



X1  
series balustrade®

thump  
architectural fittings

**New Edition - July 2012** The X1 series - A versatile semi frameless stainless steel and glass system for all balustrade, pool fencing, sunshade and awning applications.

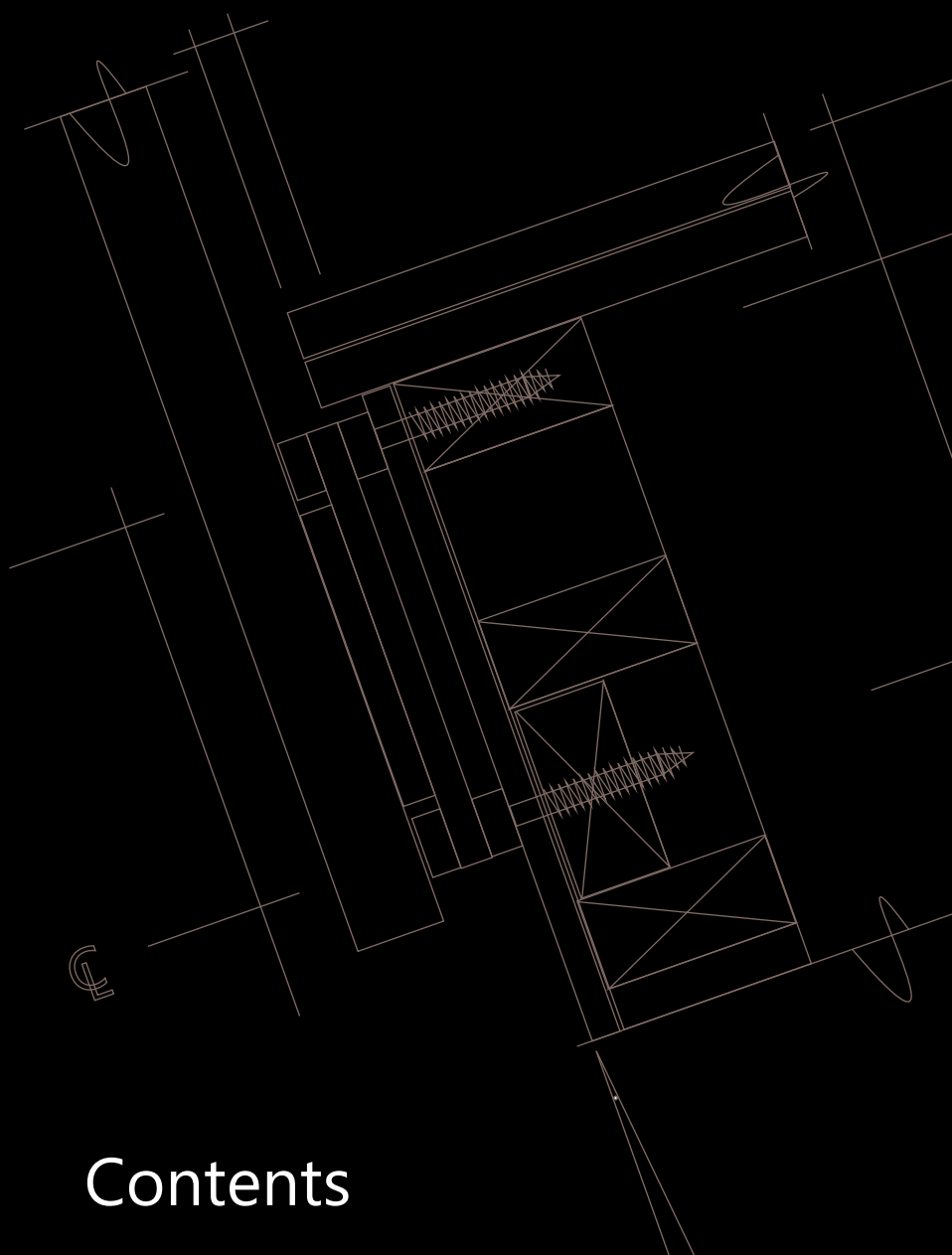


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Acacia Ridge 4110

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Fax 07 3272 2258

to view design options and full specifications visit

[www.thumpbalustrades.com.au](http://www.thumpbalustrades.com.au)



# Contents

The X1 series has been designed to enable consistent detailing throughout all of the balustrade, stair, pool fencing, sunshade and awning applications on any project. It accommodates all forms of standard construction as per the details included in this document.

The X1 system is fully compliant with AS 1288-2006.

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Image courtesy of Brian Hooper Architect

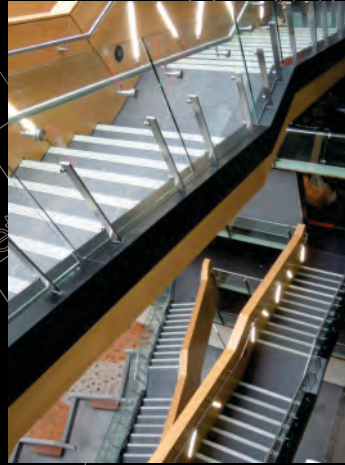
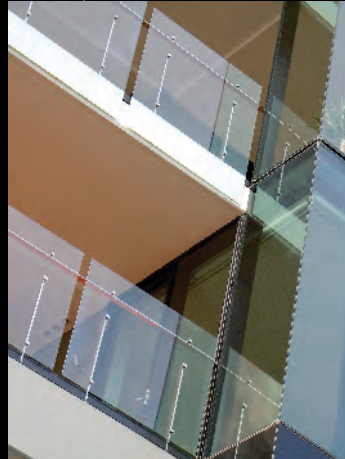


Image courtesy of Buildcorp Interiors



## Balustrade





100mm  
M10 s/s bolt fixing



Image courtesy of Hutchinson Builders

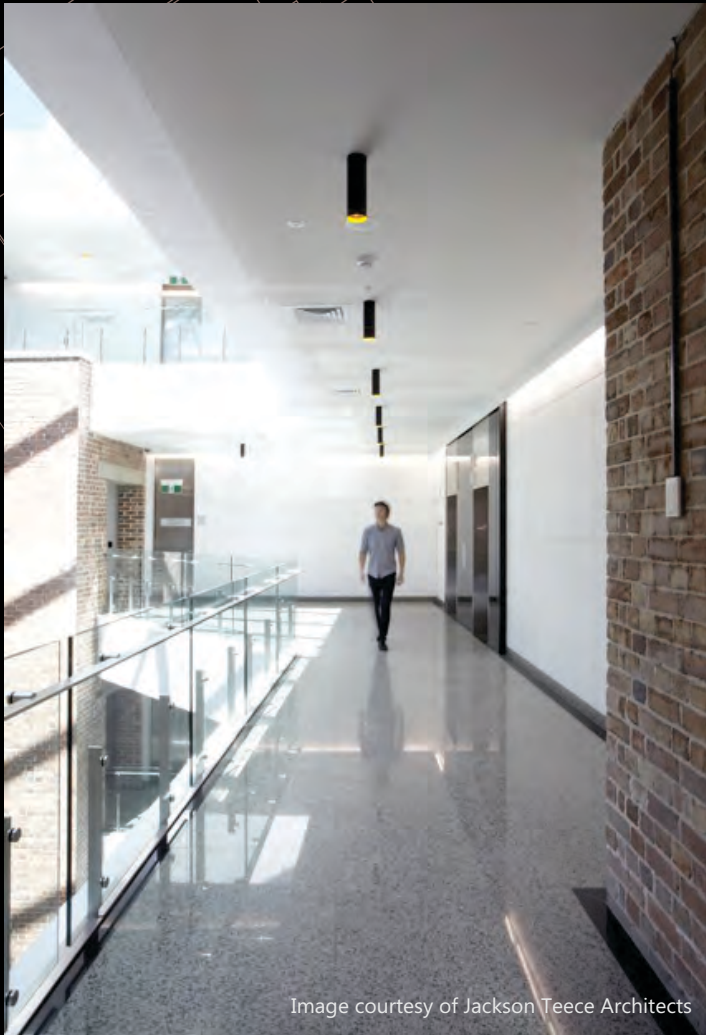


Image courtesy of Jackson Teece Architects





100mm  
M10 s/s bolt fixing



Image courtesy of Buildcorp Interiors



Image courtesy of TAK Property Group





100mm  
M10 s/s bolt fixing

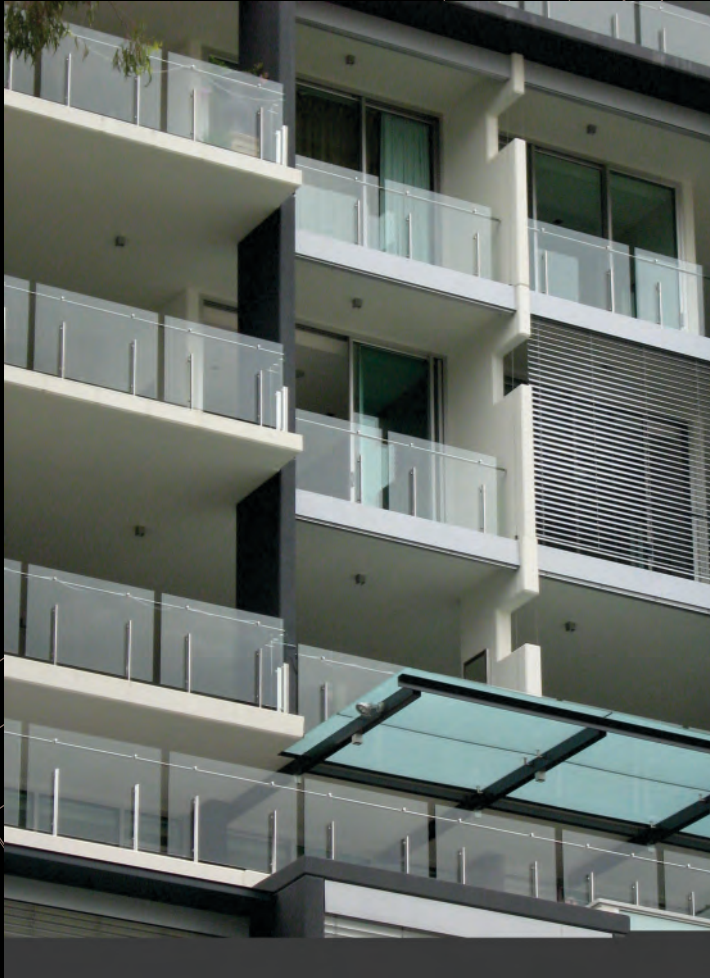
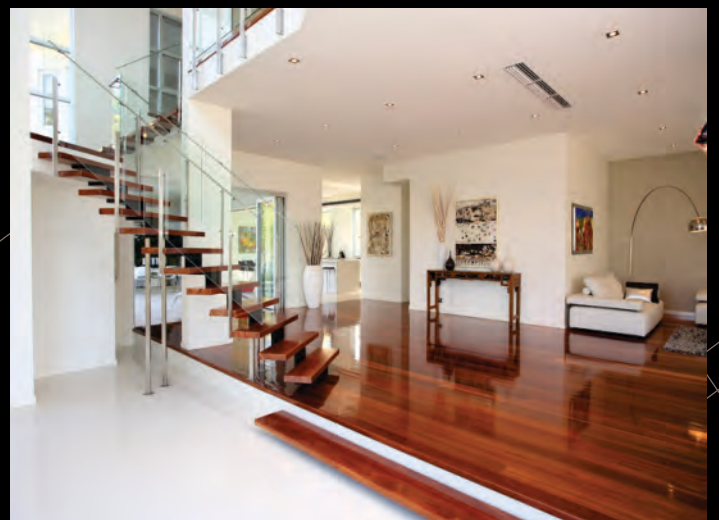
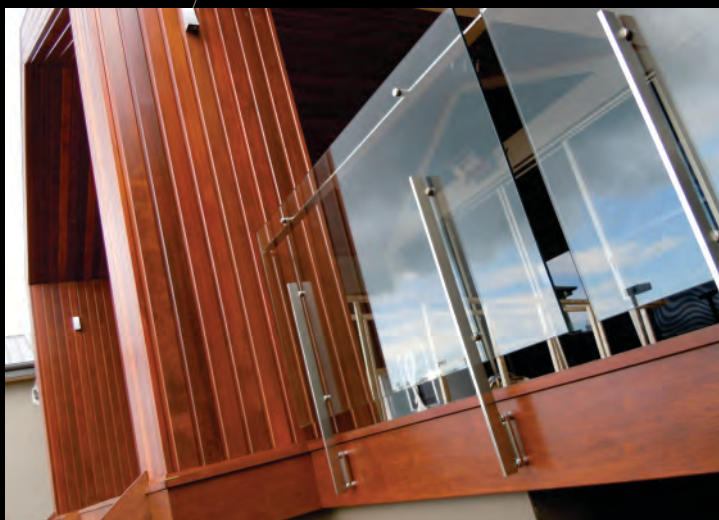


Image courtesy of TAK Property Group



Image courtesy of TAK Property Group







100mm  
M10 s/s bolt fixing



100mm  
M10 s/s bolt fixing





# 9 Fascia Fixed Balustrade - X1 Series Frameless Glass Systems

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The X1 Series Fascia Fixed Balustrade system is designed for fixing to a slab edge or fascia beam. Designed and manufactured in Australia from 316 grade stainless steel, it is fully compliant with AS 1288, AS 1170 and the BCA. It is capable of withstanding crowd loadings of 3.0kN/m.







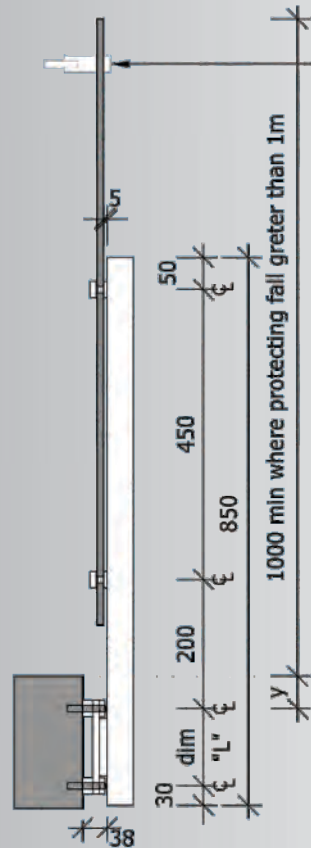
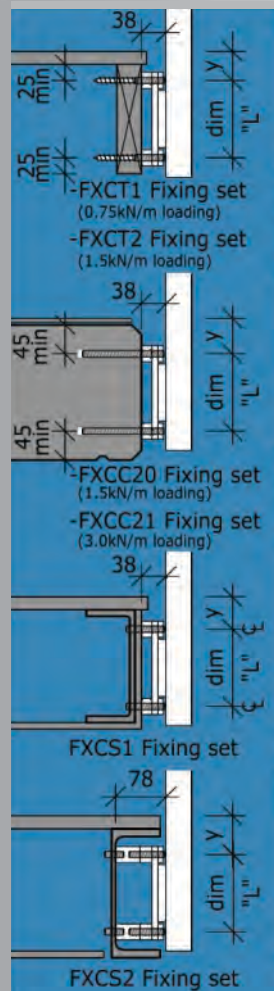
Fascia Fix  
Stanchion



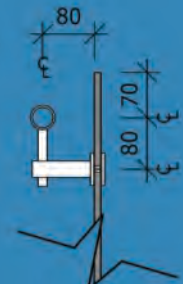
Flatbar Handrail  
Option



Round Handrail  
Option



-Interlinking handrail required where the balustrade is protecting a fall greater than 1m. Fixed to structure at each end.



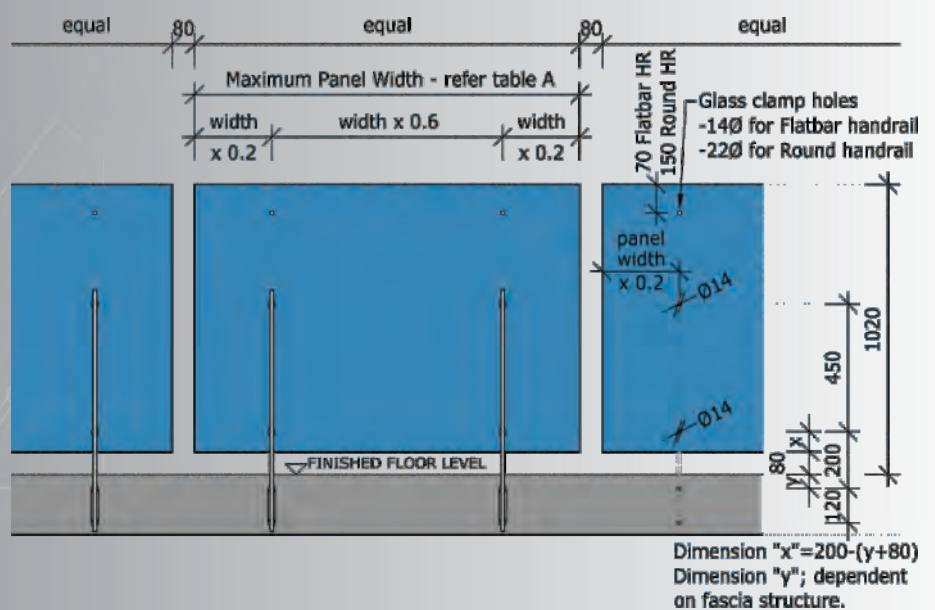
Round Handrail



Flatbar Handrail

stanchion:	imposed loading: min(kN/m)	glass thickness: min(mm)	panel width: max(mm)	dimension "L"(mm):
F4850B satin	0.75	10	1500	120
F4850P electropolished				
F4850B satin	1.5	12	1500	120
F4850P electropolished				
F4850B satin	3.0	12	1098	160
F4850P electropolished				

handrail options:	handrail:	glass clamps:
round AS1428.1 compliant	HR38.1B satin	GR38.1B satin
	HR38.1P polished	GR38.1P polished
flatbar	HR5010B satin	GF2550B satin
	HR5010P polished	GF2550P polished



# Core Fixed Balustrade - X1 Series Frameless Glass Systems

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Image courtesy of Tom Dooley Developments

The X1 Series Core Fixed Balustrade system is designed for core fixing to a concrete slab or block wall. It can be used with a round or flat handrail section as a balustrade, typically on the edge of a concrete balcony or as a pool fence.

Designed and manufactured in Australia from 316 grade stainless steel, it is fully compliant with AS 1288, AS 1170 and the BCA. It is capable of withstanding crowd loadings of 3.0kN/m.







Core Fix Stanchion



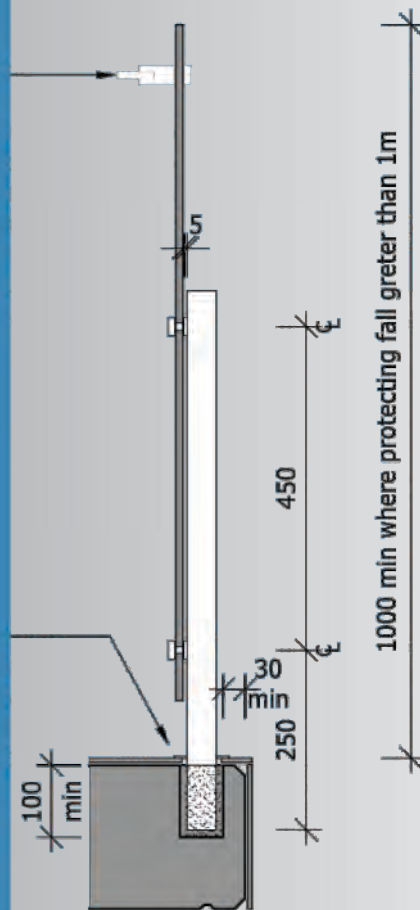
Flatbar Handrail



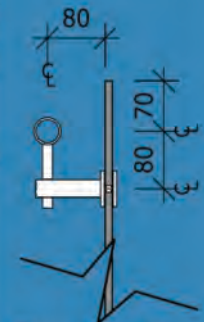
Round Handrail

Interlinking handrail required where the balustrade is protecting a fall greater than 1m. Fixed to structure at each end.

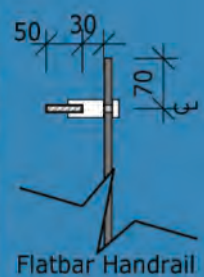
55Ø core hole. Stanchions set in place with structural non shrink grout.



#### Handrail Options



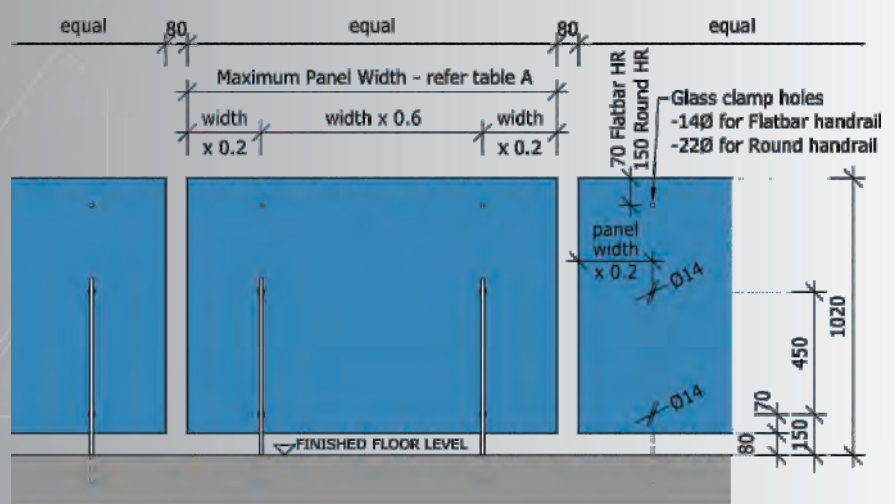
Round Handrail



Flatbar Handrail

stanchion:	imposed loading: min(kN/m)	glass thickness: min(mm)	panel width: max(mm)	dimension "L"(mm):
C4750B <sub>satin</sub>	0.75	10	1500	120
C4750P <sub>electropolished</sub>				
C5750B <sub>satin</sub>	1.5	12	1500	120
C5750P <sub>electropolished</sub>				
C6750B <sub>satin</sub>	3.0	12	1098	160
C6750P <sub>electropolished</sub>				

handrail options:	handrail:	glass clamps:
round AS1428.1 compliant	HR38.1B <sub>satin</sub>	GR38.1B <sub>satin</sub>
	HR38.1P <sub>polished</sub>	GR38.1P <sub>polished</sub>
flatbar	HR5010B <sub>satin</sub>	GF2550B <sub>satin</sub>
	HR5010P <sub>polished</sub>	GF2550P <sub>polished</sub>





# Top Fixed Balustrade - X1 Series Frameless Glass Systems

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The X1 Series Core Fixed Balustrade system is designed for surface mounting to the floor structure. It can be used with a round or flat handrail section.

Designed and manufactured in Australia from 316 grade stainless



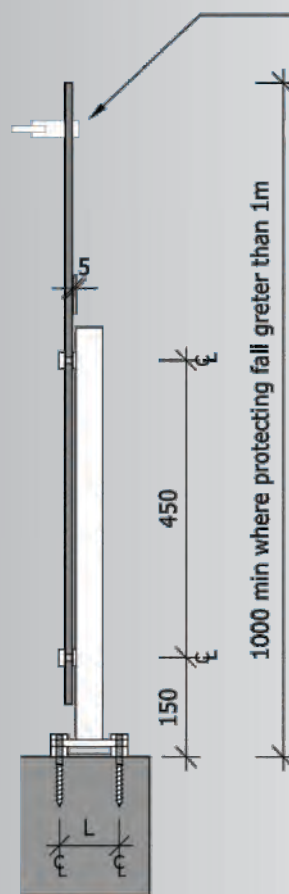
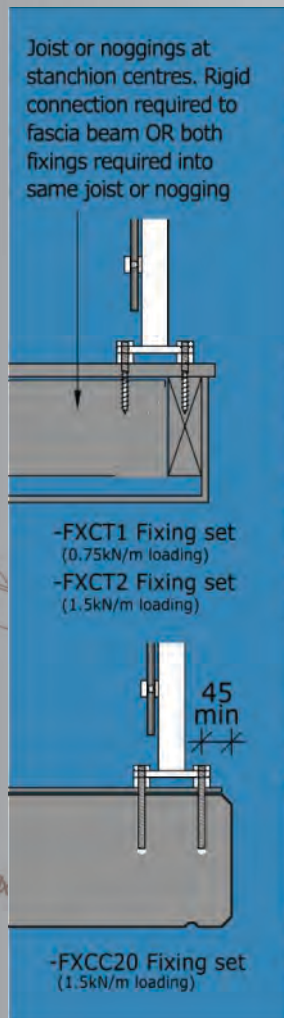
Top Fix Stanchion



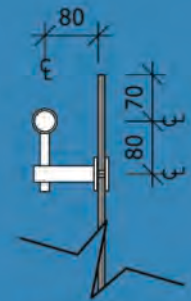
Flatbar Handrail Option



Round Handrail Option



-Interlinking handrail required where the balustrade is protecting a fall greater than 1m. Fixed to structure at each end.



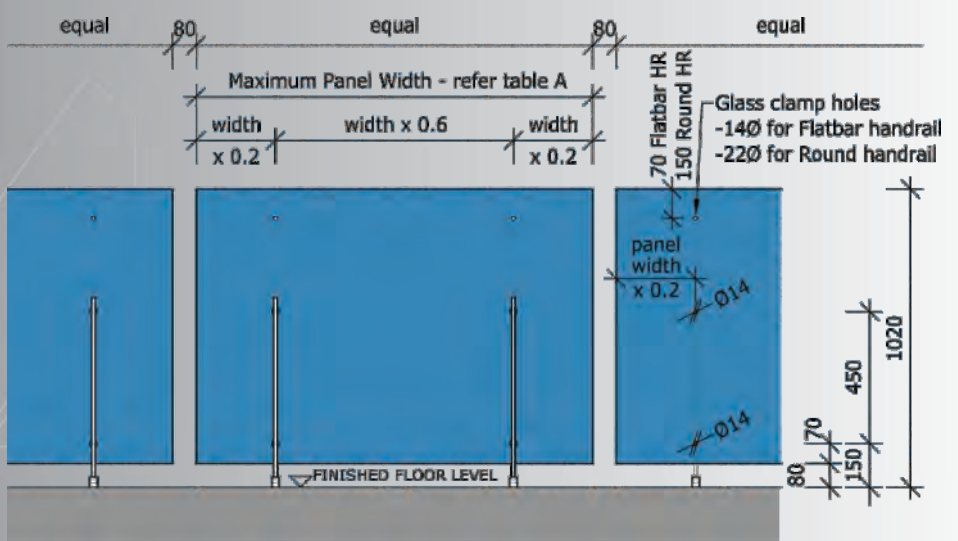
Round Handrail



Flatbar Handrail

stanchion:	imposed loading: min(kN/m)	glass thickness: min(mm)	panel width: max(mm)	dimension "L"(mm):
T4650B satin	0.75	10	1500	90
T4650P electropolished				
T5650B satin	1.5	12	1500	90
T5650P electropolished				

handrail options:	handrail:	glass clamps:
round AS1428.1 compliant	HR38.1B satin	GR38.1B satin
	HR38.1P polished	GR38.1P polished
flatbar	HR5010B satin	GF2550B satin
	HR5010P polished	GF2550P polished





# Tread Fixed Balustrade - X1 Series Frameless Glass Systems

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The X1 Series Tread Fixed Balustrade system is designed for fixing to the back edge of cantilevering stair treads. It can be used with a round or flat handrail section. Designed and manufactured in Australia from 316 grade stainless





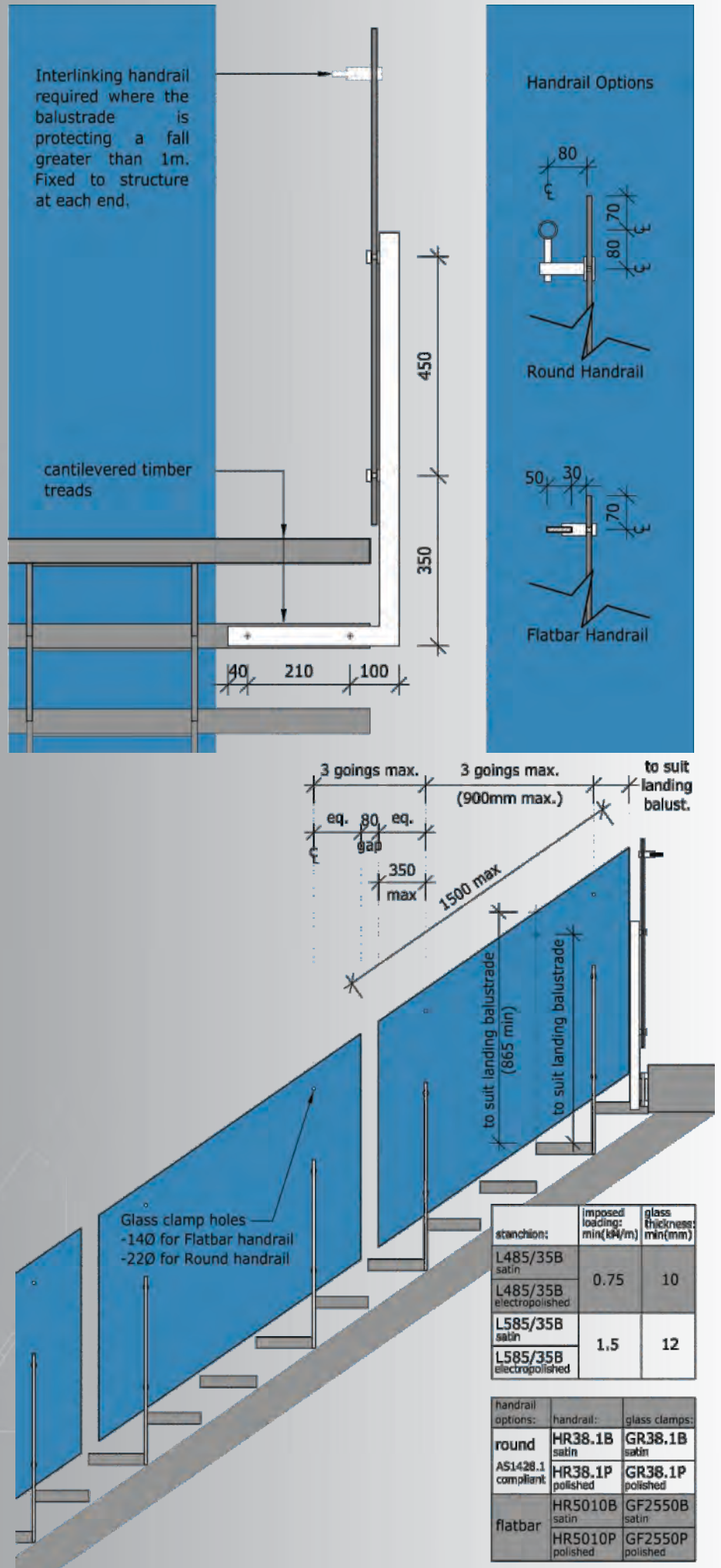
Tread Fix  
Stanchion



Flatbar Handrail  
Option



Round Handrail  
Option



# Point Fixed Balustrade - X1 Series Frameless Glass Systems

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The X1 Series Point Fixed Balustrade offers the minimum attainable obstruction to views.

Designed and manufactured in Australia from 316 grade stainless steel, it is fully compliant with AS 1288, AS 1170 and the BCA.

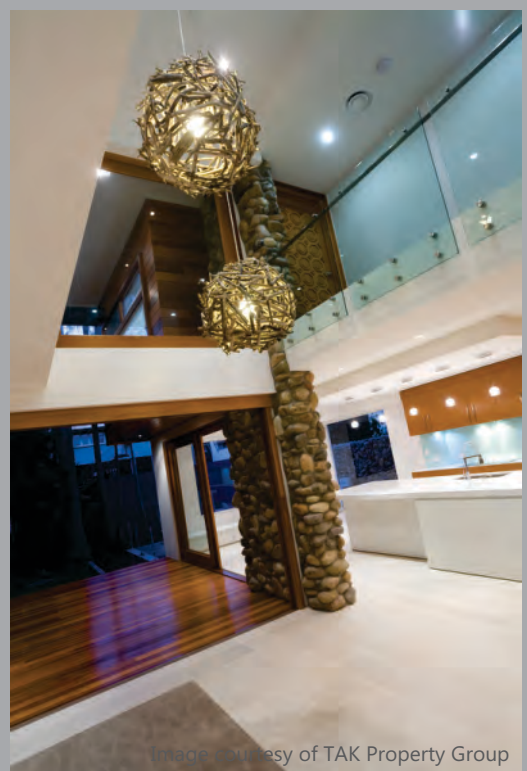


Image courtesy of TAK Property Group





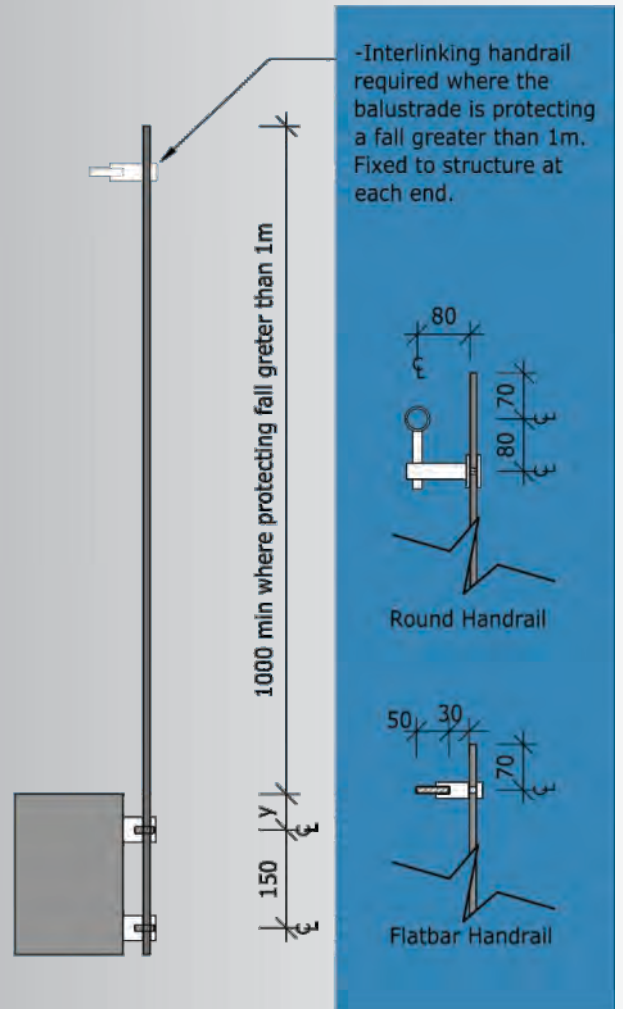
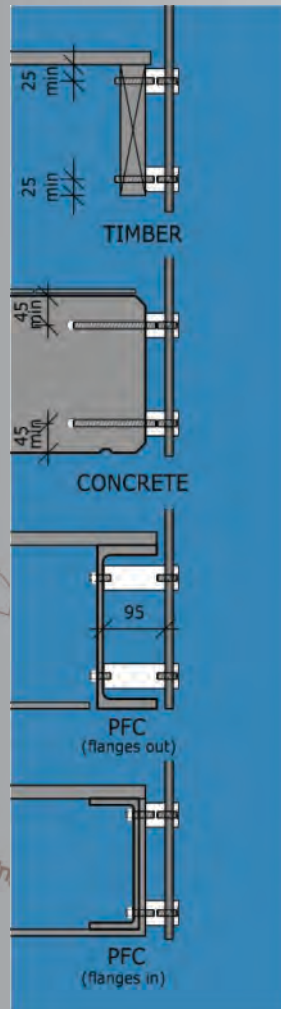
Point Fix Standoff



Flatbar Handrail Option

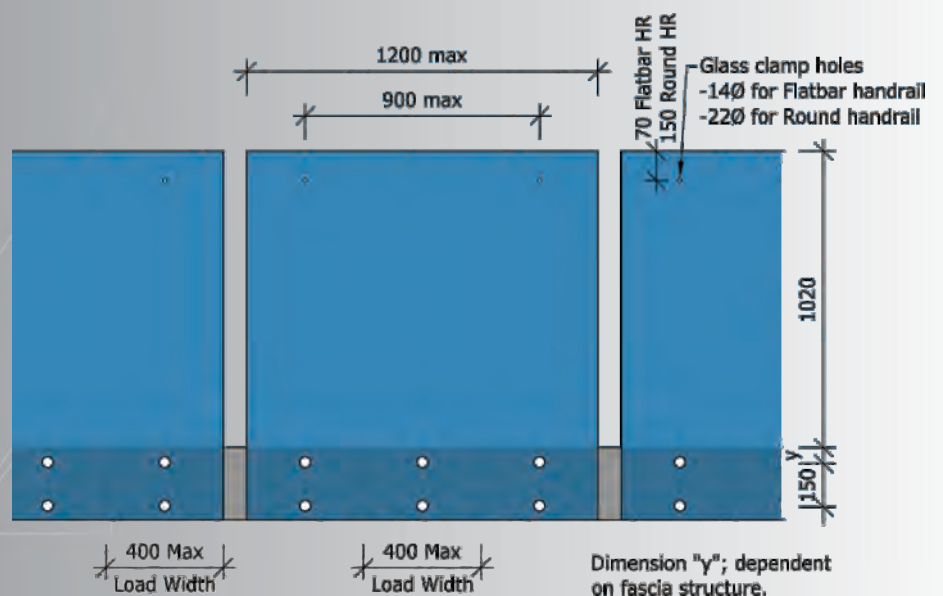


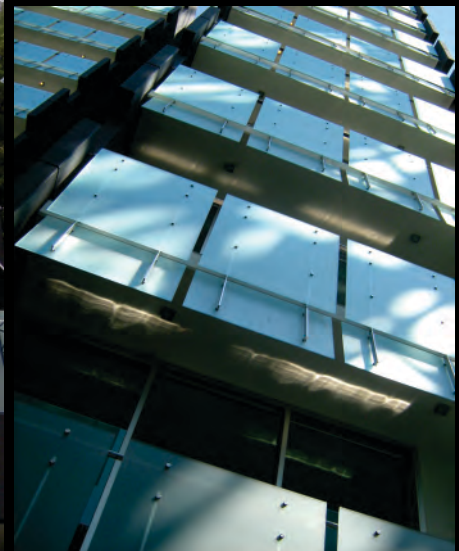
Round Handrail Option



standoff length:	finish:	code:
30mm	satin	PF3830B
30mm	polished	PF3830P
95mm	satin	PF3895B
95mm	polished	PF3895P

handrail options:	finish:	handrail:	glass clamps:
round AS1428.1 compliant	satin	HR38.1B	GR38.1B
	polished	HR38.1P	GR38.1P
flatbar	satin	HR5010B	GF2550B
	polished	HR5010P	GF2550P





## Sunshades and Awnings

1020

920

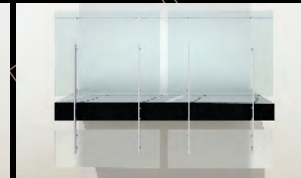
650

50mm





100mm  
M10 s/s bolt fixing



1020

920

650

50mm



# X1 Series Sunshades - X1 Series Frameless Glass Systems

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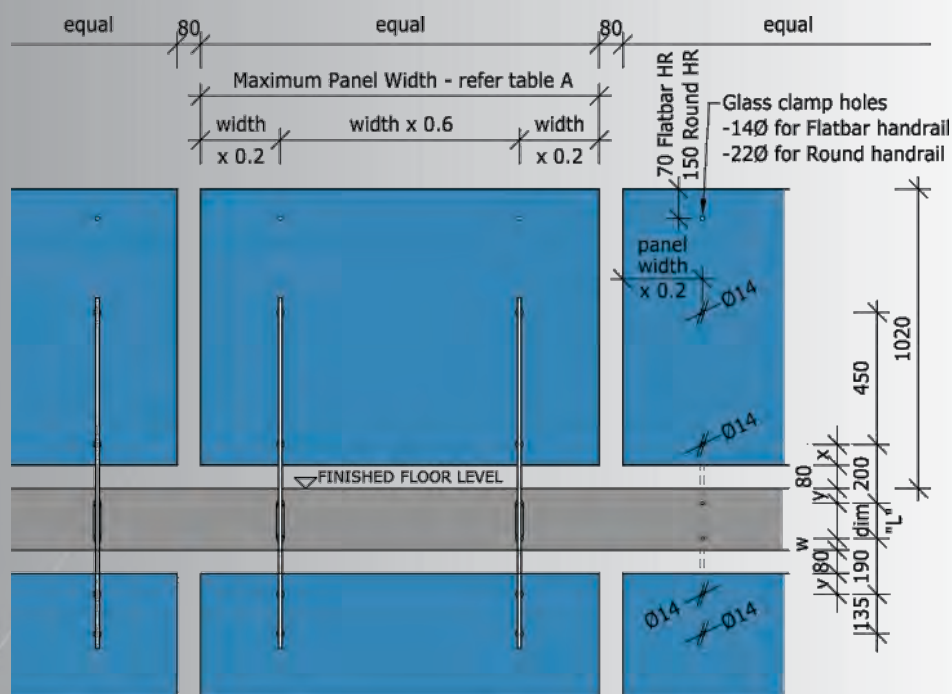
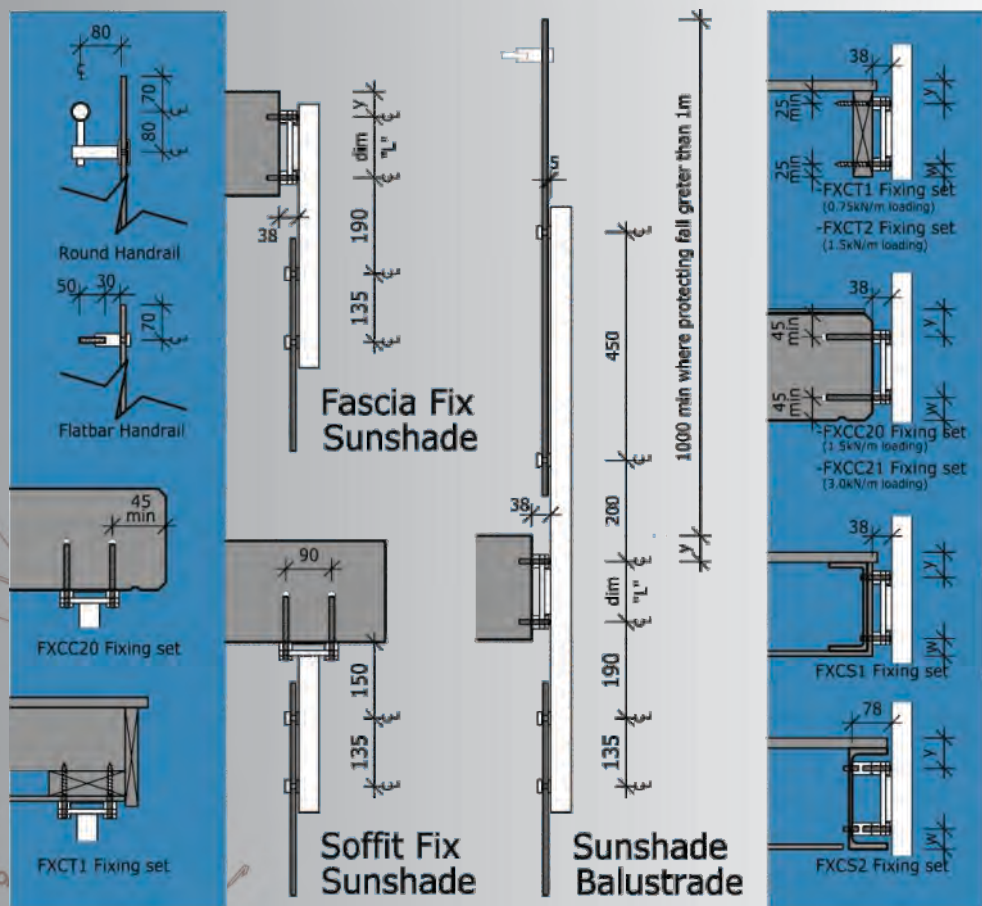
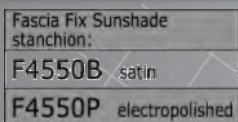
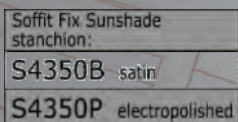
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Complimenting the X1-Series Balustrades, the X1-Series Sunshades have been added to the range and offer a striking aesthetic whilst reducing solar gain and increasing privacy. The sunshades are available in combination with the balustrade system or as stand





Dimension "w"; dependent on fascia structure      Dimension "y"; dependent on fascia structure

Sunshade Balustrade stanchion:	balust loading: (kN/m)	balust glass min(mm)	s. shade glass min(mm)	panel width: max(m)	dim"L" (mm)
F41195B satin	0.75	10*	10*	1.5	120
F41195P electropolished					
F51195B satin	1.5	12*	10*	1.5	120
F51195P electropolished					
F61195B satin	3.0	12*	10*	1.1	160
F61195P electropolished					

\*toughened float glass to be heatsoak tested where any part more than 5m high

handrail options:	handrail:	glass clamps:
round	HR38.1B satin	GR38.1B satin
AS1428.1 compliant	HR38.1P polished	GR38.1P polished
flatbar	HR5010B satin	GF2550B satin
	HR5010P polished	GF2550P polished

# X1 Series Awnings - X1 Series Frameless Glass Systems

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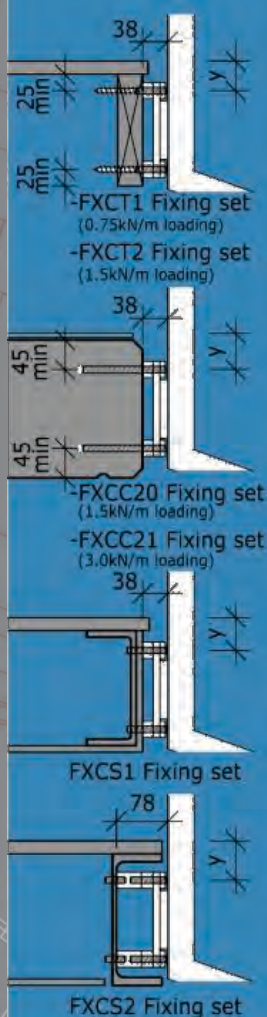
sales enquiries 1300 310 176  
info@thumpbalustrades.com.au  
www.thumpbalustrades.com.au



Complimenting the X1-Series Balustrades, the X1-Series Awnings have been added to the range and offer a striking aesthetic and additional protection from the elements. The awnings are available in combination with the balustrade system or as stand alone

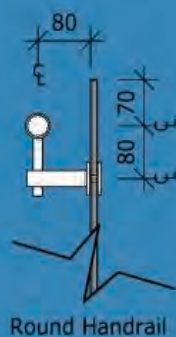


-Interlinking handrail required where the balustrade is protecting a fall greater than 1m. Fixed to structure at each end.



## Awning Balustrade

## Fascia Fix Awning



Round Handrail



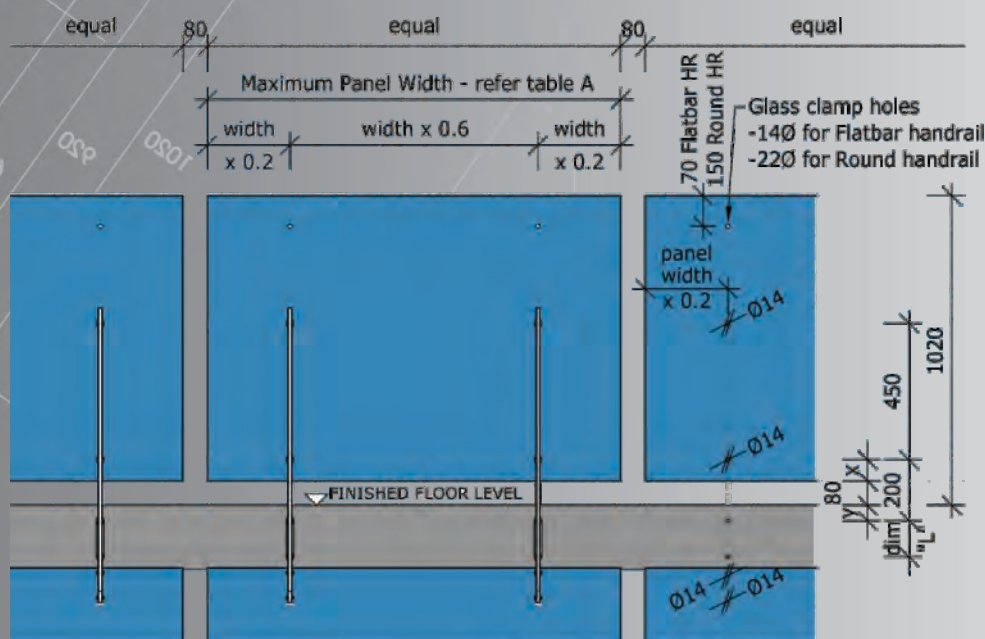
Flatbar Handrail



Awning Balustrade stanchion:	bal loading (kN/m)
F485/35B satin	0.75
F485/35P electropolished	
F585/35B satin	1.5
F585/35P electropolished	
F685/35B satin	3.0
F685/35P electropolished	



Fascia Fix Awning stanchion:
F420/35B satin
F420/35P electropolished



Dimension "x"=200-(y+80)  
Dimension "y"; dependent on fascia structure

min balust loading: (kN/m)	balust glass min(mm)	s. shade glass min(mm)	panel width: max(m)	dim"L" (mm):
0.75	10*	10^	1.5	120
1.5	12*	10^	1.5	120
3.0	12*	10^	1.1	160

\* toughened glass to be heatsoak tested where any part more than 5m high  
^ toughened glass where <3m high, laminated 8mm/1.52 pvb interlayer/8mm where >3m high



Image courtesy of Hutchinson Builders



## Pool Fencing





100mm  
M10 s/s bolt fixing



Image courtesy of Scott Street Apartments

PFC of

1020

920

650

50mm



# Core Fixed Pool Fencing - X1 Series Frameless Glass Systems

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The X1 - Series Core Fixed Pool Fence system is designed for core drilling into a concrete slab or block wall.

Designed and manufactured in Australia from 316 marine grade stainless steel, it is fully compliant with AS 1288, AS 1926.1 and MP 3.4 of the QLD development code.







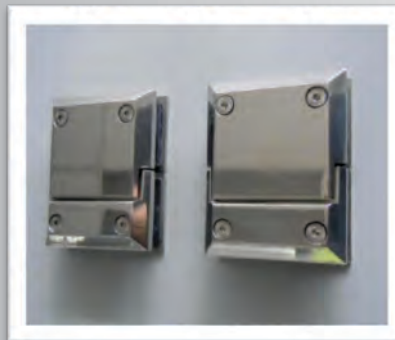
Core Fix  
Stanchion  
**C4750P**



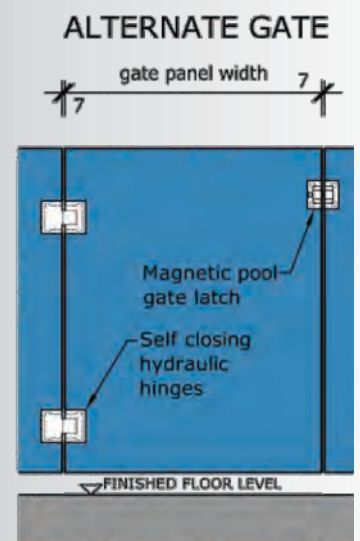
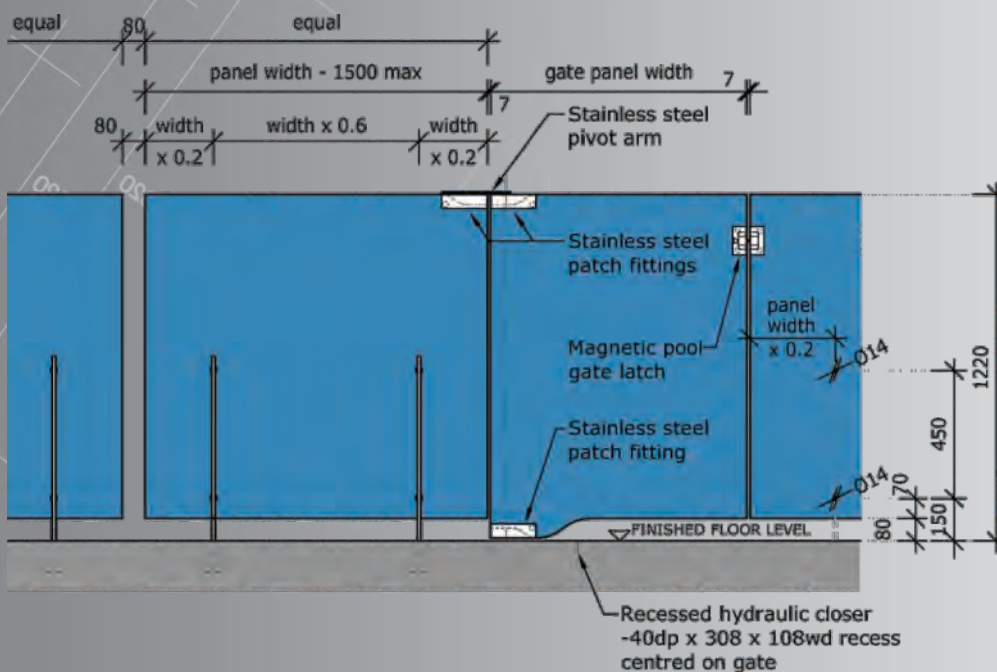
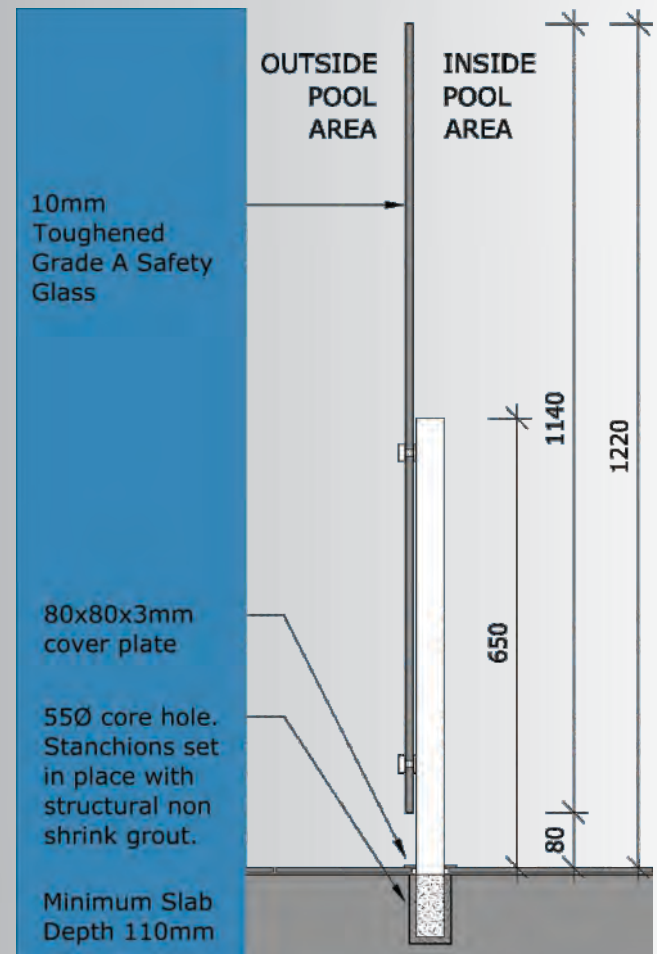
Glass to  
glass  
pivot kit



Magnetic  
latch kit



Glass to  
glass  
hinge kit



# Fascia Fixed Pool Fencing - X1 Series Frameless Glass Systems

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Image courtesy of East Office Architects

The X1 - Series Fascia Fixed Pool Fence system is designed for fixing to a slab edge or fascia beam. Designed and manufactured in Australia from 316 marine grade stainless steel, it is fully compliant with AS 1288, AS 1926.1 and MP 3.4 of the QLD development code.





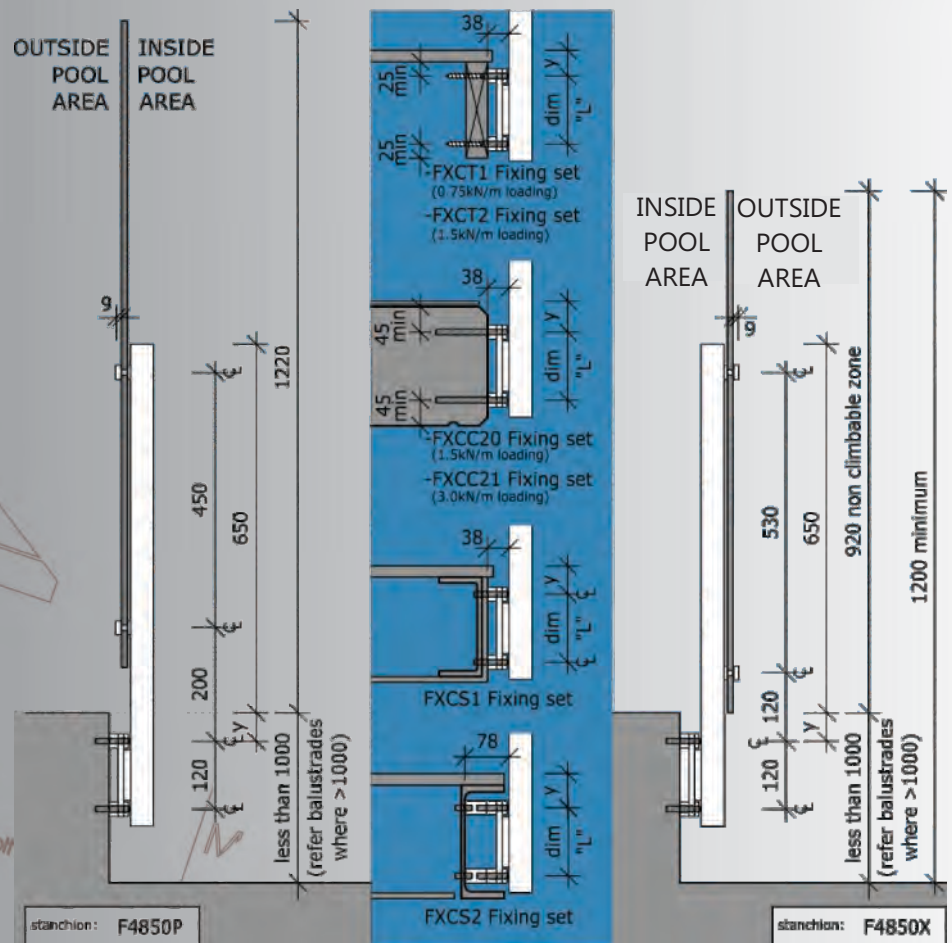


Glass to glass pivot kit

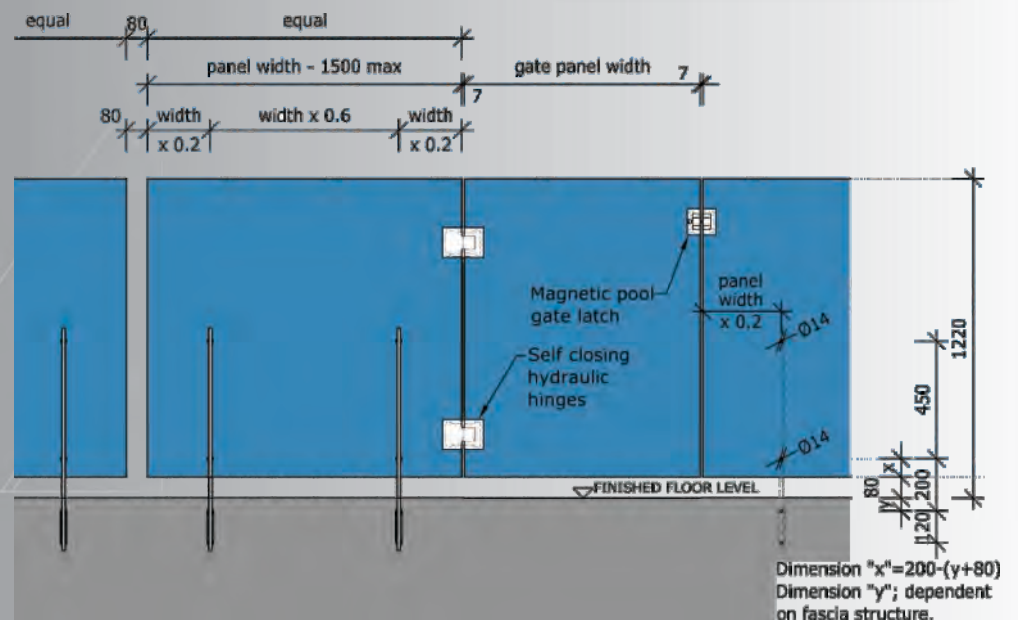


Magnetic latch kit

Fascia Fix Stanchion **F4850P**



Glass to glass hinge kit



# Top Fixed Pool Fencing - X1 Series Frameless Glass Systems

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Image courtesy of TAK Property Group

The X1 - Series Top Fixed Pool Fence system is designed for fixing to the surface of a deck or terrace, and is suitable for concrete and timber substrates.

Designed and manufactured in Australia from 316 marine grade stainless steel, it is fully compliant with AS 1288, AS 1926.1 and MP 3.4 of the QLD development code.



Image courtesy of TAK Property Group





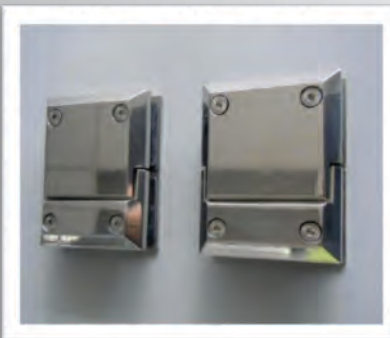
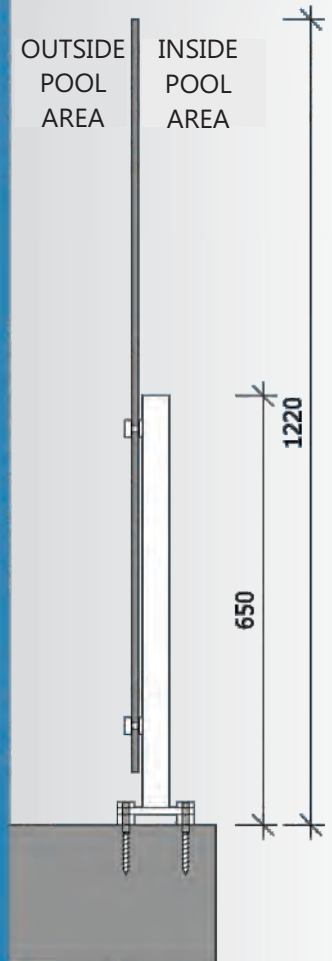
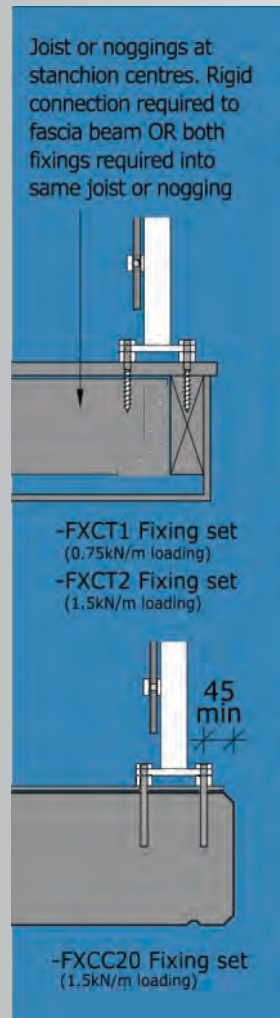
Top Fix  
Stanchion  
**T4650P**



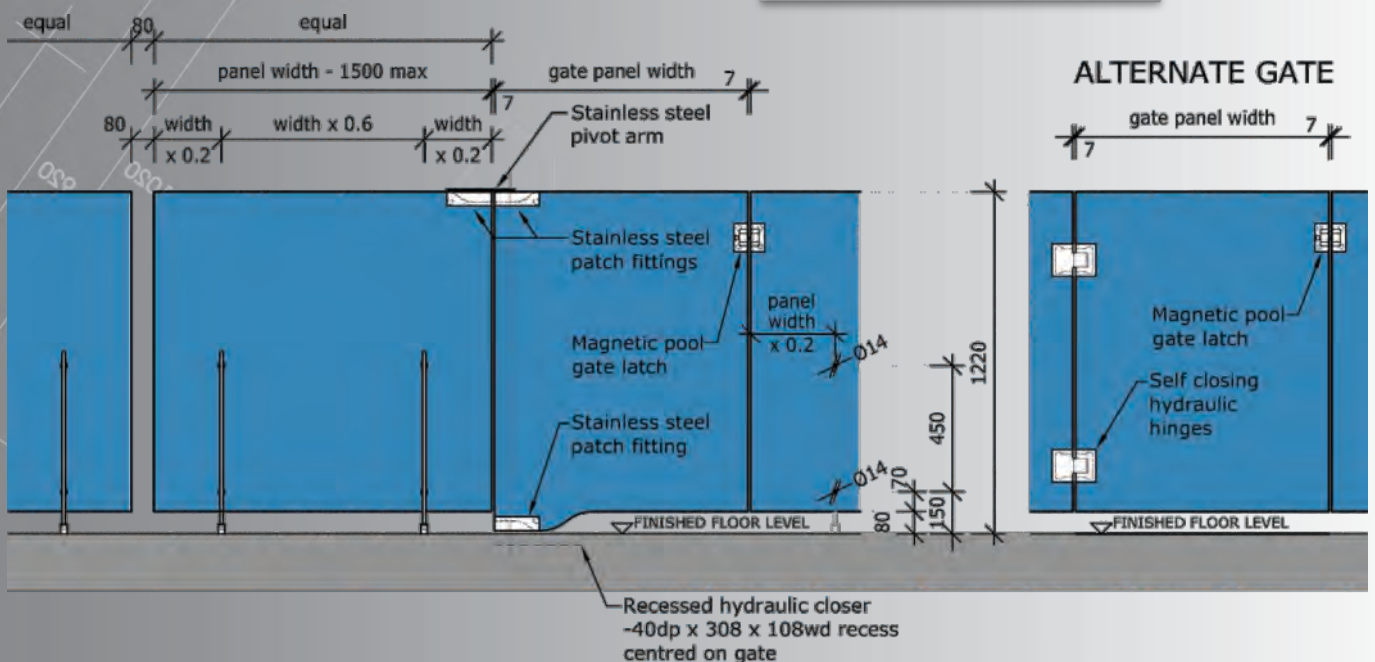
Glass to  
glass  
pivot kit



Magnetic  
latch kit



Glass to  
glass  
hinge kit



## Introduction

This guide provides detailed set-out information for the X1-Series frameless glass balustrades.

For additional information or assistance in the design of the balustrade systems, please contact Sales on 1300 310 176.

CAD files are available, for designers and Architects, on request which provide detailed information on the design, specification and installation of the various systems.

## Description

The X1-Series balustrades have been designed by Thump Architectural Fittings as a premium balustrade solution for any project. It has been rigorously tested and is engineer certified to withstand all balustrade loadings stipulated in AS 1170 (Structural design actions) up to and including crowd loadings.

The components for the X1-Series frameless glass balustrades, sunshades and awnings are manufactured in Australia using 316 marine grade stainless steel.

## Choosing a System

The selection of the system is mainly dependent on the structure to which it is fixing. The following details the structures suitable for the various balustrade types.

	Horizontal Balustrades			Raking Stair Balustrades			
	Concrete Structure	Timber Structure	Steel Structure	Concrete Stair	Timber Stringer	Steel Stringer	Cantilevered Treads
Core Fix	✓	✗	✗	✓	✗	✗	✗
Fascia Fix	✓	✓	✓	✓	✓	✓	✗
Top Fix	✓	✓	✓	✓	✓	✓	✓
Tread Fix	N/A	N/A	N/A	✗	✗	✗	✓
Point Fix	✓	✓	✓	✓	✓	✓	✓

## Point Fix Balustrades

Ideally panel widths of around 1200mm are preferable as this accommodates 3 rows of fixings whilst being manageable by a team of 2 installers. The panel widths, however, can be any size as required by the designer and can be designed based on the constraints detailed on the product data sheet.



# Stair Balustrades

It is important when designing the balustrade on a stair that the tops of all the stanchions are in a line parallel with a line running through the stair nosings (and handrail).

Generally, for the following balustrades and stair types;

- Core fix balustrade on concrete stairs,
- Fascia Fix balustrade on concrete stairs,
- Top Fix balustrade on any stair type AND
- Tread Fix balustrade on cantilevered treads,

the stanchions will be located so that their locations are the same relative to the tread nosings. This means the spacing of the stanchions, horizontally, will be in multiples of the going and will need to be designed based on the specific stair. More details and examples of these balustrades are available by request.

Fascia Fix balustrades, where fixing to a timber or steel stringer, won't be affected by the locations of the treads and can therefore be laid out based on the following setout diagrams.

## Handrail Requirement

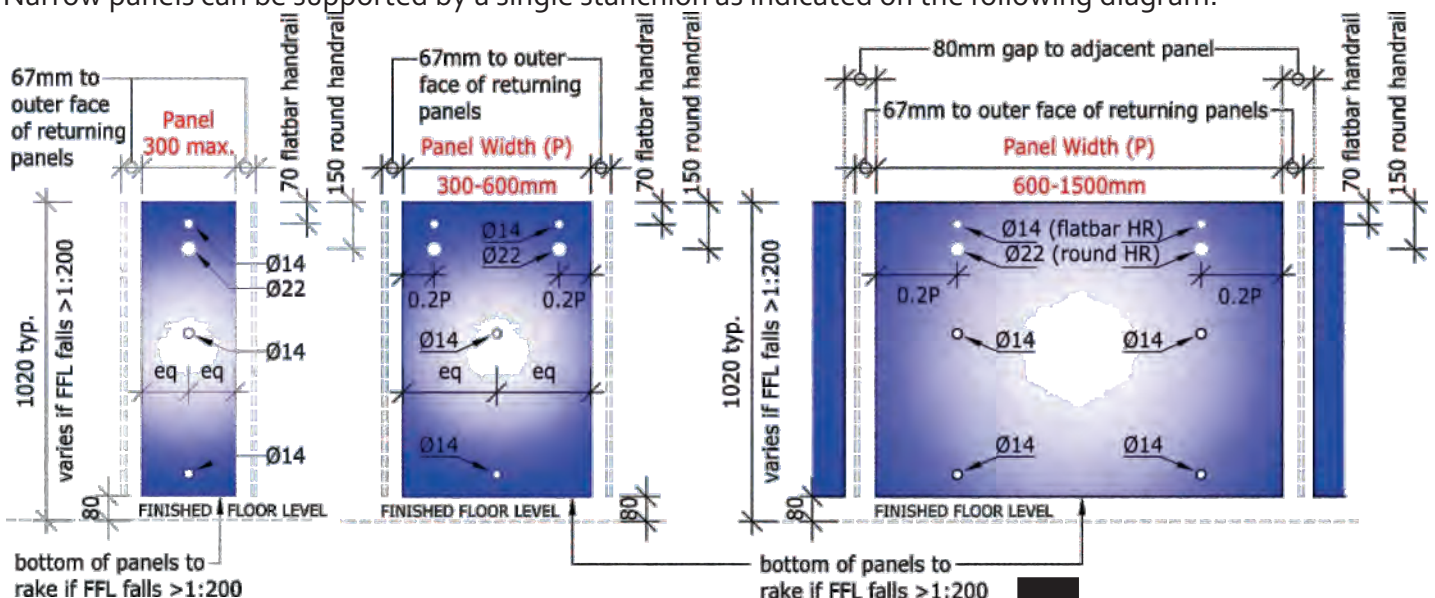
AS 1288-2006 states that any frameless glass balustrade, protecting a fall greater than 1m, requires an interlinking handrail which is load-supporting if a panel breakage occurs. This handrail must be connected to adjacent panels of glass or the building structure.

There are 2 options for handrails within the X1-Series range. The less obtrusive of the two is the 50x10mm stainless steel handrail, whilst the 38 diameter round stainless steel handrail complies with the requirements of AS 1428.1 making it suitable for disabled ramps and "required" stairs in buildings.

## Panel Layout

The X1-Series balustrades typically utilise a maximum glass panel width of 1500mm with 2 stanchions to support it. Balustrades with a balustrade loading more than 1.5kn/m require a maximum glass panel width of 1100mm. In order to maintain costs the panel widths should be maximised as much as possible.

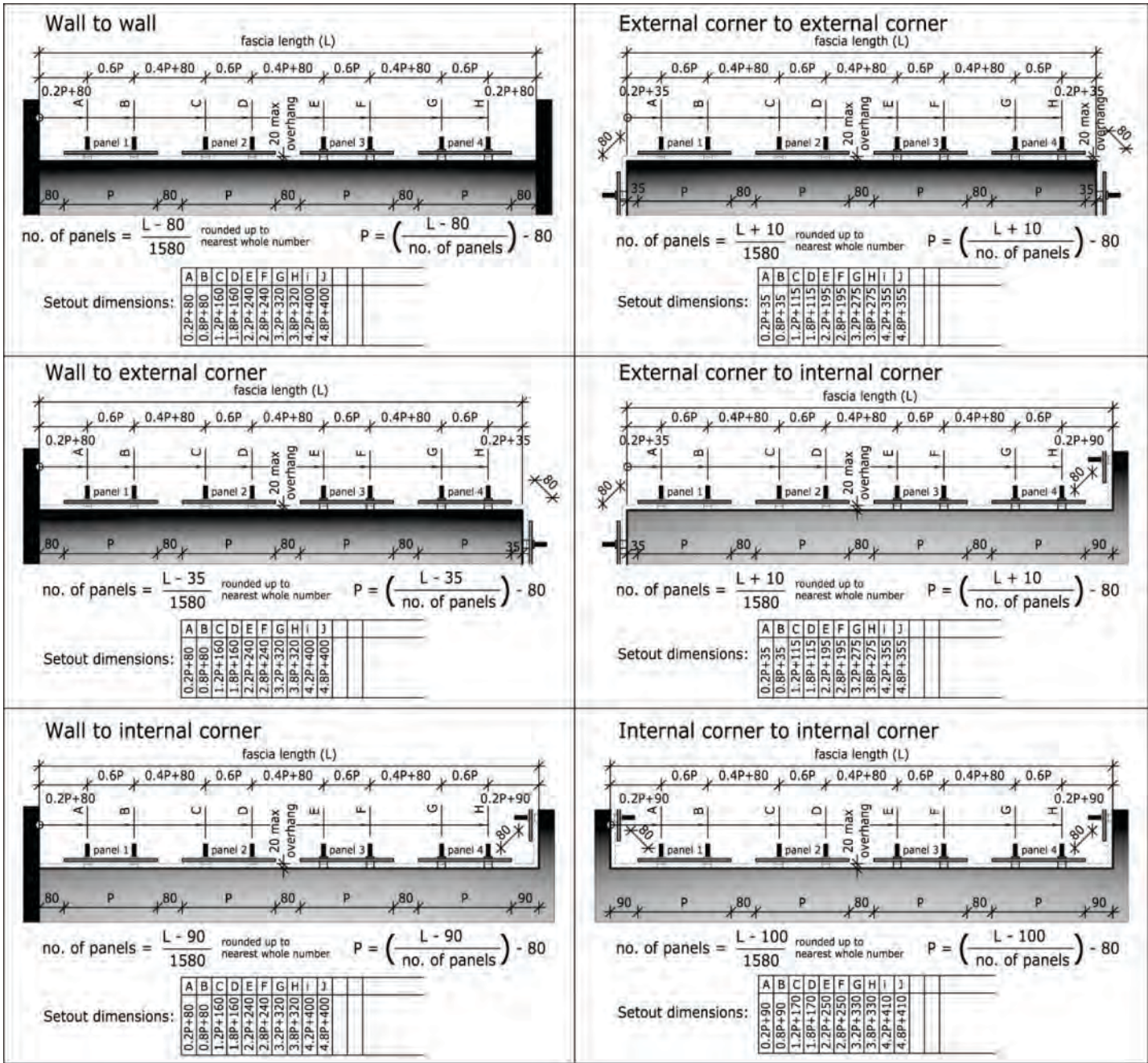
Narrow panels can be supported by a single stanchion as indicated on the following diagram:-



The diagrams on this and the following pages detail the panel and stanchion setouts for the Core Fix, Fascia Fix and Top Fix balustrade systems on horizontal balustrades and are based on a maximum balustrade loading of 1.5kN/m. Setouts for balustrades with higher loadings are available on request.

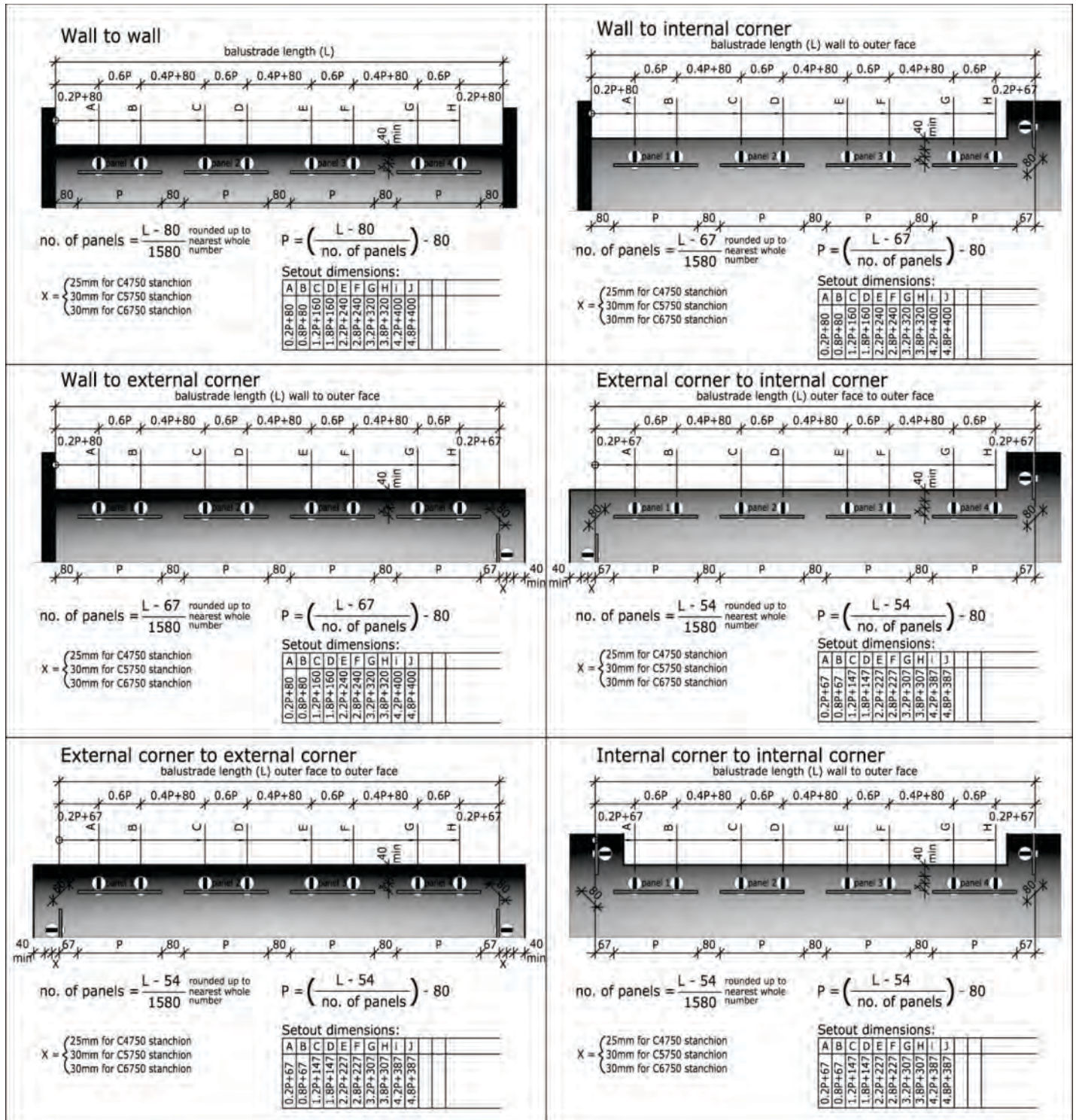
The 80mm gaps surrounding the glass panels are recommended based on aesthetics, cost and safety. Smaller gaps if needed by the designer may attract higher installation costs due to increased risks and decreased tolerances.

# X1 Series Fascia Fix Stanchion Setouts



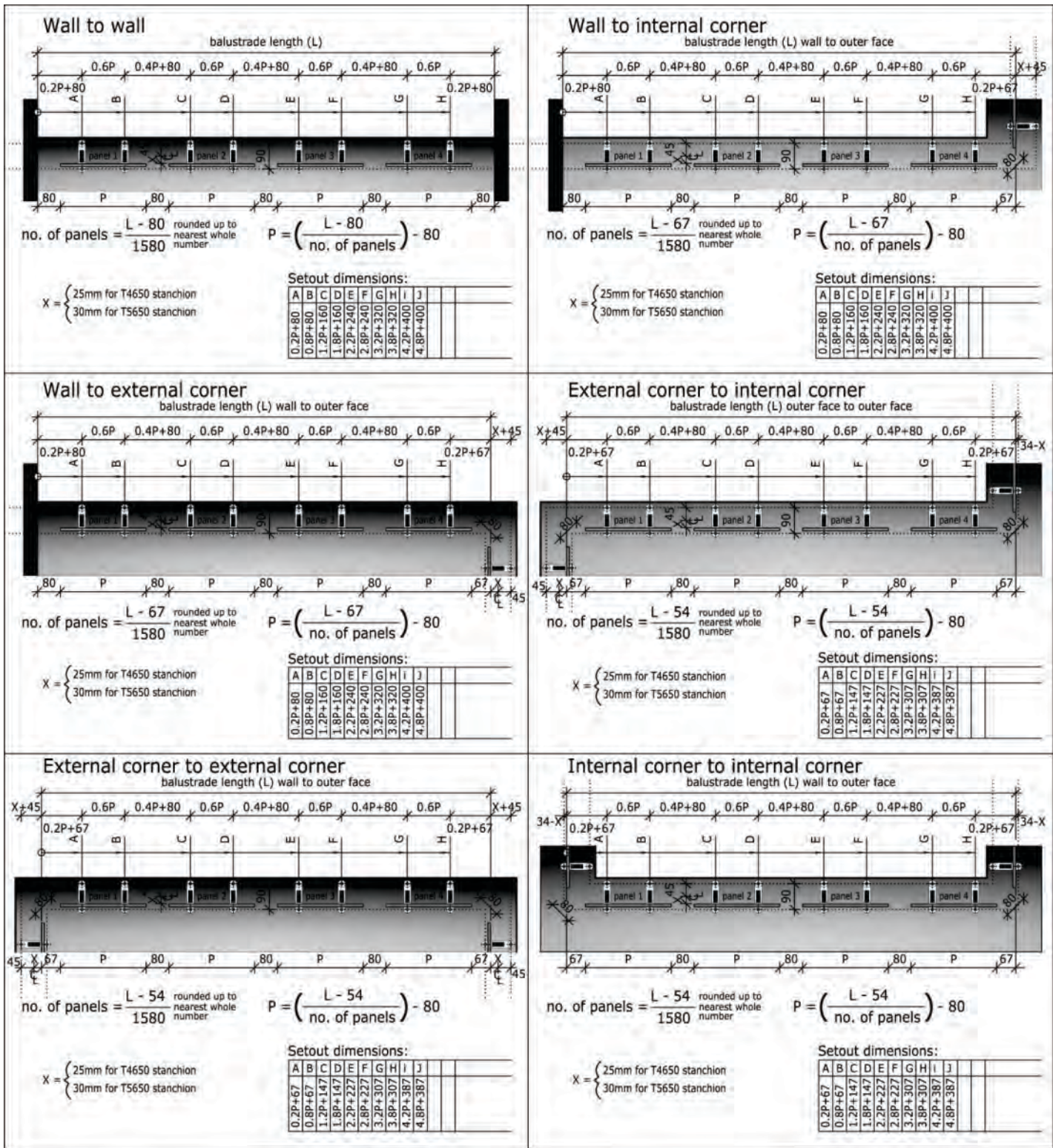


# X1 Series Core Fix Stanchion Setouts

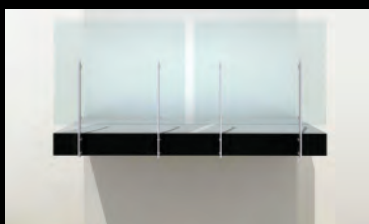
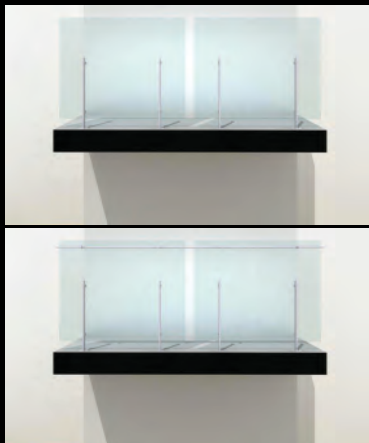
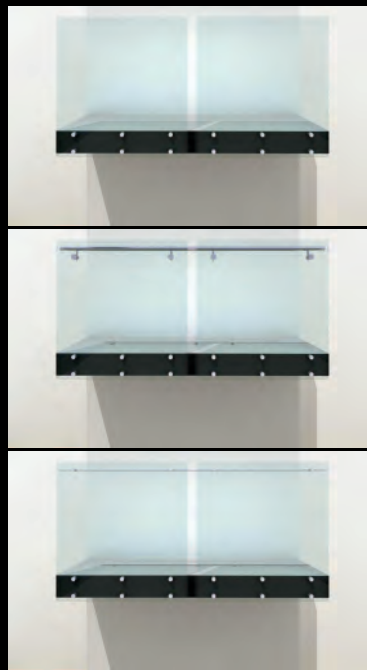
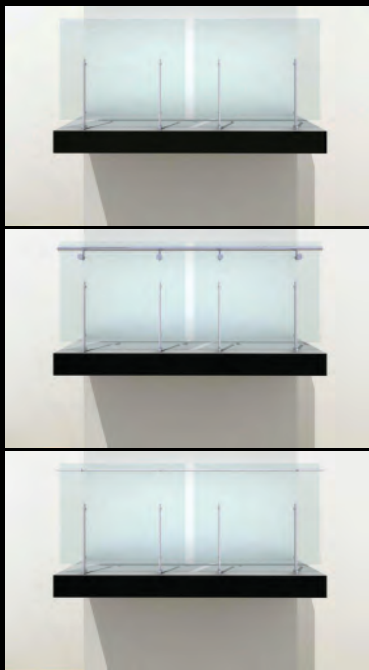




# X1 Series Top Fix Stanchion Setouts







thump  
architectural fittings

