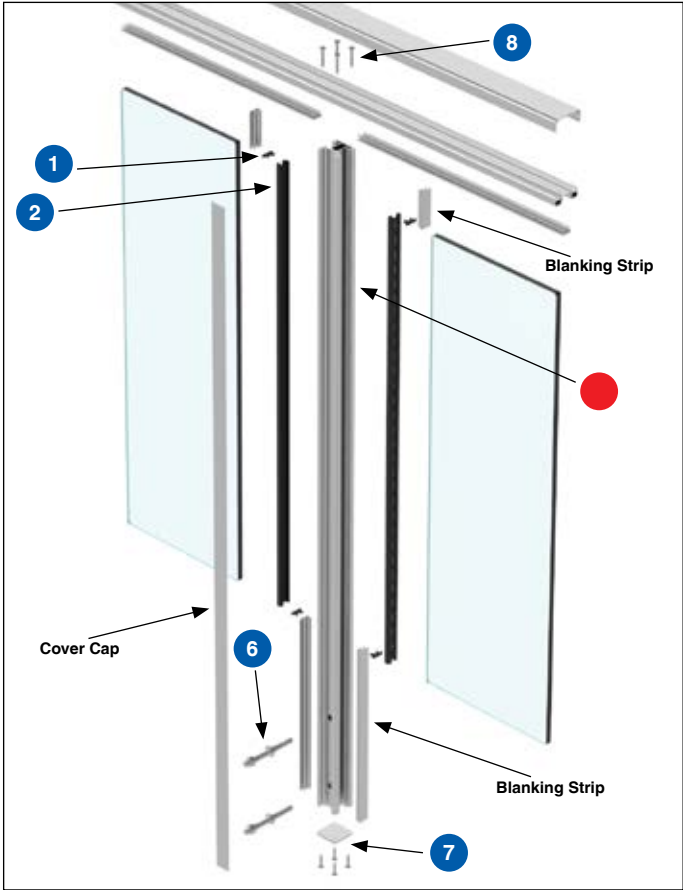
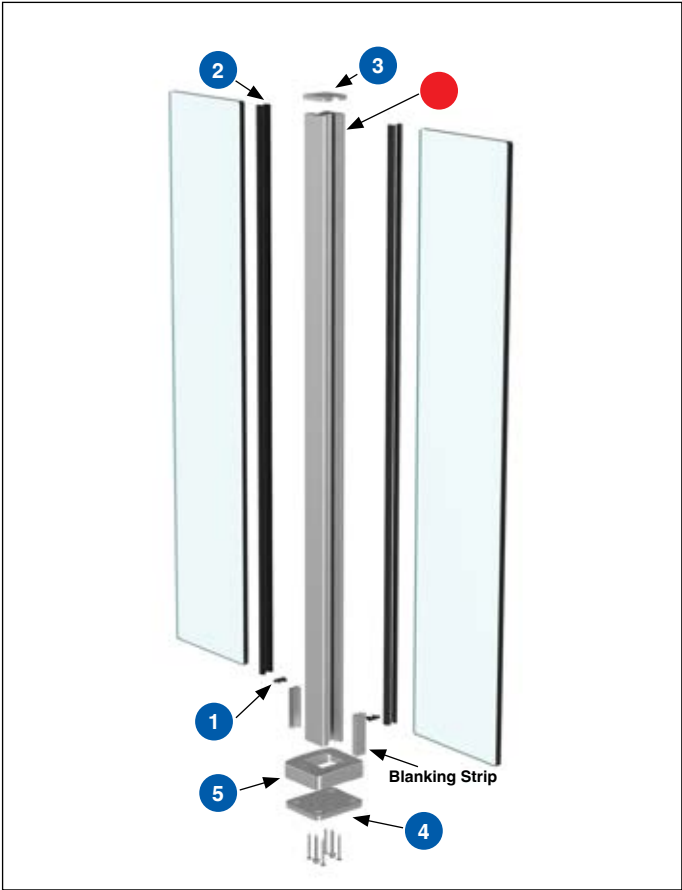


IF NO HANDRAIL IS REQUIRED, 1100mm RUBBERS WILL NEED TO BE ORDERED.

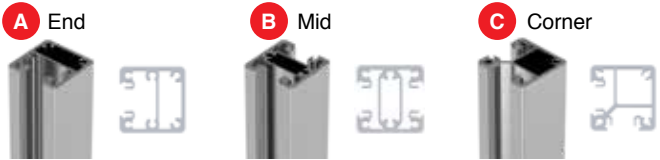
MARANO® MAKE YOUR OWN POSTS



SQUARE



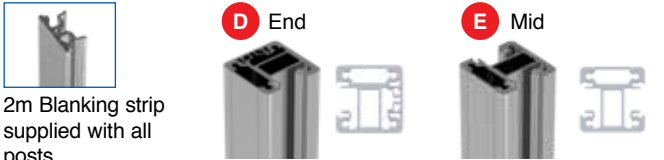
BOLT-DOWN EXTRUSION



Post	Height m	□ mm	Code
End	6	50	6805691S50
Mid	6	50	6805692S50
Corner	6	50	6805693S50

Supplied with 2m blanking strip. Please order rubber gaskets separately.

SIDE-FIX EXTRUSION



Post	Height m	□ mm	Code
End	6	50	6805694S50
Mid	6	50	6805695S50

Supplied with 2m blanking strip and 6m cover cap. Please order rubber gaskets separately.

PACKERS



Code
68PP01

Pack of 10. Plastic.

RUBBER GASKETS



Length m	Code
1.1	68RG1100
6.0	68RG6000

Sold in pairs, 1 x back rubber & 1 x glass retaining rubber.

POST CAP



Code
6805PC01

BASE PLATE

Use with bolt-down posts



Code
680520750

Supplied with 6 fixings.

COVER PLATE

Use with bolt-down base plate



Code
680520850

POST FIXINGS

Use with side-fix posts



Code
68PF01

Sold in pairs.

POST BASE COVER

Use with side-fix posts



Code
6805PBC01

Supplied with 4 fixings.

TOP RAIL FIXINGS



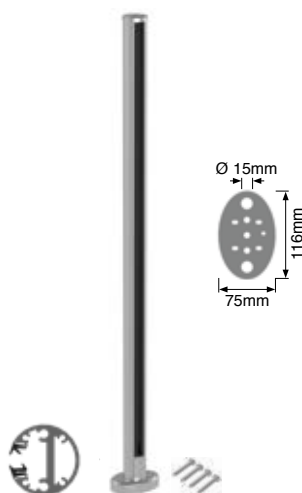
Code
68HF01

Pack of 4. For attaching handrail to post.



POSTS

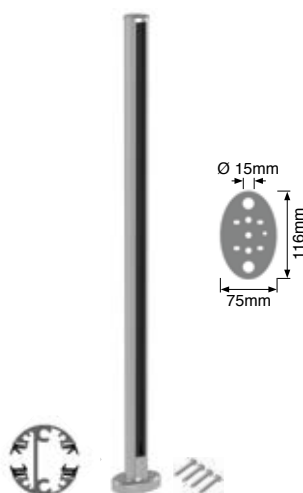
BOLT-DOWN END



Height mm	Ø mm	Code
1100	54	6805791R54

Supplied with post caps, packers, rubbers, handrail screws and cover plate.

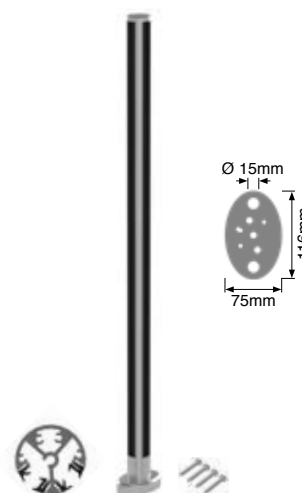
BOLT-DOWN MID



Height mm	Ø mm	Code
1100	54	6805792R54

Supplied with post caps, packers, rubbers, handrail screws and cover plate.

BOLT-DOWN CORNER



Height mm	Ø mm	Code
1100	54	6805793R54

Supplied with post caps, packers, rubbers, handrail screws and cover plate.

HANDRAILS

RECTANGULAR HANDRAIL



Length m	mm	Code
3.0	62 x 25	680570536225
5.8	62 x 25	68057056225

OVAL HANDRAIL



Length m	mm	Code
3.0	72 x 27	680570537227
5.8	72 x 27	68057057227

BASE PLATE COVER



Code
680520854

To suit Ø 54mm round post.

END/MID JIG
For drilling through handrail



Code
6899732J54

Plastic.

CORNER JIG
For drilling through handrail



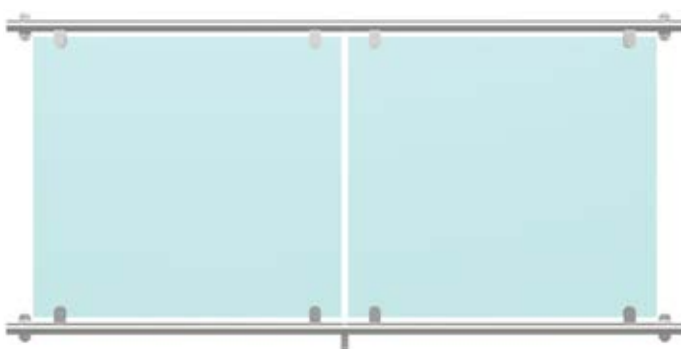
Code
6899733J54

Plastic.

VERONA JULIET BALCONY



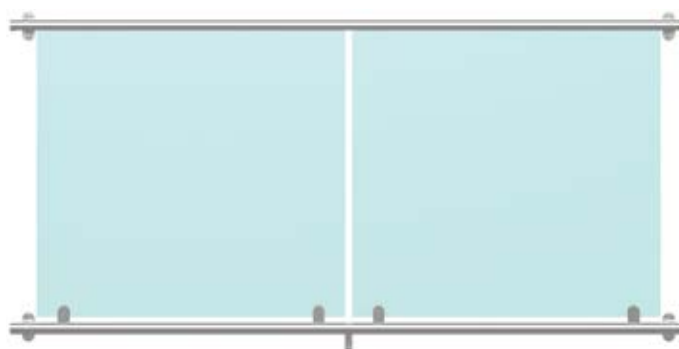
GLASS CLAMPS ON TOP & BOTTOM RAIL KIT



Opening Width mm	Overall Width mm	Ø mm	Glass Thickness mm	Code
2300	2650	48.3	10	18068JBGC

Please order glass panels separately. Supplied with four wall brackets and one trellis bracket.

SPLIT TUBE ON TOP RAIL & GLASS CLAMPS ON BOTTOM RAIL KIT



Opening Width mm	Overall Width mm	Ø mm	Glass Thickness mm	Code
2300	2650	48.3	10	18068JBST

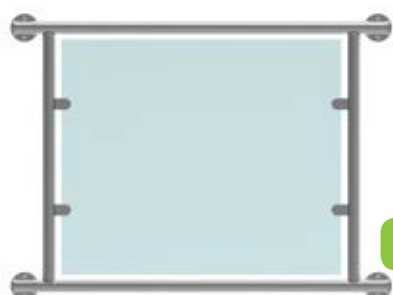
Please order glass panels separately. Supplied with four wall brackets and one trellis bracket.



FOR EXTRA WALL OR TUBE SUPPORT BRACKETS, SEE PAGE 45

FOR OUR FULL RANGE OF GLASS PANELS, SEE PAGES 72 - 76.

JULIET BALCONY KIT

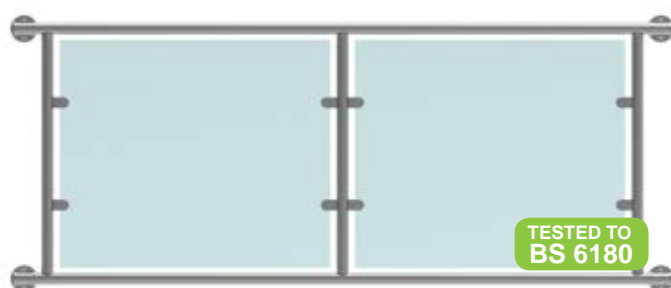


TESTED TO BS 6180

SINGLE DOOR KIT

Finish	Ø mm	Max Opening m	Glass H x W mm	Code
Satin	48.3	1.1	900 x 1100	1806811D
Mirror	48.3	1.1	900 x 1100	1806811DM

To suit 10mm glass thickness. If glass is required please order code: 1855101100900.



TESTED TO BS 6180

DOUBLE DOOR KIT

Finish	Ø mm	Max Opening m	Glass H x W mm	Code
Satin	48.3	2.3	900 x 1100	1806812D
Mirror	48.3	2.3	900 x 1100	1806812DM

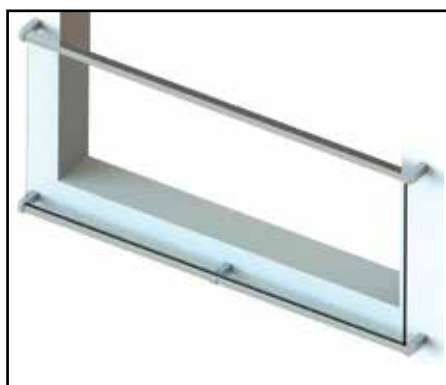
To suit 10mm glass thickness. If glass is required please order code: 1855101100900 x 2.

BOTH KITS REQUIRE UPRIGHT POSTS TO BE GLUED TO CROSS RAILS.



ELEGANCE JULIET BALCONY

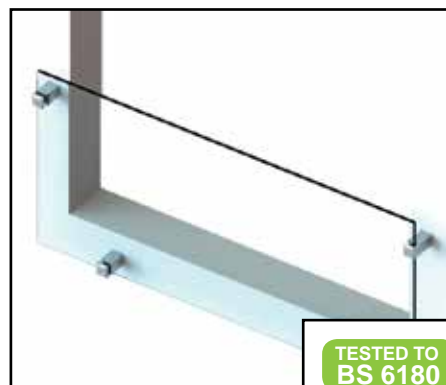
TOP & BOTTOM RAILS



TOP RAIL ONLY



FULLY FRAMELESS



TESTED TO
BS 6180

FEATURES:

- To suit 40 x 30mm rectangular top rail system, see page 21
- No welding required
- Designed for 12 - 21.5mm glass
- Reduced visual impact
- Glass is 80mm off the wall
- All products are satin polish finish

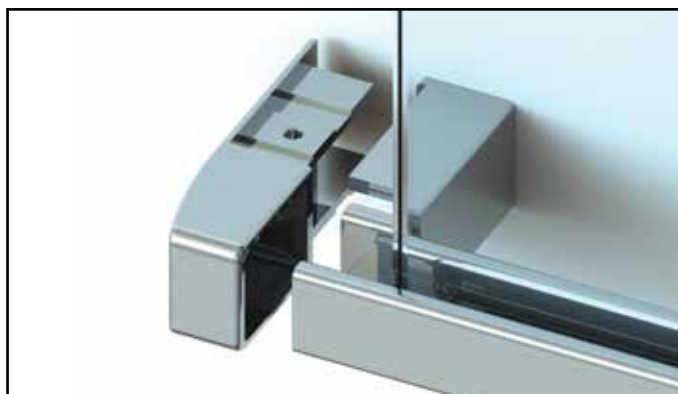
BRACKET SET



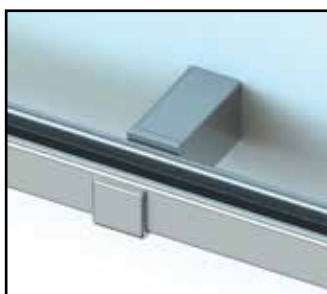
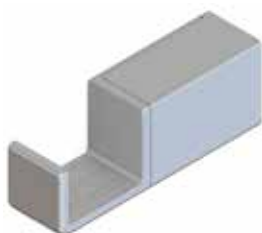
Fixing Holes Ø mm	Code
12	1822JBS4030

Sold in pairs, Left & right hand side.

EXPLODED BRACKET

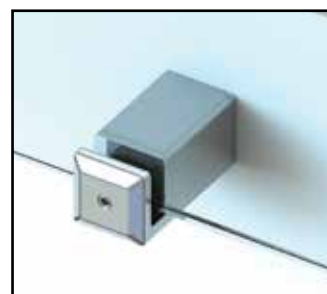


CENTRE SUPPORT BRACKET



Fixing Hole Ø mm	Code
12	1822CSB4030

GLASS SUPPORT BRACKET



Fixing Hole mm	Code
13 x 22	1822GSBS

SPLIT TUBE



Length m	Code
3.0	180670534030
5.8	18227054030
6.0	18067054030

GASKET



To Suit Glass mm	Length m	Code
8 - 11	1	189903811C
11.5 - 13.5	1	189903115135C
15	1	18990315C
16 - 17.5	1	18990316175C
19	1	18990319C
20 - 21.5	1	18990320215C

FOR OUR FULL RANGE OF GLASS PANELS,
SEE PAGES 72 - 76.

ELEGANCE ROMEO BALCONY



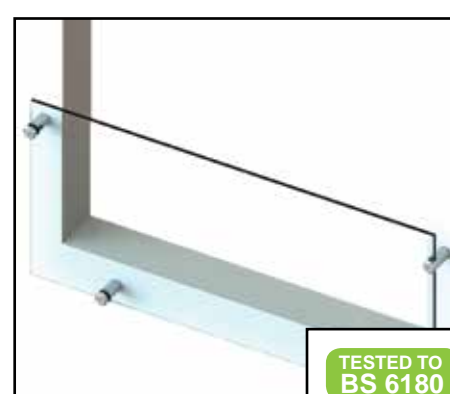
TOP & BOTTOM RAILS



TOP RAIL ONLY



FULLY FRAMELESS



TESTED TO
BS 6180

FEATURES:

- To suit 60 x 30mm oval top rail system, see page 22
- No welding required
- Designed for 12 - 21.5mm glass
- Reduced visual impact
- Glass is 80mm off the wall
- All products are satin polish finish

BRACKET SET



Fixing Hole Ø mm	Code
12	1822JBS6030

Sold in pairs, Left & right hand side.

EXPLODED BRACKET



CENTRE SUPPORT BRACKET



Fixing Hole Ø mm	Code
12	1822CSB6030

GLASS SUPPORT BRACKET



Fixing Hole mm	Code
13 x 22	1822GSBR

SPLIT TUBE



Length m	Code
3.0	180670536030
5.8	18227056030
6.0	18067056030

GASKET



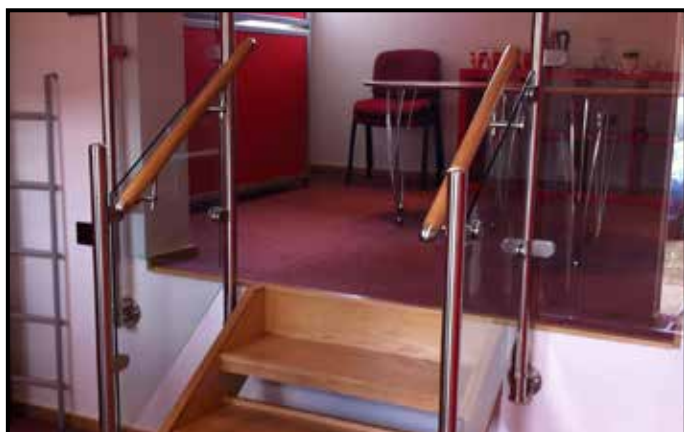
To Suit Glass mm	Length m	Code
8 - 11	1	189903811C
11.5 - 13.5	1	189903115135C
15	1	18990315C
16 - 17.5	1	18990316175C
19	1	18990319C
20 - 21.5	1	18990320215C

FOR OUR FULL RANGE OF GLASS PANELS,
SEE PAGES 72 - 76.



WOODEN HANDRAIL SYSTEMS

Ø 45mm HANDRAIL



If you would prefer the benefits of a wooden handrail system, the fusion of wood with stainless steel is possible with our integration range of components with handrails available in hard or softwood.

FITTINGS TO SUIT Ø 45mm WOODEN HANDRAILS

FLAT END CAP



Code

1807214C

ROUNDED END CAP



Code

1807215C

'T' FITTING



Code

1807205C

HANDRAIL CONNECTOR



Code

1807206C

ELBOW
ROUND CORNER



Code

1807201C

ELBOW
SQUARE CORNER



Code

1807202C

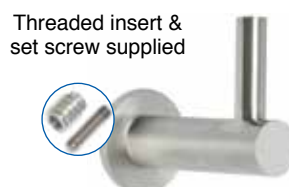
ADJUSTABLE ELBOW



Code

1807203C

STRAIGHT HANDRAIL
SUPPORT



Code

1807303FC

CRANKED HANDRAIL
SUPPORT



Code

1807305FC

SPARE PLASTIC SUPPORT



Code

189900701

DRILLING GUIDE
FOR FITTING END STOPS



Code

189900702

DRILLING TEMPLATE
For Ø 45mm wooden handrail



Code

189900101

Ø 45mm SOFTWOOD FOR INTERNAL USE

UNTREATED



Length m	Code
2.0	18077032
3.0	18077033

VARNISHED



Length m	Code
2.0	18077012
3.0	18077013

BEECH EFFECT



Length m	Code
2.0	18077002
3.0	18077003

WENGÉ EFFECT



Length m	Code
2.0	18077022
3.0	18077023

WOODEN HANDRAIL SYSTEMS



Ø 48.3mm HANDRAIL



These three fittings have been developed for wood-to-wood and wood-to-stainless balustrades, allowing a smooth transition between Ø 48.3mm solid wooden handrail and all of the standard Ø 48.3mm Pro-Railing tube and fittings.

FITTINGS TO SUIT Ø 48.3mm WOODEN HANDRAILS

END CAP



Code
1807230D
1807233D

Requires code: 1807232D.

CONNECTOR



Code
1807231D
1807234D

Fixing hole Ø 6mm.

ADAPTOR



Code
1807232D

Not supplied with screws.
Fixing hole Ø 6mm.

HOW TO USE THESE FITTINGS



We are able to offer a wide range of solid hardwood handrails which are available unfinished for a final stain or lacquer to be applied after installation. High grade raw materials ensure consistent top quality handrails and our unique adaptor allows the use of our stainless steel components to simplify the installation.

Ø 48.3mm HARDWOOD FOR EXTERNAL USE

STEAMED BEECH		SAPELE		AMERICAN WHITE OAK		EUROPEAN BROWN OAK	
Length m	Code	Length m	Code	Length m	Code	Length m	Code
2.0	18077042	2.0	18077052	2.0	18077062	2.0	18077072
3.0	18077043	3.0	18077053	3.0	18077063	3.0	18077073



ACCESSORIES

HIGH STRENGTH RETAINER GLUE (50ml)

For use with tube fittings



Code
1899007638

ADHESIVE ACTIVATOR (150ml)

Reduces curing time when used with Loctite 638



Code
18990087649

INSTANT ADHESIVE (50ml)

Supplied with plunger and needle for accurate application. For use as thread lock adhesive



Code
1899007454

STAINLESS STEEL CLEANER (400ml)

Degreases & cleans surfaces ready for gluing



Code
18990097063

STAINLESS CLEANING WIPE

Removes finger & hand marks left during installation



Code
189900901

AFTER CARE TEA STAINING 3-PART CLEANER KIT

Keeps stainless handrail & fittings in top condition long after installation



Code
189900902

STAINLESS CLEANING GEL (2kg)

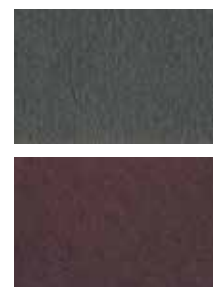
Pickling gel helps remove rust, dirt and grime from stainless steel



Code
18990094023

POLISHING CLOTHS

For removal of light scratches on stainless tube & fittings



Description	Code
Fine (Grey)	189901101
Medium (Red)	189901102

SILICONE SEALANT (310ml)

Gives an all-round waterproof seal



Sealant Colour	Code
Clear	18990125366
Black	18990125368

SEALANT GUN



Code
189900666

ALLEN KEY

For use with all glass clamps



To suit	Code
8mm bolts	189900605
Glass clamp post bolt	189900606
Grub screws on handrail brackets	189900607
6mm bolts	189900608
PanelGrip (size 3/16")	189900627

THREADED LENGTHS



Length mm	Thread Ø mm	Code
150*	10	189900640
150*	12	189900641
110	8	189900685
300	16	189900688

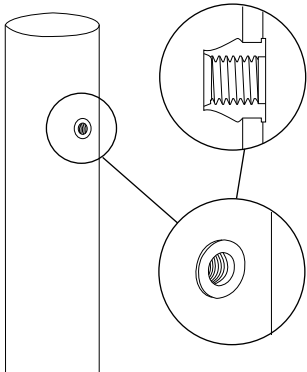
*For use with RKEM+ chemical fixing compound.

FIXINGS



THREADED INSERTS & MANDRELS

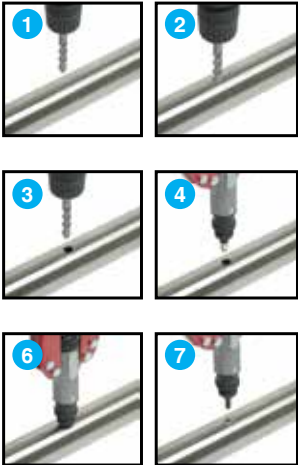
Threaded inserts with cylindrical flat head



Thread mm	Code
5	13i40591
6	13i40592
8	13i40593
5	189900611
6	189900609
8	189900610

THREADED INSERT/MANDREL TOOL

For fixing 5, 6 & 8mm bolts to posts when used with the correct mandrel



Code
1899E40590

ROCKITE CONCRETE COMPOUND (2.2kg)

Re-sealable tub



Code
189900665

POLYESTER RESIN (300ml)

Polyester resin styrene free



Code
189900663

WIRE MESH SLEEVE

Cut to required length
Use with polyester resin



Code
189900664

1m wire mesh sleeve for 10/12mm studs.

RKEM+ CHEMICAL FIXING (300ml)



Code
05RKEM

HAND RIVETER



To Suit mm	Code
3.2 - 6.4	189900667

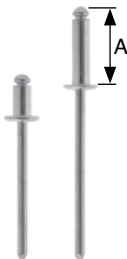
LAZY TONG RIVETER



To Suit mm	Code
3.2 - 6.4	189900668

DOME ALUMINIUM RIVETS

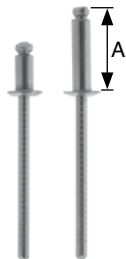
Pack of 100



Ø mm	Head Length (A) mm	Code
3.2	10	189900671
3.2	12	189900672
4.0	6	189900673
4.0	12	189900674
4.8	6	189900675
4.8	12	189900676

DOME STAINLESS STEEL A2 RIVETS

Pack of 100



Ø mm	Head Length (A) mm	Code
2.4	6	189900677
2.4	12	189900678
3.2	6	189900679
3.2	12	189900680
4.0	6	189900681
4.0	12	189900682
4.8	8	189900683
4.8	12	189900684

COUNTERSUNK SCREW

For fixing handrail saddles



Size mm	Code
5.5 x 22	13i0383*
6.3 x 22	13i0384*
5.0 x 20	189900619

*Zinc plated.

PAN HEAD SCREW

For fixing handrail saddles to stainless tube



Size mm	Code
5 x 20	189900620

COUNTERSUNK FIXING



PAN HEAD FIXING



There are 2 types of fixings available for handrail brackets and saddles to tube. Countersunk screw (Ø 5 x 20mm) - code: **189900619** (for flat saddles) pan head screw - code: **189900620** (for Ø 42.4 and 48.3mm saddles).

THREADED DOWEL

For use with handrail brackets



Size mm	Code
8 x 50	189900622

BZP.

COUNTERSUNK SCREW

For general fixing



Size mm	Code
5 x 25	13i0385*
6 x 10	13i0322*
6 x 25	13i03851*
10 x 25	13i032*
6 x 20	189900603
8 x 20	189900604

*Zinc plated.

BUTTON HEAD BOLT

For fixing handrail brackets and rod holders 705/707



Size mm	Code
5 x 20	189900618
6 x 20	189900621

SOCKET HEAD CAP SCREW

For fixing glass clamps into posts



Size mm	Code
8 x 20	13i0323*
6 x 20	189900601
8 x 20	189900602

*Zinc plated.

VARIABLE FIXING BOLT

To give +/- 5° adjustment



Size mm	Code
8 x 20	189900602A

THREAD INSERT & SET SCREW

For fixing wood handrail to stainless fittings



Description	Code
To suit 6mm stud	189900626*
Threaded stud 6 x 25mm	189900625

*Zinc plated.

PLAIN WASHER



Ø mm	Code
8	189900631
10	189900632
12	189900633

LAG SCREW

With Allen key head



Size mm	Code
M 12 x 20	1899006124

Please order nut code: **189900639** and washer code: **189900633**.

PAN HEAD THREAD ROLLING BOLT

For fixing handrail saddles to stainless tube



Size mm	Code
5 x 20	189900686
6 x 20	189900687

HEXAGONAL FULL NUTS



Thread Ø mm	Code
8	189900637
10	189900638
12	189900639

HEXAGONAL NYLOC NUTS



Thread Ø mm	Code
8	189900628
10	189900629
12	189900630

HEXAGONAL DOMED HEAD NUTS



Thread Ø mm	Code
8	189900617
10	189900650
12	189900616

NUT CAPS



Colour	Ø mm	Code
Black	8	3204M8
Black	10	3204M10
Black	12	3204M12
Silver	8	3204M8S
Silver	10	3204M10S
Silver	12	3204M12S

Plastic.

ALL FIXINGS ARE SOLD INDIVIDUALLY.



THROUGH BOLTS

Thread Ø mm	Anchor Length mm	Hole Ø mm	Max Fixture Thickness mm	Fixture Clearance mm	Embedment Depth mm	Hole Depth mm	Min Structure Thickness mm	Tightning Torque Nm	CE	Code
8	90	8	45	9	35	40	100	10		16248*
10	95	10	33	12	45	50	100	28		162410*
12	100	12	25	14	60	65	100	34		162412*
16	105	16	10	18	75	85	110	85		162416*
20	120	20	20	22	85	100	130	160		162420*
8	100	8	35	9	55	65	100	15	✓	189900613 Thread length 35mm
12	100	12	50	14	80	90	130	50	✓	189900614 Thread length 35mm

*Zinc plated.



LOOSE BOLTS WITH SHIELD ANCHOR

Thread Ø mm	Anchor Length mm	Hole Ø mm	Max Fixture Thickness mm	Fixture Clearance mm	Embedment Depth mm	Hole Depth mm	Min Structure Thickness mm	Tightning Torque Nm	CE	Code
8	60	14	10	10	50	55	100	14	✓	189900645
10	85	16	25	12	60	65	120	27	✓	189900646
12	100	20	25	14	75	85	160	46	✓	189900647



ANCHOR BOLTS

Thread Ø mm	Anchor Length mm	Hole Ø mm	Max Fixture Thickness mm	Fixture Clearance mm	Embedment Depth mm	Hole Depth mm	Min Structure Thickness mm	Tightning Torque Nm	CE	Code
10	100	8	60	12	40	55	90	40	✓	189900648
12	100	10	50	14	50	70	110	60	✓	189900649

Zinc plated.

COLBALT DRILL BIT



SDS MASONRY DRILL



Description	Code
7.2mm drill for 5mm insert/mandrel	189901001
9.6mm drill for 6mm insert/mandrel	189901002
10.5mm drill for 8mm insert/mandrel	189901003
4.2mm drill for 5mm self tapping screw	189901004
4.5mm drill for 5mm thread rolling bolt	189901005
5.5mm drill for 6mm thread rolling bolt	189901006

Length mm	Thread Ø mm	Code
100	10	189900658
100	12	189900659
100	14	189900660
150	16	189900661
150	20	189900662



THROUGH BOLTS



Thread Ø mm	Anchor Length mm	Hole Ø mm	Max Usable Length mm	Min Effective Anchorage Depth mm	Max Effective Anchorage Depth mm	Min Member Thickness mm	Installation Torque Nm	CE	Code
8	111	8	30/40	30	40	100	15	✓	1899006101
10	106	10	30/40	40	50	100	30	✓	1899006102
12	196	12	100/115	50	65	120	50	✓	1899006103

ANCHOR



APPLICATIONS

- Used to firmly affix steel to concrete

Thread Ø mm	Anchor Length mm	Hole Ø mm	Max Fixture Thickness mm	Effective Anchorage Depth mm	Min Member Thickness mm	Installation Torque Nm	CE	Code
M12	125	12	50	60	120	22.5	✓	1899006121

INTERNAL THREADED ANCHOR

For use with adjustable stand-off adaptor



Thread Ø mm	Drill mm	Hole Ø mm	Overall Length mm	Usable Thread Length mm	CE	Code
M10	110	18	90	23	✓	1899006112

We've got all the pieces!



PRO-RAILING®



PRO-RAILING®

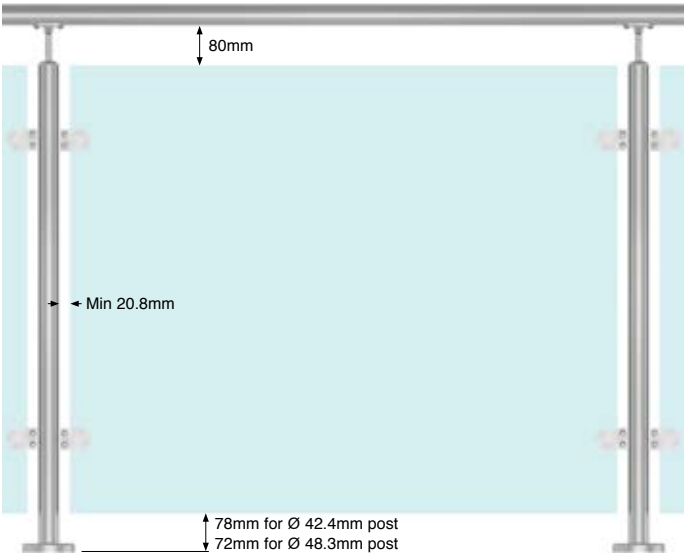
The Stainless Steel Handrail Component System

STANDARD GLASS PANELS FOR PRE-ASSEMBLED GLASS CLAMP POSTS



- Toughened monolithic clear float glass
- For use with pre-assembled posts with glass clamps
- Polished edges
- Dubbed corners

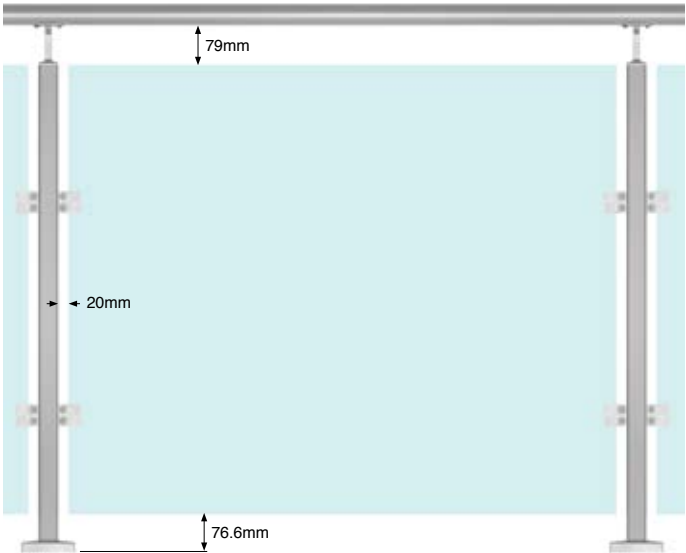
ROUND POSTS



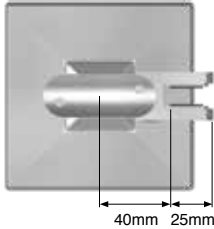
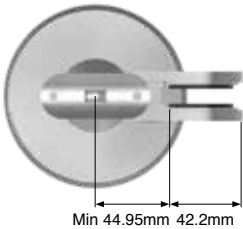
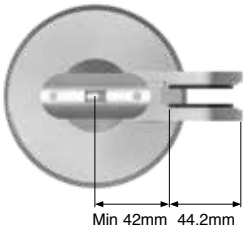
Ø 42.4mm POSTS

Ø 48.3mm POSTS

SQUARE POSTS



40 x 40mm POSTS



PRE-ASSEMBLED
ROUND POSTS CAN
BE FOUND ON
PAGES 24 - 29.
PRE-ASSEMBLED
SQUARE POSTS ARE
ON PAGE 31.

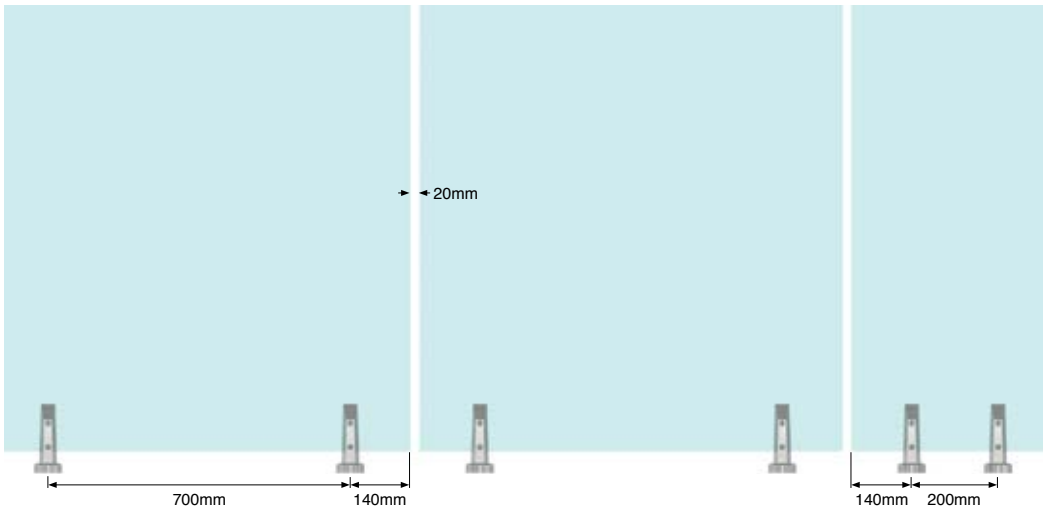


Thickness mm	Height mm	Width mm	Minimum* Post Centres For			Code
			Ø 42.4mm Post	Ø 48.3mm Post	□ 40mm Post	
10	900	100	184	190	180	185510100900
10	900	200	284	290	280	185510200900
10	900	300	384	390	380	185510300900
10	900	400	484	490	480	185510400900
10	900	500	584	590	580	185510500900
10	900	600	684	690	680	185510600900
10	900	700	784	790	780	185510700900
10	900	800	884	890	880	185510800900
10	900	900	984	990	980	185510900900
10	900	1000	1084	1090	1080	1855101000900
10	900	1100	1184	1190	1180	1855101100900

*Minimum only applies to round posts, square posts are fixed centres.



- Toughened monolithic clear float glass
- For use with spigots **1822001**, **1822007** & **1822008**
- Polished edges
- Dubbed corners
- Not to be used where the fall is greater than 600mm



Thickness mm	Height mm	Width mm	Code
12	1055	480	1855124801055
12	1055	980	1855129801055

EXTRA HEIGHT

The use of different spigots and top rails will add to the height of the finished installation and need to be considered when purchasing glass. Below you will find details on the extra heights.

TOP RAIL

Please note when using a gasket this will add a few millimetres to the overall height.

SQUARE SLIM
See page 17

ALUMINIUM SQUARE
See page 18

SQUARE MINI
See page 19

ROUND MINI
See page 20

RECTANGULAR
See page 21

OVAL
See page 22

ROUND
See page 23

MIRROR FINISH ROUND
See page 54

SPIGOTS

DUPLEX ROUND
See page 7

ROUND
See page 7

SQUARE
See page 7

TILT-LOC™ - BOLT DOWN
See page 8

STANDARD PRE-DRILLED GLASS GATE PANELS



STANDARD PRE-DRILLED GLASS PANELS FOR PRE-ASSEMBLED GLASS CLAMP POSTS

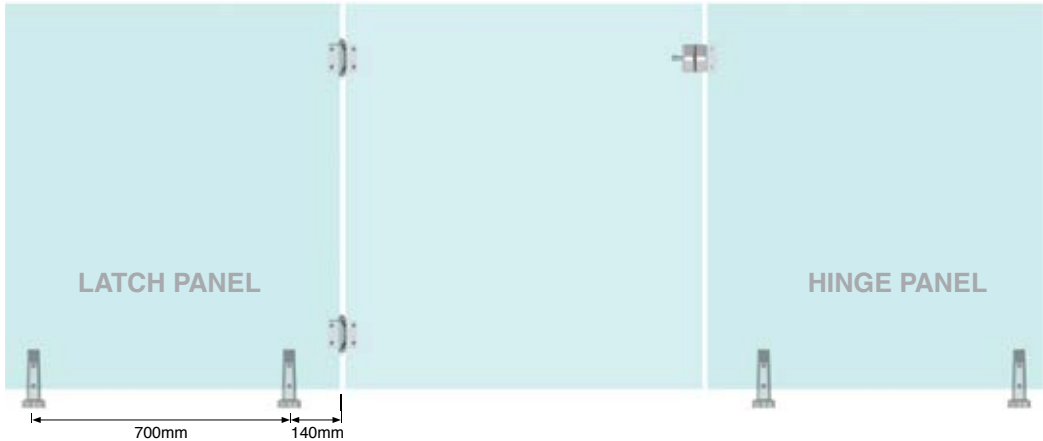
- Toughened monolithic clear float glass
- For use with latch **1806518C** & hinges **1806516C**
- Polished edges
- Dubbed corners
- For use with pre-assembled Ø 42.4mm posts with glass clamps



Panel	Thickness mm	Height mm	Width mm	Code
Gate	10	900	1000	185510GSP01

STANDARD PRE-DRILLED GLASS PANELS FOR SPIGOTS

- Toughened monolithic clear float glass
- For use with spigots **1822001**, **1822007** & **1822008**
- For use with latch **1806517** & hinges **1806515**
- Polished edges
- Dubbed corners



Panel	Thickness mm	Height mm	Width mm	Code
Latch	12	1055	980	1855129801055
Gate	10	1055	980	185510GSS01
Hinge	12	1055	980	185512GPP01

Latch panel has no holes, latch screws simply compress the plate onto the glass.



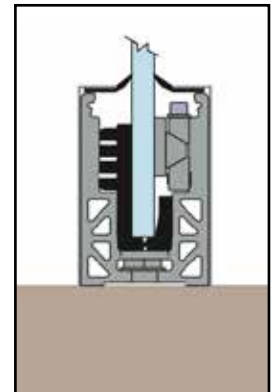
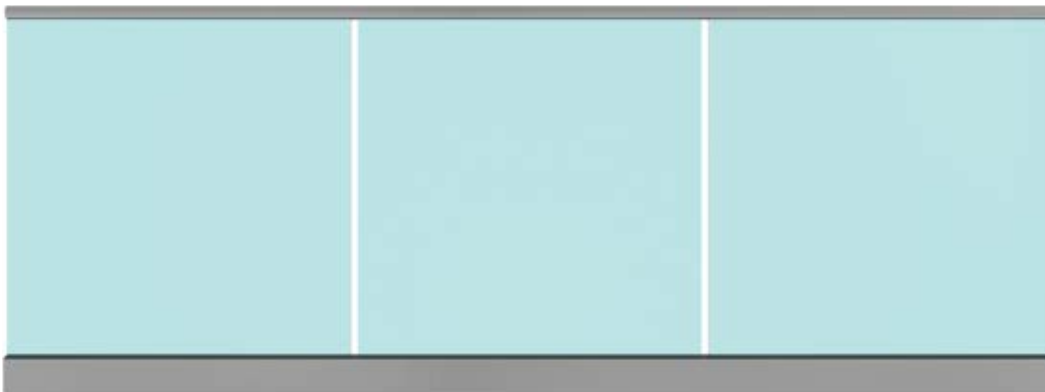
PRO-GLASS STANDARD PANELS

STANDARD GLASS PANELS FOR BALUSTRADE SYSTEMS



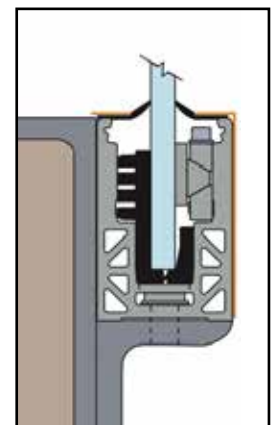
- 15 & 19mm thick toughened monolithic clear float glass
- 17.5 & 21.5mm thick toughened & laminated clear float glass
- For use with PanelGrip®, Wedge-Loc™ - Slim, Tilt-Loc™
- For base or side-fix channels
- Polished edges
- Dubbed corners
- Handrail should be used with 15 & 19mm glass

BASE-FIX CHANNELS



Thickness mm	Glass Type	Height mm	Width mm	For Use With	Code
15.0	Toughened monolithic	1075	1000	Base fixed channels set onto finished floor line	18551510001075
17.5	Toughened & laminated	1075	1000		185617510001075
19.0	Toughened monolithic	1075	1000		18551910001075
21.5	Toughened & laminated	1075	1000		185621510001075

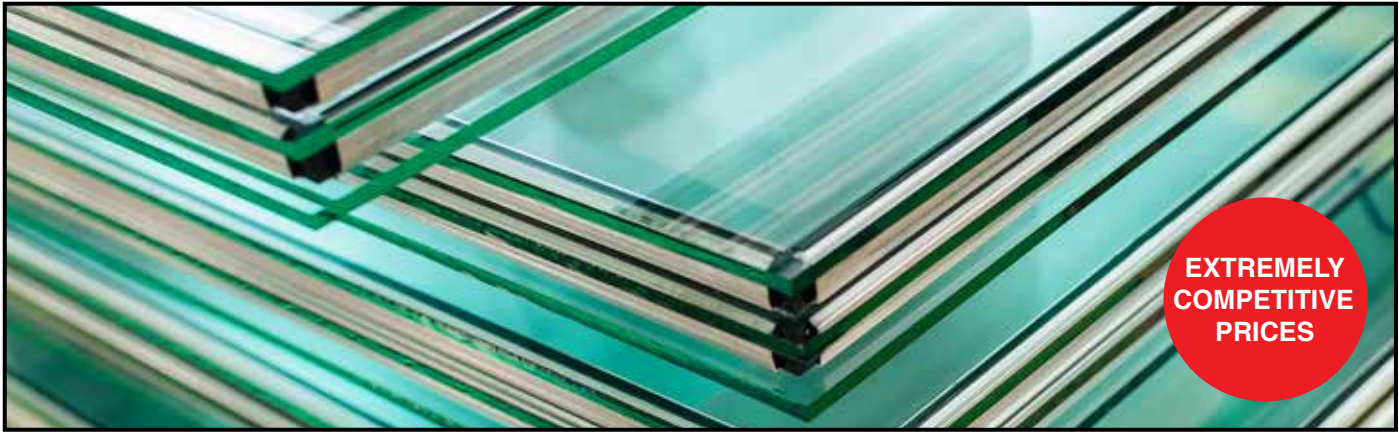
SIDE-FIX CHANNELS



PRO-RAILING®

Thickness mm	Glass Type	Height mm	Width mm	For Use With	Code
15.0	Toughened monolithic	1175	1000	Side fixed channels set 100mm below finished floor line	18551510001175
17.5	Toughened & laminated	1175	1000		185617510001175
19.0	Toughened monolithic	1175	1000		18551910001175
21.5	Toughened & laminated	1175	1000		185621510001175

SQUARE METRE PANELS



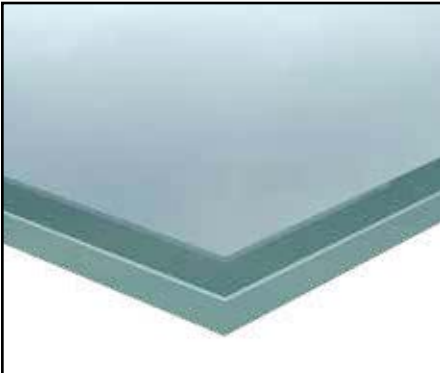
Our per square metre glass panels are polished on all edges and come with docked corners for safety and aesthetic reasons. Glass can be supplied shaped and drilled at a nominal extra cost. Different coloured glass, etchings and self-clean coatings also available.

TOUGHENED GLASS



Thickness mm	Code
8	185508M
10	185510M
12	185512M
15	185515M
19	185519M
25	185525M

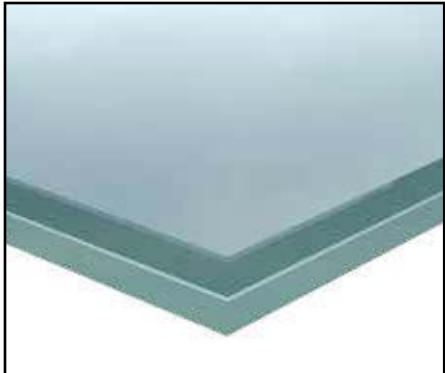
TOUGHENED LAMINATED GLASS



Thickness mm	Code
17.5	1856175M
21.5	1856215M
25.5	1856255M

SENTRYGLAS®

Ionoplast interlayer toughened glass



Thickness mm	Code
12.89	18571289M
16.89	18571689M
20.89	18572089M
25.50	1857255M

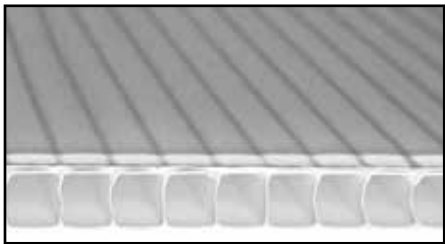
Up to 5 times stronger and 100 times stiffer than conventional interlayers.

Consult with local building authorities and structural engineers to ensure correct glass specifications and fixings are used to achieve the required loadings. Where possible we have tested our systems.

TEMPLATING SHEETS

We can provide suitable templating material that can be cut to suit any special shapes on site. This is sent to our processors for production to match the template exactly, using modern imaging scanning technology to duplicate your design. Price and availability for bespoke panels are available on application.

Height mm	Width mm	Thickness mm	Code
2440	1220	4	185900201



PRO-RAILING®



CLEANING INTERVAL

DEGREASING

Dirt left on the surface after the fabrication process can have a serious affect on the corrosion resistance of stainless steel. Not only will it prevent the steel from oxidizing, it can contain corrosive particles, which will start rusting at a later date.

PICKLING

Pickling requires the use of strong chemicals (hydrofluoric acid and nitric acid) to dissolve the surface of the steel. This process completely removes any surface contaminants and will help to restore the chromium level to the weld affected areas.

The heat from the welding process drives chromium away from the weld area. The area adjacent to the weld is often low in chromium and high in iron. These areas are always the most susceptible to corrosion once the component is in use.

Iron dissolves more readily than chromium, therefore, the pickling process leaves the surface chromium-rich and in a condition where it can form a dense oxide layer.

PASSIVATION

Stainless steel will passivate in the open atmosphere - assuming that it is spotlessly clean to begin with and so is the air it is sat in. It is a slow process and, depending on the grade of stainless, can take between 24 - 48 hours to occur.

The chromium-oxide layer that protects stainless from corrosion is relatively fragile. It can be broken or damaged during fabrication, if scratched and/or contamination is allowed to settle on the surface.

The most effective way to form the passive layer is to force it by subjecting the steel to an oxidizing chemical. These are typically acid solutions containing nitric acid or citric acid. This process speeds up the reaction time and typically takes around 2-3 hours contact time to fully form a dense and effective layer.

Simply cleaning a corroded piece of stainless steel with a stainless steel cleaner and a scouring pad (usually phosphoric acid or citric acid based) does not passivate it. These acids will help to dissolve the corrosion (iron oxides) and leave the surface in a condition in which it can self-passivate.

Rain washing regularly will reduce the risk of tea staining (brown discolouration). This is a visual impairment only, and does not affect the structural integrity or longevity of the material. The best way to prevent it is to follow the cleaning chart below, but as a general rule of thumb the recommendation is that the stainless steel needs cleaning as often as the glass.

Remember bad design can result in poor performance e.g. partially sheltered systems will greatly reduce the benefit of natural washing by rain. Maintenance of stainless steel should be considered in the design process.

RECOMMENDED CLEANING INTERVALS FOR STAINLESS STEEL HANDRAIL SYSTEMS

Building	Roof or wall washed by rain		Eaves, Soffits or sheltered areas not washed by rain	
	No deposits	Deposits accumulate	No deposits	Deposits accumulate
Structure				
Cleaning in rural, suburban & residential areas	4/year	6/year	12/year	24/year
Cleaning for seaside, industrial & severe areas	8/year	12/year	24/year	52/year

Notes:
Cleaning frequency is dependant on surface finish, design details, environment, cleaning procedure & expectations of performance
Cleaning involves using Pro-Railing Enviro-Shield (189900902) - which comprises of stainless steel cleaner, demineralised water & protection spray.

STAINLESS STEEL IS NOT SELF-CLEANING!

CLEANING METHODS



Problem	Cleaning Method	Comments
Standard cleaning	Soap & water	Sponge, rinse with clean water and wipe dry
Fingerprints	Soap & warm water or stainless steel cleaner (18990097063)	Rinse with clean water and wipe dry
Oil/grease marks, other stains & light discolouration	Pro-Railing Enviro-Shield (189900902)	Follow instructions on the box
Heavy discolouration	Stainless steel cleaning gel (18990094023)	Rinse well with clean water then use Pro-Railing Enviro-Shield (189900902)
Scratches on satin finish (Mirror finish will need repolishing properly)	<u>Slight scratches</u> Use fine polishing cloth (189901101) coated with stainless steel cleaner (18990097063) <u>Deeper scratches</u> Use coarse cloth (189901102) first then fine cloth with cleaner (as above)	Do not use steel based cleaning products (wire wool) as this will embed in the surface & will cause further surface damage & discolouration
Paint/Graffiti	Use a generic paint stripper dependent on type of paint	Use a soft bristle brush & treat afterwards with Pro-Railing Enviro-Shield (189900902)

POLISHING CLOTHS

For removal of light scratches on stainless tube & fittings



Description	Code
Fine (Grey)	189901101
Medium (Red)	189901102

STAINLESS STEEL CLEANER (400ml)

Degreases & cleans surfaces ready for gluing



Code
18990097063

STAINLESS CLEANING GEL (2kg)

Pickling gel helps remove rust, dirt & grime from stainless steel



Code
18990094023

AFTER CARE TEA STAINING 3-PART CLEANER KIT

Keeps stainless handrail & fittings in top condition long after installation



Code
189900902

THE FOLLOWING ITEMS SHOULD BE CONSIDERED & ARE AVAILABLE AS PART OF THE PRO-GLASS RANGE:

LATEX GLOVES

Size 8



Code
185900101

The PGK10 glove from Marigold is based around a 10 gauge 100% Kevlar liner with a natural rubber latex crinkle coating that provides good grip in wet or dry conditions, abrasion & tear resistant. The thumb is fully coated to protect the most vulnerable part of the hand.

PROTECTIVE SLEEVE FOR WRIST

14"



Code
185900102

Granite 5 Solo, seamless knitted high cut resistant Tensilite Sleeves with thumb slot. Suitable for use in the glazing & steel industries. The unique yarn provides level 5 cut resistance. The yarn is made with a soft finish to provide exceptional comfort for the wearer.

CLEAR PROTECTIVE SPECTACLES



Code
185900103

One piece clear polycarbonate lens with anti-mist treatment. Lightweight black nylon frame with built-in brow guard. Built-in side protection with integral nose bridge & adjustable temple length. Low energy impact protection with 400nm UV protection. Hang cord attachment points. Class 1.

DOUBLE HEAD SUCTION CUP

2 x Ø 120mm rubber suction cups. Max. lift: 70kg



Code
185900104

For use in hand lift applications only. Multiple vacuums used on a single load can only improve handling. If using more than one vacuum tool the ratio of maximum lift capacity does not increase. To lift heavier weights a larger vacuum must be used. All are fitted with a rubber suction which will not damage contact surface during the lifting action.



APPROACH TO BUILDINGS

OTHER THAN DWELLING

Generally any raised area with an unprotected edge, such as a walkway, platform or staircase, from which a fall of more than 0.5m could happen, must be fitted with a guardrail. These may be of tubular or solid construction or a combination of both.

Handrails supplied from the Pro-Railing range follow the recommendations of BS 6399 Part 1, BS 5395 and BS 6180. Usually 2 horizontal rails, consisting of a top rail and a mid-rail or alternatively a top rail and an infill panel. For staircases or ladders bounded by a wall, only a single handrail is required with a minimum hand clearance of 65mm as recommended by EEUA.

Wherever possible handrails should be continuous and follow the exposed edge of the raised platform and/or staircase. The minimum handrail height for platforms and walkways is 100mm above the surface and for staircases the handrail height is between 900 and 1100mm above the pitch line. Handrails should finish in a swept end, either to the wall, knee rail or return to the upright standard.

Sharp corners, protrusions and exposed ends should be avoided and return bends should not protrude more than 350mm from the centre line of the upright. At the foot of staircases no extrusion should extend beyond the maximum extension of the stringer.

BS 5395: Part 3 recommends the minimum design imposed lateral loads that should be used in industrial situations:

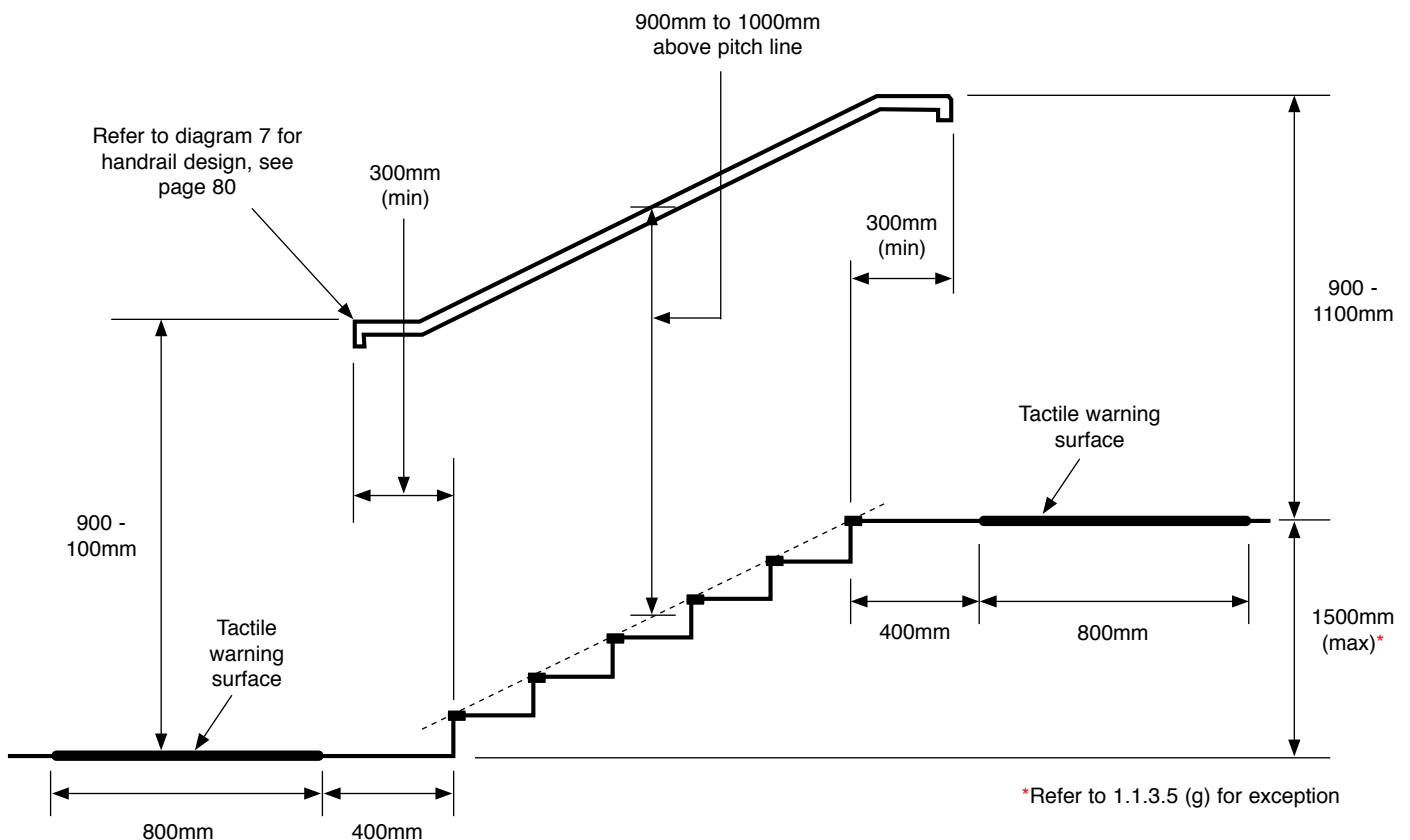
LIGHT DUTY – Access limited to one person:
0.36 kN/m

GENERAL DUTY – Regular pedestrian traffic:
0.36kN/m

HEAVY DUTY – High density traffic (escape route):
0.74kN/m

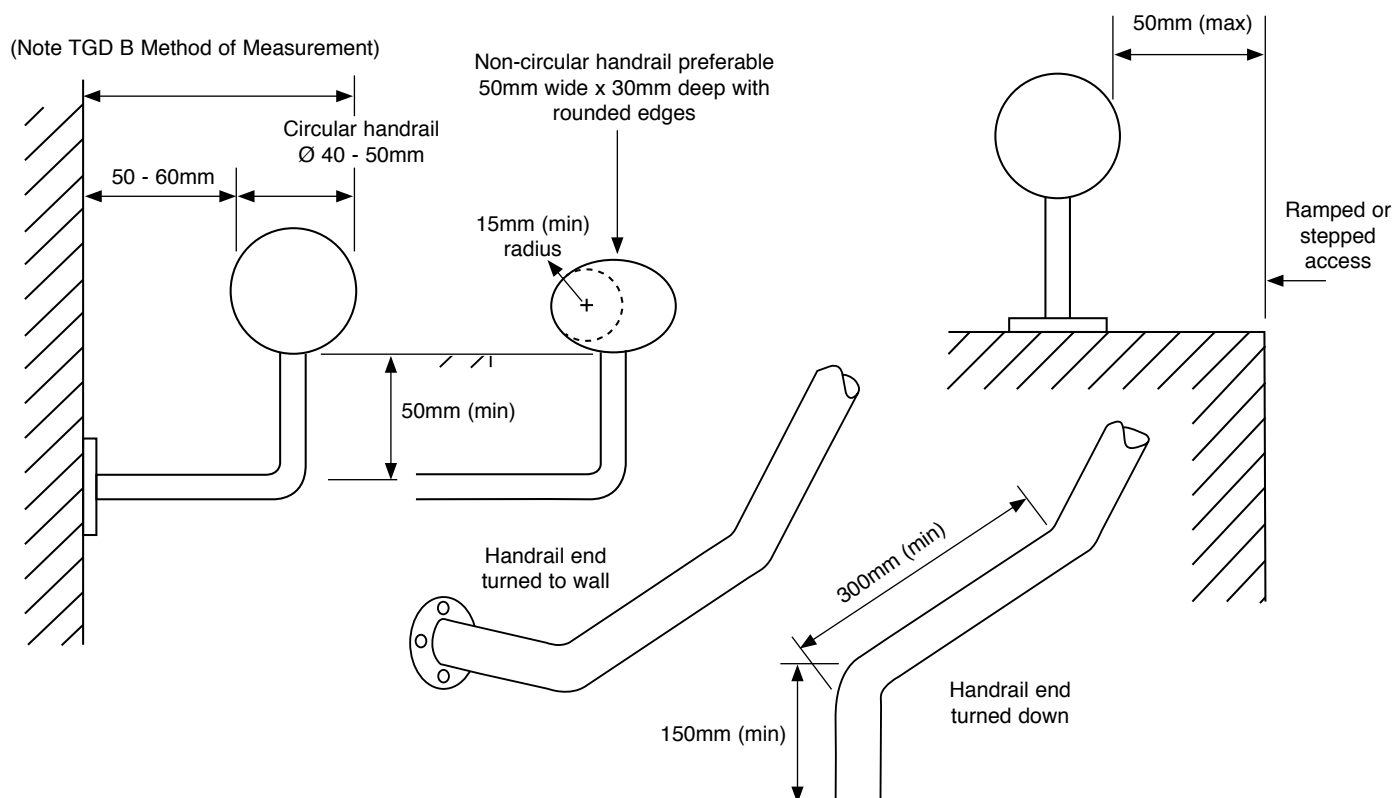
Areas subject to crowding **OVER 3m WIDE**:
3.00kN/mm

DIAGRAM 6 **EXTERNAL STEPS & STAIRS - KEY DIMENSIONS**



HANDRAILS & GUARDRAILS

DIAGRAM 7 HANDRAIL DESIGN



EXTRACT FROM BUILDING REGULATIONS PART K & PART M;

1.1.3.6 HANDRAILS

General guidance on handrails and guarding is given in TGD K, but the guidance that follows applies to handrails on accessible access routes.

Where handrails are provided on a ramped or stepped access route:

(a) The vertical height to the top of the upper handrail from the pitch line of the surface of a flight should be between 900 and 1000mm and from the surface of a landing should be between 900 and 1100mm (refer to Diagram 6). Where a second handrail on stairs is provided for children or those of short stature the vertical height to the top of a second lower handrail from the pitch line of the surface of a flight should be between 600 and 700mm;

(b) Where there are two or more flights separated by a landing or landings, the handrails should be continuous across flights and landings, except where broken by side access routes on landings;

(c) Where the handrail is not continuous the handrail should extend at least 300mm beyond the top and bottom of a ramped approach and the top and bottom risers of a stepped approach, and terminate in a closed end which does not project into a route of travel. Handrails should be terminated in such a way that reduces the risk of clothing being caught;

(d) The background against which the handrails are seen should contrast visually without being highly reflective (refer to 1.6.4);

(e) The profile should be either circular with a diameter of between 40 to 50mm or oval with a width of 50mm (refer to Diagram 7);

(f) Handrails should not protrude more than 100mm into the surface width of the access route where this would impinge on the stair width requirement of TGD B – Methods of Measurement;

(g) There should be a clearance of at least 50 to 60mm between the handrail and any adjacent wall surface (refer to Diagram 7);

(h) There should be a clearance of at least 50mm between a cranked support and the underside of the handrail (refer to Diagram 7). The handrail support should meet the handrail centrally on its underside. Rationale: This will minimise the risk of the handrail supports interrupting the smooth running of a person's hand along the rail;

(i) The handrails inner face should be located no more than 50mm beyond the surface width of the access route (refer to Diagram 7);

(j) Handrail fixings should be designed to meet the loading recommendations of I.S. EN 1991-1-1:2002.



PRODUCT SELECTION

Grade	Carbon	Silicon	Manganese	Phosphorous	Sulphur	Nickel	Chromium	Molybdenum
304 DIN 1.4301	<=0.08	<=1.00	<=2.00	<=0.035	<=0.035	8.00 - 10.50	18.00 - 20.00	-
316 DIN 1.4401	<=0.09	<=1.00	<=2.00	<=0.035	<=0.035	10.00 - 14.00	16.00 - 18.00	2.00 - 3.00

There are many grades of stainless steel, but the majority of stainless steel items in our catalogue are Type 304 and 316.

Type 304 is the most common stainless steel, and satisfies a broad demand for adequate performance at an affordable price. It has good corrosion resistance in a wide variety of environments. It is the best choice for indoor use (except swimming pools).

Type 316 has a higher level of corrosion resistance and is often referred to as marine grade. Typical applications are architectural components where they are exposed to extreme weather and climatic conditions, such as near the coast, near heavy industrial sites or in/around swimming pools.

Stainless steel is not maintenance free but maintenance friendly and when using stainless steel material

outdoors, you need to clean periodically, especially in aggressive environments like coastal areas or swimming pools. The chlorine rich atmosphere driven in from the sea can affect in-land stainless as far as 20 miles from the coast.

Choosing the correct grade can dramatically improve the corrosion resistance against chlorine, but other things should be also taken into consideration.

Surface finish is a critical element in the battle against corrosion. The British Stainless Steel Association (BSSA) recommend that a surface finish of no less than $0.5\mu\text{m Ra}$ (320 Grit) is used on all applications subjected to a chlorine rich environment. A surface any rougher than this will retain corrosive particles and rust will inevitably follow.

STANDARDS RELEVANT TO SURFACE FINISH

BS 1449

PART 1 - 1991

(Sections 1.1 to 1.15 replaced by EN 1088) - This standard specifies the properties of various stainless steels, and includes a general reference of six mechanically polished surfaces of different nominal grit sizes.

PART 2 - 1983

(Amended in 1985 & 1991 and 683/13 Euronorm 88)

Nominal Grit Size	BS 1449 Pt 2	EN 1088	Description
80 - 100	3A	1G/2G	Ground Ra nom $2.5\mu\text{m}$
180	3B	2J	Ground Ra nom $1.25\mu\text{m}$
240	4	1J/2J	Dull Polish Ra nom $0.6\mu\text{m}$
320	5	1K/2K	Satin Polish Ra $> 0.5\mu\text{m}$
590 - 630	7	2P	Bright Polish Ra nom $0.05\mu\text{m}$
800	8	1P/2P	Mirror Finish Ra nom $0.05\mu\text{m}$

GUIDELINES FOR THE USE OF GLASS



IN PROTECTIVE BARRIERS

The following extracts are from leading authorities in the field of glass, which you may find useful for UK projects. We cannot be held liable for the compliance of our components to local or national building regulations. In some instances we have tested our handrail systems to certain criteria. Regulations are always changing and it is highly recommended that you consult with local structural engineers, building inspectors and local regulations in the country of the installation. It remains the responsibility of the customer to ensure the current regulations are met.

Tables based on page 7, section 7, Architectural Glazing Systems, of the Glass Loading Data Sheet 7.2 publication November 2014, with glass loading guidelines as issued by the Glass and Glazing Federation.

TABLE A1 - Classification of building occupancy types by barrier loadings.

Class	Occupancy
1	Domestic and Residential – single family dwellings Office and Work Areas – light pedestrian traffic routes
2	Domestic and Residential – multi-occupancy, balconies and edges of roofs Office and Work Areas – areas not susceptible to over crowding Areas without obstacles for moving people and not susceptible to over crowding – stairs, landing, corridors, and balconies
3	Areas where people might congregate – areas having fixed seating within 530mm of the barrier Areas with tables or fixed seating – restaurants and bars Areas susceptible to over crowding – footways or footpaths less than 3 metres wide, adjacent to sunken areas Retail areas – all retail areas including banks, building societies or betting shops
4	Areas susceptible to over crowding – theatres, cinemas, shopping malls, assembly areas. Footways or pavements greater than 3 metres wide adjacent to sunken areas

TABLE A2 - Design loads for protective barriers.

Building Occupancy Class	Design Loads		
	Line load in kN/m run applied 1100mm above finished floor level	UDL (Uniformly Distributed Load) in kN/m2 applied to the whole of the infill panel below the line load height	Concentrated load in kN applied to any part of the infill panel below the line load height
1	0.36	0.50	0.25
2	0.74	1.00	0.50
3	1.50	1.50	1.50
4	3.00	1.50	1.50

TABLE A7 - Thickness of glass required for single glazed free standing glass protective barriers.

Building Occupancy Class	Thickness For Glass Type mm				
	Thermally toughened safety glass	Toughened/laminated safety glass using PVB interlayer		Toughened/laminated safety glass using Ionoplast interlayer	
	With handrail	With handrail	Without handrail	With handrail	Without handrail
1	12	15.5	17.5	13.5	17.5
2	15	19.5	21.5	15.5	19.5
3	19	23.5	31.5	19.5	25.5
4	25	28.5	39.5	25.5	31.5

PRO-RAILING®



TOUGHENED SAFETY GLASS

FOR FREE-STANDING GLASS PROTECTIVE BARRIERS

TABLE 3 - Glass thickness for free-standing protective barriers - Pilkington Toughened Safety Glass. Based on page 7, section Design, of the Glass and Mechanical Strength Technical Bulletin publication January 2001, with glass loading guidelines as issued by Pilkingtons Glass.

Design Level Horizontal UDL (Line Load) (kN/m)	Pilkington Toughened Safety Glass Thickness (mm)
0.36	12
0.74	15
1.50	19
3.00	25

INFILL PANELS FOR BARRIERS

TABLE 4 - Maximum spans for bolted Pilkington Toughened Safety Glass Infill panels for barriers (Applicable only for pane widths greater than 700mm). Based on page 8, section Design, of the Glass and Mechanical Strength Technical Bulletin publication January 2001, with glass loading guidelines as issued by Pilkingtons Glass.

Infill Loading From BS 6180		Span Limit For Bolted Pilkington Toughened Glass (mm)			
UDL (kN/m ²)	Point Load (kN)	6mm*	8mm*	10mm	12mm
0.5	0.25	1400	1750	2100	2400
1.0	0.50	900	1450	1750	2050
1.5	1.50	n/a	n/a	1200	1600

*6 and 8mm Pilkington Toughened Safety Glass will not be suitable if the free path perpendicular to the barrier is larger than 1.5m, since it will not give containment (i.e. remain intact) at Class A of BS 6206: 1981.

GUIDANCE ON POSITION OF HOLES IN GLASS

FOR THE QUALITY OF THERMALLY TOUGHENED SODA LIME SILICATE SAFETY GLASS FOR BUILDING

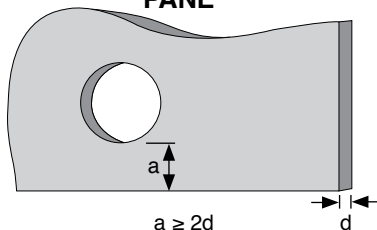
Information based on page 4 - 5, section 4, Products, Glazing Techniques and Maintenance, of the GGF Standard Data Sheet 4.4 publication October 2004, with guidelines as issued by the Glass and Glazing Federation.

6.3.3 LIMITATIONS ON POSITION OF HOLES - In general, the limitations on hole positions relative to the edges of the glass pane, the corners of the glass pane and to each other depends on:

- The nominal glass thickness (**d**)
- The dimensions of the pane (**B, H**)
- The diameter of hole (**ø**)
- The shape of the pane
- The number of holes

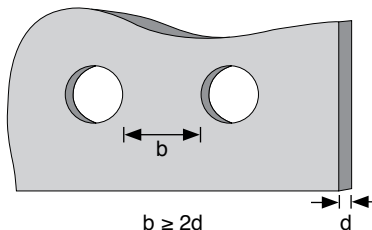
The recommendations given below are those, which are normally available and are limited to panes with a maximum of 4 holes.

FIGURE 7: RELATIONSHIP BETWEEN HOLE AND EDGE OF PANE



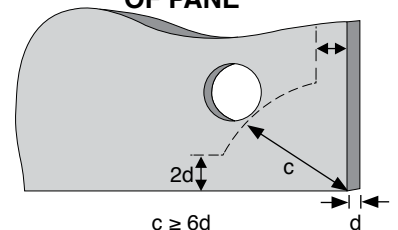
1) The distance, a, of the edge of a hole to the glass edge should be not less than 2d.

FIGURE 8: RELATIONSHIP BETWEEN TWO HOLES



2) The distance, b, between the edges of two holes should be not less than 2d.

FIGURE 9: RELATIONSHIP BETWEEN HOLE AND CORNER OF PANE



3) The distance, c, of the edge of a hole to the corner of the glass should not be less than 6d.

Note: If one of the distances from the edge of the hole to the edge of the glass is less than 35mm, it can be necessary to position the hole asymmetrically with respect to the corner. The manufacturers should be consulted.



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Stylish, durable and cost effective



March 2020

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